

# Does anyone have the right time, please?

## A new perspective on time travel narratives in the 1950s & 1960s

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Time Machine ©Richard M Hallock 1996

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## **Abstract**

To travel in time, or to travel in space, is one of humanity's great aims, providing much work for scientists, and many interesting scenarios for writers of science fiction. Since H G Wells wrote *The Time Machine*, novelists and filmmakers have been using the concept in their stories of past, present and future.

This dissertation concentrates on four texts, all published in the 1950s and 1960s, by Isaac Asimov, Robert Silverberg, and Philip K. Dick. It offers a new perspective on time travel narratives by examining issues of science, philosophy and history in each. The texts use the concept of time travel in different ways, yet they are found to have many similarities.

Part One suggests a cross-fertilisation of ideas between popular science and the science fiction genre, focusing in particular on ideas of time travel and spacetime. This reveals a use of scientific language and ideas in the novels. In addition a particular style and tone, with its origins in fiction, is found in popular science writing that makes previously inaccessible science theory available to the general reader.

Part Two reveals the philosophy behind the concept of time travel, and discovers that each novel has within, an anxiety about the future of the individual in the larger frame of the universe, and a unique view of the nature of existence.

This dissertation provides the basis for the possibility of further research, in a contemporary setting, into the issue of cross-fertilization between science and science fiction.

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## Introduction: Critical Perspectives on Time Travel

Travelling in time, ironically, has a history. Since it has not been physically possible to do it (yet), this history is fictional and has been captured in novels, short stories, films and television, whilst also capturing over a century's worth of readers' and viewers' imaginations.

Authors have used visions and dreams to narrate past and future travel, for example, Dickens' *A Christmas Carol*. However, the first author to use time travel as a physical event was H G Wells in *The Time Machine*, a cautionary tale about a time traveller who uses a homemade time machine to travel thousands of years into the future.<sup>[1]</sup> The first half of the twentieth century saw many pulp science fiction writers create stories that centre around the concept. However it was during the 'golden age of science fiction', the period from the late 1940s to early 1970s, that time travel narratives were given the most attention by leading science fiction authors. *The Encyclopedia of Science Fiction* suggests that most writers of science fiction have included a story or two involving the concept in their career.<sup>[2]</sup> The Encyclopedia's attempts to classify different types of time travel narrative suggest some of the problems involved in any study of the concept. So, for example, whereas Clute and Nicholls separate the time paradox plot from time travel as a sub-genre,<sup>[3]</sup> I have found that, in many cases, where there is time travel to the past, inevitably, time paradoxes occur. Another, perhaps inherent, difficulty with the Encyclopedia is the tendency to categorise the time police stories as being from the 1950s and the metaphysical approach to time travel as belonging to the 1960s and after. This distinction is not appropriate to the texts I have encountered and to those still being produced today: the texts used in this dissertation further emphasise this.

Throughout the century, whilst novelists have been exploring time travel, movie and television makers have also been using the concept. The advent of television made popular series such as, *The Time Tunnel* (ABC TV, 1966), which features two scientists trapped in a time machine, that arbitrarily sends them to different time periods in each episode. Clute and Nicholls suggest that the performances/sets are 'dire'<sup>[4]</sup>, but this show has recently enjoyed many reruns as a cult classic on the popular 'Sci-Fi' television channel. Another popular, this time British series, is *Doctor Who* (BBC TV, 1963), which has enjoyed a long and successful relationship with viewers (many of whom watched from *behind* the sofa). The Doctor is a time traveller who uses a time machine (The Tardis) to travel in time and space. The addition of space here is interesting as this extra feature tends to be ignored by most authors, who prefer to keep their time travelling characters on the same planet. However, travelling in spacetime as a scientific concept is a notion that is discussed in Part One of this dissertation. In *British Science Fiction Cinema*, John Cook notes the use of science and history in the *Doctor Who* narrative in order to maintain the BBC's policy of educational input in television shows.<sup>[5]</sup> Cook refers to the series creator, Stanley Newman, as wishing to move away from the spectacular type of science fiction towards that based on what was already popularly known.<sup>[6]</sup> For example, the time machine, known as the Tardis, stands for time and relative distance in space, a reference to Einstein's theory of relativity. The use of popular science in science

fiction will be explored in further detail in Part One of this paper.

Film and television makers alike have seen many benefits in producing science fiction in the form of time travel. Instead of creating expensive extra-terrestrial sets and using up budgets on special effects by having space ships take off and land all over the place, filming people dressed in clothes from, say, the middle ages, and building a couple of dwellings is far cheaper. The time travellers then arrive in different, futuristic clothes and there is an instant, low budget, but effective film episode for television. It is a well-known fact that the makers of the original *Star Trek* series 'invented' the transporter device because they did not have the budget to land the Enterprise on 'strange new worlds' every week. There are several time travel episodes in the original series, perhaps the most memorable being the episode entitled 'Tomorrow is Yesterday' (NBC TV, 1966), in which, after a near-miss with a black hole, the Enterprise goes back in time to 1969, actually only three years on from when this season was filmed. This made it very simple and cheap for the costume and set designers in this episode. The trend was set in 'Tomorrow is Yesterday' for future episodes of *Star Trek* (all five series and the movies), for what primarily concerns each captain is restoring and keeping the timeline in its original state. Every single episode of any *Star Trek* series that has dealt with time travel has at the centre of the plot the motivation to protect the 'correct' timeline. This idea of protection is reflected in the narrative structure of the *Star Trek* phenomenon as a whole.

Time travel in movies can be, broadly speaking, divided into two categories. There are those that use the concept as an interesting 'twist' to the romantic comedy, for example, *Time after Time* (1979), *Somewhere in Time* (1980), the *Back To The Future* trilogy (1985-89), and *Peggy Sue Got Married* (1986). Secondly, there are movies that use the philosophical or scientific nature of time travel as the premise on which the plot is based: for example, *Slaughterhouse Five* (1972), the *Terminator* trilogy (1984-2003), and *Twelve Monkeys* (1998). As with all distinctions of this kind, there is some generalisation here. However, it is relevant to note the wide-ranging film genres that have included time travel in their plots. A further use for this distinction is to consider that, whilst this list is by no means exhaustive, the dates of the movies mentioned above indicate that, perhaps due to bigger and better budgets, and massive technological leaps in special effects, filmmakers can now produce any fantasy they want. Sending people backwards, or forwards in time is no longer the box office grossing guarantee it once was. Another reason for the movement away from time travel narratives may be the change in what is scientifically popular. The recent developments in genetics and artificial intelligence which themselves are not wholly unconnected, have spawned a new generation of films that reflect this for example, *X-Men* (2000) and *X2 (X-Men 2)*, 2003), and *The Matrix* trilogy (1999-2003).

This dissertation will offer a new perspective on time travel narratives concentrating on the period 1950-1970, and in particular, on four texts. *The Intelligent Man's Guide to Science* is the first of many non-fiction popularisations of science theory from science fiction author, Isaac Asimov. At the time of publication (1960) it earned Asimov a large royalty cheque of \$27,600.<sup>[7]</sup> This was a lot of money compared to what he had been paid for his science fiction. Three novels follow, *The End Of Eternity*, published in 1955, also by Asimov, *Counter-Clock World*, published in 1967, by Philip K Dick, and *Up The Line*, published in 1969, written by Robert Silverberg. *The End of Eternity* is regarded by some critics to be Asimov's best novel. *Counter-Clock*

*World* and *Up The Line* have been largely overlooked in references to their respective authors' work. However, in addition to their valuable contribution to the sub-genre of time travel fiction, each of these authors have enjoyed a long and successful career in, amongst other things, science fiction writing. They offer different writing styles and preoccupations, yet they have all lived and worked in America and have therefore witnessed the challenges that faced society in the 1950s and 1960s.

Part One of the dissertation examines the thesis that a cross-fertilization occurs between popular science and science fiction, focusing on the subject of spacetime and travel through time. *The Intelligent Man's Guide to Science* is analysed in terms of the style, language and content Asimov uses to 'popularise' the theory. Next, the three novels are considered with regard to the science theory contained in them. The writers employ quite different methods to create fictional science and it is here that the cross-fertilization between 'real' science and fiction can be observed.

Part Two explores the way in which the three novels use the device of time travel in an effort to explain, or reflect, upon the philosophical nature of existence. The individual features strongly in all three novels, as detective hero, as robot-like automaton, or as scapegoat. The struggle of the person against the faceless organisation is apparent in the novels, yet there is a marked difference in tone in all of them. In the earlier published *The End of Eternity*, there is a sense of optimism, whereas the later novels present a sense of hopelessness, although Silverberg's novel is satirical in tone. The use of the time travel plot enables the authors to examine the treatment of history by humankind and this is incorporated into the narrative in several ways.

Finally, the conclusion re-emphasises the new perspective offered by this dissertation and draws together the cross-fertilizations between texts (fiction and non fiction), popular science, and philosophy. Possible further developments in this area are suggested, highlighting in particular, a contemporary examination of the place of the time travel sub-genre in light of significant current advances in science and popular culture.

## Part One

# The science of time travel



The Fabric of Spacetime © David J Grossman 1996

## Introduction: Searching for science

When considering the term science fiction some useful questions to ask would be: what is the ‘science’ in science fiction? Is it a sort of science that we can trust as readers? Are there any real facts hidden behind the fiction? Also, what would the ‘fiction’ be without the science? It is a widely held belief that genre fiction (which is to include science fiction) occupies a separate cultural space to that of mainstream literature. Some (for example, Patrick Parrinder, Darko Suvin[8]) have tried to bridge the gap by performing literary analysis on certain authors (for example, J G Ballard, Kurt Vonnegut[9]) who themselves choose to cross the invisible boundary between genre and mainstream. However, rather than applaud the ‘literary’ nature of science fiction texts in order to afford them a place in the canon, Part One will examine science fiction within the wider cultural space of intellectual understanding and speculation. Taking as its central theme the subject of time travel in both non-fiction and fiction, Part One aims to illustrate the interconnectedness of science, culture and literature. I will be developing an argument that, using time travel as a focus, places the ‘science’ of science fiction back under the spotlight.

Brian McHale, in his book, *Constructing Postmodernism*, uses a phrase he calls ‘Feedback in the Literary System’[10] to explain his theory that cyberpunk science fiction has within it elements of postmodern mainstream fiction which in turn has already assimilated traits of science fiction. Many critics have suggested that the previously thick lines drawn between ‘low’ and ‘high’ culture have become increasingly blurred, a feature of postmodernism. McHale instead suggests a kind of ‘trafficking of ideas’ between high and low culture, which has increased in speed through the technological advances made in recent years. He traces the chronology of science fiction texts and modernist to postmodernist (mainstream) texts in order to highlight the ‘cross-fertilization’ between the two:

A feedback loop begins to operate between SF [science fiction] and postmodernist fiction. That is, we find postmodernist texts absorbing materials from SF texts that have already been ‘postmodernized’ to some degree through contact with mainstream postmodernist poetics. Reciprocally, we find SF texts that incorporate models drawn from postmodernist fiction that has already been ‘science-fictionized’ to some degree through its contact with SF poetics. Thus, certain elements can be identified as having cycled from SF to mainstream postmodernism and back to SF again, or in the opposite direction, from mainstream fiction to SF and back to the mainstream again.[11]

This theory can be examined in detail with reference to time travel narratives, particularly during the mid-twentieth century, specifically, 1950s and 1960s. At this time (from the perspective of mainstream literature) late modernism was fading and the postmodern era was beginning. As McHale suggests, “modernists repudiated and sought to camouflage their reliance on popular art models,”[12] whereas postmodernist fiction tends not to hide the integration of such models into the text.

Taking popular science models in the same sense as popular art then, how did science fiction authors writing at this time assimilate popular science into their fiction? Stanley Schmidt in his essay, ‘Science in Science Fiction’, comes up with a constructive distinction between two speculative uses of science in science fiction, extrapolation and innovation. Extrapolation, he argues, happens when authors use known scientific principles in

order to describe future human societies, or alien worlds based on the same values on which our own world operates.<sup>[13]</sup> Innovation, however, according to Schmidt, is less likely to include any proven scientific theory and he gives time travel as one of the ‘classic’ examples of innovative science fiction speculation. “Innovative speculation cannot be proved possible. If it could, it would no longer be innovative, but would have been assimilated into the body of ‘established...scientific knowledge’.”<sup>[14]</sup> Schmidt continues by stating that innovation plays an important role in science fiction; however, any new ideas must not contradict already accepted scientific fact. Schmidt’s assessment of new ideas and his conception of science are only tenuously linked; he tends more towards a blunt distinction between the two. Another way of looking at science fiction, included by McHale in *Constructing Postmodernism*, is posited by Malmgren, in which he uses the term ‘speculation’ to mean, “an imaginative leap, positing one or more disjunctions with the empirical world, in particular the current state of the empirical world.”<sup>[15]</sup> McHale’s view of Malmgren’s argument gives science a place in speculative or to use Schmidt’s term, ‘innovative’ science fiction.

I would suggest, following McHale’s argument, that a trafficking of ideas between popular science and science fiction takes place. Schmidt’s argument is “There are some things which were once innovative, have not even remotely become part of accepted scientific knowledge, and yet are now readily accepted by readers without explanation.”<sup>[16]</sup> This statement, however, disregards the interconnectedness of popular science and science fiction and in doing so separates fiction from culture. Surprisingly, Schmidt appears to contradict himself when, later in the essay he uses Isaac Asimov’s three types of story (gadget, adventure, and sociological) to examine how science is used to make a story.<sup>[17]</sup> He uses the (fictional) example of the ‘innovation’ of the automobile by a writer say three centuries ago and describes, using the above three categories, how each plot may read. However, to conceive of the automobile three centuries ago would depend on the (fictional) author having some knowledge of how, for example, a wheel works and where power may come from. Indeed there are many other implicit scientific principles that seep into a story that we take completely for granted. In the same way many science fiction ‘innovations’ have found their way into the laboratories of the most famous scientists of the twentieth century. Less than thirty years after Schmidt wrote this essay, Richard Gott, an astrophysicist from Princeton, NJ, writes:

Time travel to the future is already known to be permitted, and physicists are investigating time travel to the past as well. To appreciate what scientists are studying now, an excellent first step is to explore major time-travel themes in science fiction, where many ideas in this arena were first advanced.<sup>[18]</sup>

Gott begins (in the much the same way as this paper) by looking at the way in which H G Wells introduced the idea of time as a fourth dimension, ten years before Albert Einstein used this idea in his theory of special relativity.<sup>[19]</sup> Even though, as Schmidt suggests, the concept of the time machine as a plot device is innovative, in other words, it has not been proven to work scientifically (although it has been theoretically), several basic scientific principles need to be accepted by both author and reader in order for the ‘innovative’ to happen. Gott links several films, novels and television series to the various imaginative ideas that scientists have been playing (in

the serious sense of the word) with since Einstein.<sup>[20]</sup> Schmidt's distinction between science and fiction does not take into account the ability of the creative imagination to grasp ideas from any source in order to produce a great story. It also disregards the nature of the scientific imagination and the fact that each new scientific principle started out as, a theory (or an idea), in the mind (or imagination) of the scientist.

Einstein famously said that he only ever had three good ideas.<sup>[21]</sup> Whilst this story may be more myth than legend it is known that Einstein valued imagination and creativity above academic learning and knowledge. It is possible, as Gott shows in the first chapter of his book, to trace a chronology of connection between time travel theory in popular science writing and time travel theory in science fiction. Rather like the popular 'which came first' question, it is impossible to pinpoint an exact date or seminal text that begins this process. It is instead, more effective to produce examples of such 'cross-fertilizations'. Rather than replicating Gott's examples, I have chosen to examine Asimov's two-volume work, *The Intelligent Man's Guide to Science*, published in 1960 and, in more detail, the novels, *The End of Eternity*, *Up the Line*, and *Counter Clock World*, as presented in the Introduction. This also enables the discussion to move away from Gott's (albeit very worthy and interesting) thesis on whether or not time travel is actually possible, to how fiction may express the implications of popular and contemporary scientific theories, focusing in particular on the subject of time travel.

## **The Non-Fiction: *The Intelligent Man's Guide to Science***

Asimov is perhaps best known for his science fiction *Foundation* and *Robot* series, however, he wrote numerous works of non-fiction. The way in which Asimov presents his non-fiction, in this instance *The Intelligent Man's Guide to Science*, reflects the fact that he is a science fiction writer. It is possible to argue that, in writing popular science books, Asimov contributed to the imagination of a generation of readers, making previously incomprehensible theories and principles accessible by drawing the reader in, as an author would with a fictional plot. And, it is possible, as proved by Gott, that the reader may herself become a science fiction writer, or indeed a scientist. Although Asimov was by no means the first to break into the market for popular science books (see George Gamov's extremely readable *One, Two, Three... Infinity*<sup>[22]</sup>) he was unique in that he was enormously successful in his career as writer of both fiction and non-fiction.

It is useful to examine in more detail, the way in which Asimov exercises his skills as a writer of fiction, and how he uses his literary imagination to bring to life the account of scientific development. The following section will consider, in the main, the following two questions. In what way does a writer like Asimov 'popularise' science? And, is it possible to see a connection between his style of writing non-fiction and fiction?

Asimov opens the first volume of *The Intelligent Man's Guide to Science*, with a chapter entitled 'What is Science?' It is clear from the first sentence that this is to be no dull textbook. Asimov begins with a nod to biblical language, "Almost in the beginning was curiosity",<sup>[23]</sup> placing his intentions for this work clearly with the 'intelligent' public, and not exclusively with the scientific community. He narrates the journey of 'curiosity' using metaphors drawn from nature to lure the reader into believing that a story will follow. And that is exactly

what does happen. Asimov, cleverly and succinctly, sketches the history of scientific thought from “the one-celled paramecium”<sup>[24]</sup> through Greek philosophy to Isaac Newton in less than twenty pages. He speaks of myths and legend, desire and success. At this point, as is the case with many of Asimov’s works of fiction, the reader is eager to know ‘what happens next?’ Asimov’s work is complete; he has made science popular and accessible in one single chapter. In addition to the metaphorical language and easy narrative, the content of this chapter invites the reader to become part of those ‘in the know’ about science:

Yet modern science need not be so complete a mystery to non-scientists...To gain a satisfactory appreciation of the developments in a field of science, it is not essential to have a total understanding of the science...no one can really feel at home in the modern world unless he has some intelligent notion of what science is up to.<sup>[25]</sup>

These words are a gentle challenge to the layperson to become involved in the world of science. The title of the book is suggestive. It says, “If you read (or even buy!) this book you are an intelligent ‘man’” (the publication predates the successful attempt by women to initiate the use of non-gender specific language). There is a sense of pride, underneath the narrative, that this author is already in that world, and of course, as Asimov was a biochemist, this is hardly surprising. However, there is also a awareness in the text of the wonder and power of science. This volume was published in 1960 and Asimov was commissioned to write it in 1959.<sup>[26]</sup> Scientists and the new discoveries in science benefited from the general optimism of the nineteen fifties. The terrible consequences of atomic power had not yet been widely recognised and with the relatively good financial position, money was being poured into scientific research. NASA (National Aeronautics and Space Administration) was formed in 1958<sup>[27]</sup> and the ‘space race’ between the superpowers of the USA and the USSR had begun. Although the Cold War had been simmering since the end of the Second World War, it was not until the Cuban Missile Crisis of 1962 that the general public began to take a negative view of what Asimov described in 1960 as “the most terrible weapon of destruction ever devised.”<sup>[28]</sup> Despite this description, the first guide to science written by Asimov remains positive, expressing the view that science is good, fascinating, and not something to be afraid of.

However, in contrast, the fourth edition of the same guide, entitled, *Asimov’s New Guide to Science*, contains in the first chapter a different and rather sobering summation of the previous twenty years in this author’s experience. He adds two paragraphs towards the end of the chapter which detail the negative effects that such rapid advances in science have brought: “our society finds it is plagued by undesirable side effects of [science’s] very success.”<sup>[29]</sup> Asimov ends the chapter by adding to the sentence already quoted from the original edition in this essay (footnote 16) “no one can really feel at home in the modern world *and judge the nature of its problems-and the possible solutions to those problems-unless one has some intelligent notion of what science is up to.*”<sup>[30]</sup> (The italics identify the additional narrative in the later edition) Like any great author, Asimov not only edits the contents of the fourth edition to include recent scientific developments, but also reflects through the narrative, the changing attitudes towards science between the nineteen fifties and nineteen eighties.

Asimov does not use the phrase ‘time travel’ in either edition. However he carefully explains the ‘clock

paradox' that arises from Einstein's theory of relativity. In the first edition the narrative is made up mostly of questions, the explanations are brief, and it is clear that these theories are very much new to the scientific world. "This is the famous 'clock paradox'. Theoretical physicists are still having serious fun with it today."<sup>[31]</sup> In the fourth edition, Asimov expands on the theories, the narrative has a more confident edge to it and introduces the new concept that the paradox does not exist; presumably based on the discoveries made between the two editions. In the first edition he suggests a theoretical experiment that would solve the clock paradox. The section concludes with a speculative notion that is typical of Asimov's writing style and could have been lifted from any of his fiction:

If time really slows in motion, a person might journey even to a distant star in his own life-time. But of course he would have to say goodbye to his own generation and the world he knew. He would return to a world of the future.<sup>[32]</sup>

This conclusion is unchanged in the fourth edition, yet what precedes it is quite different in terms of Asimov's approach to the topic. Where in the 1960 version he was suggestive, attempting to play with theories, here the style is serious and scholarly. Asimov builds on the speculations made in the first edition and challenges the reader to look more closely at the theory. It is useful to compare the two different styles which both follow the explanation of the clock paradox:

The theoretical arguments no doubt will rage on for a long time to come, but in the meantime the question as to whether a fast-moving clock actually does slow down may be settled by experiment. (1960)<sup>[33]</sup>

And:

Actually it is not a paradox at all. (1984)<sup>[34]</sup>

Clearly, the experiment (or something like it) suggested by Asimov in the first edition has taken place. However, it is important to note that, in the later edition, Asimov explains in detail the reasoning for this statement, ending with the conclusion from the first edition. This would suggest that, while there has obviously been a move forward in the way relativity is understood, the answer remains the same. And yet, Asimov spends at least one extra page explaining the theory. It is possible that the 'intelligent man' had become a reader with an even more voracious appetite for scientific theory, and Asimov, knowing his audience, responds to that in the fourth edition.

The gradual incorporation of what was previously speculative, into more accepted theory is significant in the consideration of the theory of time travel. Despite Kurt Gödel's deduction that time travel is theoretically possible,<sup>[35]</sup> it may be that Asimov does not explicitly mention the phrase 'time travel' in this work of non fiction simply because the subject was regarded as unworthy of research by many in the scientific community. This is not surprising given that, as recently as 2001, it was suggested by Stephen Hawking, in his book *The Universe in a Nutshell*, that scientists still have to be careful when discussing time travel as a serious concept.<sup>[36]</sup> A review in *New Scientist* of Richard Gott's book referred to earlier in this chapter implies that physicists working on time travel are somehow not doing 'worthy' research, but nonetheless having fun at the expense of the funding agencies and therefore need to be clandestine about their work.<sup>[37]</sup> The clock paradox inevitably leads to a theory of time travel, as explained by Stephen Hawking in his first popular science book, *A Brief History of*

*Time*. He begins Chapter 9 ‘The Arrow of Time’ by mentioning the clock paradox and then moves straight on to the concept of ‘imaginary time’:

This means that there can be no important difference between the forward and backward directions of imaginary time. On the other hand, when one looks at “real” time, there’s a very big difference between the forward and backward directions, as we all know. Where does this difference between the past and the future come from? Why do we remember the past but not the future?<sup>[38]</sup>

In this quotation, Hawking is merely suggesting the possibility of time travel; he states that his colleague and friend Kip Thorne is the one who develops these theories.<sup>[39]</sup> In the fourth edition Asimov does mention that scientists were having ‘fun’ with the clock paradox, and by a change in style and content hints at a theory of time travel; but just as Schmidt suggests for science fiction, Asimov does not discuss that which is still regarded as innovative. As a scientist, Asimov needed to command a level of respect amongst his non-fiction audience that would not lead critics into suggesting that he should be pigeonholed into fiction or non-fiction.

### **The Fiction: *The End of Eternity, Up the Line and Counter-Clock World***

In the introduction to Part One it was proposed that science must make room for the use of creativity and imaginative play in order to develop new theories and speculate about the universe. A theory was posited, based on McHale’s work, of a ‘trafficking of ideas’ or cross-fertilization between popular science and science fiction. It was suggested that, when dealing with that which Schmidt terms as ‘innovative’ in science fiction (for example, time travel) the cross-fertilization can be spotted in terms of scientific principles seeping into a story. This section will highlight some of those principles as points of departure for time travel as a narrative device. The author’s attempt to imagine time travel as an actuality is not put to the test here; rather, it is the underlying concepts and how they are expressed that is of more interest to the cross-fertilization debate.

Behind most popular science reference to Einstein’s theory of relativity is the story of the clock paradox. In his non-fiction guides to science, Asimov carefully explains that the passing of time is relative to the person or thing experiencing it, hence the paradox of one person thinking their clock is correct and the other person claiming that theirs is right. Motion is also relative to the frame of reference. To use Asimov’s example, it would appear that a planet is moving quickly past our stationary planet. However, to the people on the other planet, it would appear that it was our planet that was moving quickly. In the opening two paragraphs of *The End of Eternity*, Asimov fictionalises this theory exactly:

Harlan set the controls and moved the smoothly working starting lever.

The kettle did not move.

Harlan did not expect it to. He expected no movement... Yet the spaces between the rods had melted into a grey blankness which was solid to the touch... And there *was* the little stir in his stomach... that told him that all the kettle contained, including himself, was rushing up when through Eternity.<sup>[40]</sup>

There is much to say about this short extract. The novel was published in 1955, five years before the *Guide to Science* was published. Here, Asimov shows both knowledge of relativity and a desire to incorporate it into

fiction. It is clear from the language used that a machine is described here; there are controls, a lever, rods, and an experienced operator in Harlan. The theme of paradox that is to run throughout the novel is present immediately in the way Harlan feels no movement, but knows (and therefore so does the reader) that he is moving. This is the part that is embedded in science. By exercising the theory of relativity at the beginning of the book Asimov is claiming some measure of authenticity for this machine. Yet the author chooses to call the machine a 'kettle'. An everyday object such as this evokes an image in the reader's mind of something attainable; that can be visualised. A clue to this choice can be found several paragraphs on. Harlan has arrived at his destination and steps out of the kettle:

The kettle he left, of course, was not the same as the one he had boarded, in the sense that it was not composed of the same atoms. He did not worry about that any more than any Eternal would. To concern oneself with the *mystique* of Time-travel, rather than with the simple fact of it, was the mark of the cub and newcomer to Eternity.<sup>[41]</sup>

Apart from occasional and brief explanations of scientific theory, which are meant to satisfy the amateur scientist, Asimov does not want the reader to become overly concerned with the 'how and why' of the time machine in this novel. This would deflect the reader from the important themes that thread their way through the narrative. This, as Schmidt would suggest, is a sociological novel in which the machine is not the focus. On further inspection of the first quotation, the word 'Eternity' is given with a capital, implying the idea of an organisation rather than a concept. The use of the word 'upwhen' is a style of language that has a sense of the biblical, a suggestion that translates into a theme as the novel moves forward.

That is not to say that Asimov was not interested in the science in his fiction. James Gunn, in his book, *Isaac Asimov: The Foundations of Science Fiction*, tells how Robert Silverberg, in discussion with Lester Del Rey, championed the "human aspects of a science-fiction story over the scientific detail", mentioning as an example the insignificance of plutonium-186, which of course doesn't exist. Asimov, who was listening to this discussion reportedly pointed out this error to Silverberg, who was unconcerned. Asimov said, "to show you what a real science fiction writer can do, I'll write a story about plutonium-186."<sup>[42]</sup> The story became the novel *The Gods Themselves*, and Gunn later mentions that in writing this novel, Asimov meant the science in it to be "at least as important as the characters, a story which could not happen without the scientific content."<sup>[43]</sup> The novel is complex and requires a certain level of understanding on the part of the reader, knowledge that is not required for a reading of *The End of Eternity*. Nonetheless, there are explanations in the latter that, given the style of the narration, could have been reprinted in the *Guide To Science*. For example, on page 39 Asimov explains the passage of time for the human operating in Eternity:

In Eternity there was no Time as one ordinarily thought of Time in the universe outside, but men's bodies grew older and that was the unavoidable measure of Time even in the absence of meaningful physical phenomena. Physiologically Time passed, and in a physioyear within Eternity a man grew as much older as he would have in an ordinary year in Time.<sup>[44]</sup>

As far as science theory is concerned, this passage is ambiguous. It suggests that time is relative to the body, in

other words, a person living in Eternity experiences ‘time’ through their body, not relative to the space they occupy three-dimensionally (otherwise they would age at a different speed to those living in the ‘normal’ universe). Asimov has combined relativity with a new concept that suggests a place where Einstein’s theory is not totally applicable. Hence, as any great science fiction writer would, Asimov takes from science what he wants, and then builds on those foundations to produce a new line of thought. The reader does not need to know about the ‘Theory of Special Relativity’ in order to understand the concept Asimov presents in this passage. By keeping the same passage of time whether one operates in Eternity or not, Asimov puts all the focus onto this new and mysterious place; the scientific questions raised by the keen reader are answered in one straightforward passage. This leaves the reader to begin to question the nature of Eternity, and perhaps also by doing so, the nature of eternity as a metaphysical concept. I propose that this is the main theme of the novel, and I shall address this idea in Part Two.

If Asimov is an author who takes science theory as his starting point, Robert Silverberg writes from an historical perspective. Like Asimov, Silverberg has also written many works of non-fiction, but these are to be concerned with history and philosophy, rather than science. That is not to say, however, that science does not have a place in Silverberg’s fiction. *Up the Line*, published in 1969 is, as John Clute and Peter Nicholls state, “a clever time-paradox story”.<sup>[45]</sup> Somewhat confusingly, the phrase ‘up the line’ in this novel refers to time travelling into the past, unlike Asimov’s ‘upwhen’ which refers to travelling into the future. In Chapter Nine Silverberg approaches the subject of time paradoxes, although without the clarity of Asimov. It may be suggested that the complicated nature of time paradoxes are developed by the complicated explanations given here. The plot is kept simple; the protagonist, Judson Elliot, is a drifter who wishes to take the easy way through life. Through a chance meeting with Sam who works for the Time Service, he becomes a Time Courier, shipping tourists up and down the timeline. Unfortunately he meets the woman of his dreams, Pulcheria, who turns out to be in his family line. He cannot stay away from her and meets himself, thus creating a paradox that is not allowed by the Time Patrol who remove him from the timeline altogether, in effect killing him. Through an uncomplicated plot, Silverberg is able to offer the reader many more snippets of science theory, without ever resolving any of them:

‘I spoke the other day of cumulative audience paradox. This is a severe philosophical problem which has not yet been resolved, and which I will present to you now purely as a philosophical exercise...as commercial time-travel progresses, it must inevitably smother every event in a horde of spectators, yet at the original occurrence of these events, no such hordes were present! How is this paradox to be resolved? ...It stretches the intellect to revolve such thoughts.’<sup>[46]</sup>

This is a playful approach to the scientific theory that underpins any attempt by an author to fictionalise time travel. Although the theme of paradox is repeated throughout the narrative, Silverberg does not explicate the paradox theory further than the passage quoted. For the purposes of this novel, it is enough that it exists, for it ultimately leads to the downfall of the protagonist. He refers to the paradox as a philosophical question, raising the issue of the place of philosophy in scientific thought. Obviously, the ‘Benchley Effect’<sup>[47]</sup>, Silverberg’s name for the way time travel works in *Up the Line*, is a scientific process, an actuality; however the problems raised

by the physical act of travelling in time can create philosophical issues such as the one in the passage quoted.

In this light-hearted, satirical novel, it is not clear whether Silverberg intended to raise issues of philosophy in scientific thought; nevertheless this is a good example of the cross-fertilizations that occur between science fiction and popular science. In *Philosophy of Science in the Twentieth Century*, Donald Gillies explores what he terms as, the question of demarcation between metaphysical theory and scientific theory.<sup>[48]</sup> He examines Karl Popper's thesis that states; rather than attempting to 'verify' a statement, in order to confirm it as a 'truth'; 'falsifiability' of metaphysical statements is a more logical approach.<sup>[49]</sup> Gillies states: "Popper holds that theories may start life as metaphysical, but then come gradually to be transformed into scientific hypotheses."<sup>[50]</sup> Once a theory is offered as falsifiable, in other words, if it can be tested against another theory, then it becomes scientific. Popper uses the example of atomism to explain the relationship between metaphysics and science and Gillies suggests that: "Without the metaphysical ideas of atomism to guide their research programmes, it is very doubtful whether Dalton or Maxwell could have devised their specific scientific hypotheses."<sup>[51]</sup>

It is useful to make two separate points here. First, in *Up the Line*, the narrative suggests a demarcation between science and metaphysics. For example, the Time Service use the Benchley Effect in order to travel in time, whilst ignoring – and encouraging the recruits to do the same – the resulting paradoxes that occur. In Chapter Twelve, a Time Patrolman arrives to lecture the new recruits on the "perils of daring to meddle with the fixity of past time."<sup>[52]</sup> Despite lengthy attempts to explain the paradoxes that can occur, including the 'Ultimate Paradox' (in which the era that produced time travel is wiped out) neither the Time Patrolman or Mr Dajani, the teacher, are entirely convincing in their explanations of the subject. It may be that this is a deliberate attempt by Silverberg to satirise the notion of travel to the past, which remains less possible than travel to the future. He takes what is a generally held belief about time travel and turns it into fiction, in other words he makes it work scientifically. Consequently, the plot relies heavily on the characters taking what the reader would regard as the metaphysical option; that is, blindly leaping into the past, without considering the empirical data. It is suggested through the narrative, in the character of Mr Dajani, for example, that even those members of the Time Service who teach others do not really know how it all works but are not going to miss out on what looks like an exciting opportunity:

'You can be sure,' he said, 'that the past *is* restored whenever it is changed. The hypothetical worlds created by unlawful change cease retroactively to exist the moment the changer is apprehended. Q.E.D.'

That didn't explain a damned thing. But it was the best explanation we ever got.<sup>[53]</sup>

Q.E.D. suggests both an end to discussion, and also that the facts will prove the theory, in this instance a prophetic statement to make, given the novel's outcome. The protagonist falls prey to the 'Ultimate Paradox', and is deleted from existence by the Time Patrol. The characters in this novel do not really care about 'scientific truth', they want to be part of the experience whatever the consequences.

The second point to make concerns the way in which this novel reproduces the discussion in the real

world on the role of philosophy (and by this I mean metaphysics) and scientific thought. The section in Donald Gillies' book entitled 'Science and Metaphysics' concludes that whilst metaphysics is meaningful, it cannot be tested, and cannot therefore be regarded as 'knowledge'. It would appear that, in the post-modernist era (and I use the hyphen purposely here) that we are experiencing, no-one, scientists included, can lay claim to truth, only knowledge. In this respect, Gillies' distinction between metaphysics and science is appropriate to this argument. *Up the Line* has been overlooked by Silverberg's critics who give it only the briefest of mentions as an amusing anecdote on the treatment of history, which it most certainly is. [\[54\]](#) (Part Two of this dissertation will examine the implications of Silverberg's treatment of history through time travel in *Up the Line*.) However, it also satirically reflects the debate that continues over the place of metaphysics in science and the question of truth when it comes to life-changing developments in science (consider the present debate concerning genetics).

If it is possible for a writer of science fiction to take a metaphysical premise and make it 'work' as a fictional scientific theory, how does Philip K Dick, author of the third time travel novel in this dissertation explain time travel without using science as a narrative device?

*Counter-Clock World* is not a typical time travel novel, in the sense that a character, or characters, builds a machine and travels back and forth along the timeline. In this novel, time itself has begun to move backwards:

Those who were presently being old-born had been the last to die: final mortalities before June of 1986. But, according to Alex Hobart, the reversal of time would continue to move backwards, continually sweeping out a great span; earlier and still earlier deaths would be reversed...everyone else alive would have dwindled back into waiting wombs...assuming of course that Hobart was right. That the phase was not temporary, short in duration, but rather one of the most vast of sidereal processes, occurring every few billion years. [\[55\]](#)

Many questions may arise in the mind of the reader following this passage, however Dick gives little away, preferring to provide the reader clues and hints as to the narrative's purpose. Unlike Martin Amis' brilliantly structured *Time's Arrow*, in which the narrator experiences everything flowing backwards, for example, refuse 'collectors' dump rubbish outside houses every week, there are large gaps in the structure of *Counter Clock World*. Dick focuses completely on the plot, throwing the occasional detail in to flesh out the story. The population has learnt to say 'goodbye' when answering the telephone, and, 'hello' when finishing the call. [\[56\]](#) Food is regurgitated, and this is embarrassing to everyone (as it perhaps would be to be seen using the toilet in real time). [\[57\]](#) Sogum is 'imbibed' which is Dick's own invention of the way food gets into the body in the first place, and this can be a social, shared event (rather like going to a restaurant in real time): "I've just got to get some sogum into me,' she said. 'I'm about to faint. Is there a good sogum palace near here?'" [\[58\]](#) Dick does not go into specific detail about any of these occurrences, choosing instead to incite the imagination of the reader.

Leaving the narrative open to interpretation in this way suggests that Dick is primarily concerned with getting to the larger issues that he wishes to examine in this novel, namely, what happens if time starts to go backwards. As an author, Dick would always begin with the founding question of science fiction 'what if?'

Although his line of questioning changed in connection with his interests throughout his life, his fiction in the main seeks to answer in some form the issues that disturbed or excited him. In *Counter-Clock World* he focuses in particular on the issue of eternity and God, which will be discussed in Part Two of this dissertation. Despite the lack of explicit scientific detail in the passage quoted, there is, nonetheless, an important connection with popular science that should be highlighted here. Dick creates the character of Alex Hobart, presumably a scientist, who predicted a phase of time when everything, down to the sub-atomic level would move backwards. Schimdt intimated that he would regard any sort of time travel as innovative, in his words; it is not based on real scientific theory. However, Stephen Hawking in, *A Brief History of Time*, states that the ‘arrow of time’ (thermodynamics) has been understood for over a century. Hawking goes on to ask:

What would happen if and when the universe stopped expanding and started to contract? Would the thermodynamic arrow reverse and disorder begin to decrease with time?...This would mean that the contracting phase would be like the time reverse of the expanding phase. People in the contracting phase would live their lives backward: they would die before they were born and get younger as the universe contracted. [\[59\]](#)

It should be pointed out that Hawking answers the question he poses here and concludes that the disorder would not decrease if the universe began to contract. The fictional account of this theory in *Counter-Clock World* is identical to Hawking’s explanation to the general reader. The use and style of language is different, Dick uses terms that would perhaps become part of general use in this situation, for example, “old-born”. He describes time in romantic terms, “continually sweeping out a great span” and connects the phenomenon to religion, something that a scientist would avoid doing, “In two thousand years from now, Paul himself would no longer ‘sleep’”. [\[60\]](#) It is interesting to note how the same scientific concept may be explained using a completely different mode of expression.

On the part of the characters in the novel, there is still inevitable confusion about the science of the Hobart Phase. Reflecting the concern of the part the media play in disseminating scientific information to the general population, Dick’s novel introduces several characters that have failed to comprehend just what is occurring in their world. One such person is Officer Tinbane, a policeman. Dick’s mistrust of those in authority is highlighted as this character is shown to be lacking in both judgement and understanding of the difficulties the world faces:

Tinbane said... ‘I thought you had to be already dead and be reborn to get younger.’  
 ‘Christ,’ R.C. said, ‘don’t you understand anti-time at all? ...You’ve got a mental block against facing it.’  
 He felt terrible anger... ‘Maybe anti-time affects you a little if you haven’t died, maybe sort of stabilizing you...’ [\[61\]](#)

Hawking states that he does not know when and if the universe will begin to contract but he believes it to be billions of years from now. Some people that have read his work may believe this. Dick portrays the difficulty in conveying scientific ‘facts’ well in the absent character of Alex Hobart who, it is mentioned several times, had a difficult job to convince the world of the events of June 1986. When the grave of the Anarch Thomas Peak is

discovered, Lotta suggests that those who buried him in 1971 must have had ‘faith’ in Hobart’s predictions, which implies that even then the world was having difficulty coming to terms with the phenomenon.

In comparison with Asimov’s fiction and his non-fiction, Dick endeavours to avoid the use of scientific language. Despite the philosophical nature of the narrative this does not mean that Dick was not interested in science. The phenomenon affecting humanity in this novel, is, after all, based on the laws of thermodynamics. Silverberg’s method combines science and philosophy, although it seems his particular interest in this novel is to satirise the function of society using the device of time travel. Evidently, the approaches are different, but as Part Two will explain, all three novels seek to investigate, if not answer; the immensely provocative questions of the individual’s place in society, and by correlation the nature of our existence in this vast universe.

## Part Two

# History, philosophy and time travel

### Introduction: Who controls time?

The treatment of science by authors of fiction and non-fiction was examined in Part One, focusing in particular on spacetime and travel through time, and it was found that there is a cross-fertilisation of ideas between popular science and science fiction. Part Two considers how the same three novels produce and/or narrate philosophical concepts, using the notion of time travel as a literary tool. What does the author of science fiction achieve by choosing to use time travel rather than the many other science fiction concepts that, by the beginning of the 1950’s had become standard (aliens invading earth, far-flung galaxies, robots, etc)? The three novels have much in common; all were writing within twenty years of each other, by American authors, during the cold war. Yet despite these commonalities, there are many differences in the way philosophy and history is produced in each.

*The End of Eternity* is a novel that, as James Gunn suggests, may have enabled Asimov to revisit his past, and whilst there, he decided that “no amount of tinkering [would] change it for the better.”<sup>[62]</sup> Asimov chooses, Gunn continues, to view humanity’s future as one in which choices could be made, an optimistic outlook that, it could be suggested, reflects the atmosphere of America in the 1950s when the Second World War had been won, and the consequences not yet realised. The novel also seeks to explore the concept of God, not religion, as the protagonist of infinity, not eternity. It is disappointing for those of us interested in the possibility of time travel, to see the potential consequences that *The End of Eternity* warns against. However, the consequences can also be regarded as a warning for the present. In *Beyond the Waste Land*, Raymond Olderman uses Kurt Vonnegut’s message from *Slaughterhouse Five or The Children’s Crusade*: “Man, according to Vonnegut, makes a waste land of his life by looking for some meaningful absolute purpose instead of simply living.”<sup>[63]</sup> Although published twelve years before *Slaughterhouse Five*, at the end of Asimov’s novel, ‘simply living’, is what the hero and heroine intend to do.

In *Terminal Identity*, Scott Bukatman suggests that the ‘metaphysical dilemma’ in Philip K Dick’s work

may be regarded as a model of the failure of the individual to exist successfully alongside the physical and technological changes (in particular with reference to reproduction) that the world has brought upon society.<sup>[64]</sup> In *Counter-Clock World*, the dilemma is evident in the narrative, as Dick portrays a set of individuals struggling to come to terms with a natural phenomenon. The effects of the phenomenon on the normal human life cycle are devastating and affect, amongst other things, the processes of reproduction. People are re-produced, after they have died, and books are unproduced in order to satisfy the change in the direction of time. The characters in the novel work hard to adjust to the process of ‘undying’, however there is in the narrative a sense of hopelessness and despair that is not resolved by the ending. This section of the dissertation explores ideas of human existence, and of free will in the novel, and examines elements of classic dystopian fiction evident in the narrative.

On Saturday 6<sup>th</sup> September 2003, the travel section of *The Times* newspaper ran a feature on tourists flocking to sites of human disaster, in particular the area known as ‘Ground Zero’ in New York. The article states:

Morbid though it may be, Ground Zero is destined to become one of New York’s, and the world’s leading tourist destinations – the example par excellence of what is sometimes called “The Tourism of Tragedy”, or simply, “Terror Tourism”.<sup>[65]</sup>

The concept of ‘terror tourism is not new, and as this article highlights, those visiting graves from two world wars, for example, may be regarded as pilgrims rather than tourists. However, Silverberg’s novel brings to the fore the side of this ‘industry’ that one is reluctant to consider, that is, someone, or some organisation, is making financial gain from the horrors that humans endured since history began. In a film made for television, suitably titled *Thrill Seekers*, (Carlton, 1999) tourist from the future can travel into the past, to the moment of disaster, for example, an aeroplane crash or the sinking of the Titanic. The particular tourist that provides the focus for the film is presented visually as a type of ‘grim reaper’, dressed in black, with thin pointed features and a shifty expression. This is an expensive form of entertainment, as it is in Silverberg’s novel, and the risks are high. Although there is a sense of dark humour in the novel, it does, nonetheless, put humanity’s disregard for the purity of history into perspective. In ‘Robert Silverberg: An overview’, Russell Letson looks beyond what he terms as Silverberg’s ‘surface themes’ to the anxieties that mould his fiction. He states: “The shape of his fiction is governed more by the exposition and resolution of anxiety than by the working out of science fictional processes.”<sup>[66]</sup> Whilst there is no suggestion of resolution in *Up the Line*, this section considers the use of the time paradox, in the way that Letson suggests, as a surface theme, leading the reader into deeper concerns. Consequently the final section of Part Two considers the connection between the individual and the organisation in Silverberg’s *Up the Line*, showing the former to be the selfish idealist, and the latter to be the responsible controlling body. It is suggested, however, that the controlling forces also stand to gain the most, in both terms of power and economics, with reference to the tourist industry in the novel, and that, in a similar way to *Counter-Clock World*, the individual has no control over their own destiny.

## The sci-detective-fi-story: Who murdered Eternity? in *The End of Eternity*

In the first chapter of *To Write Like a Woman: Essays in Feminism and Science Fiction*, Joanna Russ suggests that science fiction is concerned with finding the answers to, or knowing about, something.<sup>[67]</sup> Whilst the detective story seeks to find ways of getting to the answer we already know, science fiction challenges our very existence by asking: what is existence? This definition of science fiction, at its most basic level, is at the core of every science fiction story produced. Asimov addresses this question in *The End of Eternity* by creating the character of a man whose destiny, it would appear, is to answer this question for all. Given Russ's definition, this novel is clearly science fiction, however, there are clues in the narrative that would suggest Asimov 'borrowing' from conventions within the genre of detective fiction. A reading of the novel as both science and detective fiction produces a quite unique vision of history and religion.

The metaphysical concepts of time and eternity have become by-products of man's own inventions in the story and, accordingly, are always referred to with capital letters. Eternity now occupies a human rather than philosophical space and Time is a concept that is completely in the control of the Eternals, those who live and work in the organisation known as Eternity. The novel begins with much disruption; the Eternals now write and rewrite the destiny of humanity (although not before the invention of the Temporal Field in the 24<sup>th</sup> Century) and this is carried using the premise the 'Minimum Necessary Change' in reality required to produce the 'Maximum Desired Response'.<sup>[68]</sup> Whole centuries are altered, wiping from existence millions of people in the Eternals attempts to stop a war, a famine, or, more importantly space travel, (which has been deemed likely to obliterate existence altogether) from occurring, in the name of Humanity. On an individual level, Harlan is consumed by his own disruption of Eternity, that of manipulating Noys' reality to avoid her being erased from time.<sup>[69]</sup> This is a crime of the worst kind, one that holds dire consequences for Harlan. Despite Harlan being specially chosen and highly trained as an Eternal, he hides a secret that embarrasses him; he is fascinated by the centuries before the Temporal Field was invented, known as the 'primitive centuries'.<sup>[70]</sup>

The above outline could also be a classic beginning to a detective story. Harlan has all the right attributes for the role of detective in this plot. In a manner similar to Sam Spade in *The Maltese Falcon*,<sup>[71]</sup> Harlan falls for the femme fatale, whose loyalty is in question. He has a shady secret, in the form of his interest in the primitive centuries. Although he works for the primary organisation he believes that he is capable of bringing about its destruction.<sup>[72]</sup> The plot is tied up tightly, rather like interwoven threads, and Asimov produces many paradoxes that arise out of the Eternals attempt to travel in, and control time. The complicated nature of time travel and the paradoxes that can occur is reflected in the method of narration. Asimov uses flashbacks to tell the story, beginning in the middle of the tale and then going back to the start of Harlan's story. However, as it is in the case of the classic detective story, the beginning is often complicated, and it is the detective's occupation throughout to provide the key to the disentanglement in order to produce a clear, if not always happy, ending. For example, Dorothy L Sayers' *Busman's Honeymoon* opens with several events, seemingly unconnected, but all contributing towards a general sense of confusion: the secret (from the press, at least) wedding, a mix-up at the

honeymoon cottage, all the chimneys inoperative, a rude and un-cooperative housekeeper, and a dead body in the cellar. The novel closes with the execution of the murderer, and the realisation by the two main characters that despite their individualities they are destined to be together:

“It’s damnable for you too. I’m sorry. I’d forgotten. That sounds idiotic. But I’ve always been alone.”

“Yes of course. I’m like that too. I like to crawl away and hide in a corner.”

“Well,” he said, with a transitory gleam of himself, “you’re my corner and I’ve come to hide.”

“Yes, my dearest.”<sup>[73]</sup>

Lord Peter Wimsey and his new bride, Harriet, are the joint protagonists in unravelling all the threads of this story until, as this passage illustrates, the outcome is clear and uncomplicated. Asimov achieves the same effect in *The End of Eternity* with Harlan and Noys, showing them together, at the end of the novel with the future ahead of them. At this moment, the characters have returned from the now fictional, futuristic world of Eternity, to the world that the reader inhabits. It may be suggested that Asimov places his characters back in the ‘real’ world because that is where he believes that they ultimately belong:

“This is Earth. Not the eternal and only home of mankind, but only a starting point of an infinite adventure”...He turned to look at her, and she was smiling at him. It was Noys, as she had been, and his own heart beating as it had used to.<sup>[74]</sup>

In this detective story then, following the tradition of the genre it is the detective (Harlan) himself that commits the ‘perfect murder’ of Eternity. In a similar way to *Busman’s Honeymoon*, in which Peter Wimsey feels a sense of responsibility towards the hanged murderer but is able to begin a new life with Harriet, Harlan is given the chance of a new life, one that the author suggests, is the ‘correct’ one for mankind to live.

James Gunn states that *The End of Eternity* is “about reality manipulation”<sup>[75]</sup> and, as a basic premise for an excellent science fiction story, he is right. However, I suggest that reality manipulation, using time travel between centuries, is a tool by which Asimov expresses his deepest concerns about the role of humans in the universe at large. Gunn suggests that the theme of the novel relates significantly to ‘intelligent choice’. He cites several examples of points at which the choice appears to be made before the person is aware of making it.<sup>[76]</sup> This is certainly true of the plot, but whereas Gunn implies that this means “humanity cannot improve its lot by rational choice”, I believe that, by “murdering Eternity”, Harlan, representing humankind, has removed the capacity to know and therefore predict and change the future. Granted, there is an implicit warning in the narrative against meddling in the past but this is not as significant as the change from the probability calculations in Eternity to the possibilities of infinity. Eternity has always been regarded as a religious concept, somewhere to be inhabited after death. Infinity on the other hand, is a scientific notion, and the distinction between the two is marked by Asimov’s insistence that humankind turn away from the psychopathological nature of Eternity. As created by humans, this is an Eternity that is wrong somehow, and it is for this reason that I do not see Asimov’s distinction as anti-religious. In *Many Futures, Many Worlds*, J. Norman King indicates a ‘tension’ between what he terms as “familiarity, security, and certainty on the one hand; [and] exploration, new growth and risk on

the other and suggests that *The End of Eternity* is an excellent example of this.<sup>[77]</sup> Whilst this is correct, I suggest that there is a sense in the narrative that, by engineering Eternity, humans contribute to their own downfall, rather like Eve eating the forbidden fruit. Perhaps Asimov wished to explore the possibility that Eternity is not to be engineered but to be enjoyed in the hereafter.

The whole purpose for the existence of Eternity, as an organisation, is to prevent any disasters occurring. This, Noys explains towards the end of the novel, has damaged the spirit of adventure and uncertainty that humans rely on to make life worth living. Space travel is the main problem for the Eternals, there are several examples of reality changes in which the victim is the development of space travel: "Finally, some computer had worked out the Reality Change necessary to decrease addiction to a safe level, and found that, as a side-effect, electro-gravitic space travel must suffer."<sup>[78]</sup> However, it is intimated at the end of the novel that humankind's downfall has been to curb the journey of humans into infinity where they will be able to explore, develop and continue the evolution of the human race. Perhaps it is too extreme to suggest that Asimov himself believed the philosophy he writes into the final pages of *The End of Eternity*. However, it is a perspective with which many would agree, "It is in meeting the great tests that mankind can most successfully rise to great heights. Out of danger and restless insecurity comes the force that pushes mankind to newer and loftier conquests."<sup>[79]</sup> Published two years before the first satellite was sent into orbit, this novel reflects the excitement of the age in which space travel finally became a reality for humans, and the dangers of letting the opportunity be wasted.

### **Avoiding the certainty: Undying in *Counter-Clock World***

If a person dies, and some time 'later' his or her body biologically reconstitutes, and life begins again, only moving in the direction of the womb, what then, may he or she remember about any possible existence after death? Furthermore, what effect does this phenomenon have on the concept of existence?

In a move away from the explicitly paranoid nature of his more typical fiction, Philip K. Dick explores the possibility of avoiding death in *Counter-Clock World*. A consequence of time moving backwards is that those who have died will be reborn, whilst those who had not died at the beginning of the Hobart Phase, will never experience death in the same way, but will, along with everyone else, return to the womb and beyond. This story gives Dick the opportunity to raise several questions, in particular: what is God, and what does eternity mean?

In true Dick style the reader is left to decide the answers to these questions for themselves. However, if we apply Joanna Russ's definition of science fiction again here, as a way of knowing about existence, Dick's novel gives an insight into the way one might regard existence if the process of dying was reversed. Unlike Asimov's model of Eternity as a man-made organisation and infinity as the hope filled alternative, Dick produces a model that keeps eternity's mystery and casts a different perspective on infinity. Each chapter begins with a quotation from the works of notable philosophers, for example, Thomas Aquinas. Dick uses many quotations from Erigena (which may be a different spelling of the name of philosopher Eriugena), and Boethius, who both attempted to reconcile nature and science with God and religious beliefs.<sup>[80]</sup> Present throughout the novel is the character, Father Faine, who, from time to time, makes reference to the bible or to religious doctrine regarding the unburial process. In Chapter 8 the body of the 'Anarch Peak', a religious figure who is due to return to life,

has already been exhumed and the employees of The Flask of Hermes Vitarium are anxiously waiting to see what will happen next. It is during this chapter that Dick takes the opportunity to have the characters openly discuss the possibility of the after-life or eternity. Sebastian, the owner of the Vitarium, who has been reborn, states that he cannot remember anything, which would appear to prove that there is no eternity: "I had no awareness after death; I went from the hospital to the coffin and I woke up in the coffin."<sup>[81]</sup> However, he does have a vision-like dream that Father Faine suggests is his "Day of Wrath" and the salesperson, R C Buckley calls "Day of Judgement".<sup>[82]</sup> The expectation is that the Anarch Peak, being a religious icon, will be able to remember more, "Maybe he'll say something profound", is the sentiment expressed by those gathered at the Vitarium, hoping that he will provide more answers than Sebastian can.<sup>[83]</sup> When he is reborn, he does claim to remember seeing God but there remains an ambiguity both in the narrative and the characters' reactions. There is an outward expression by the characters of the desire to know for definite about life after death, yet Sebastian's primary concern is that the Anarch Peak is worth a lot of money to him: "And valuable, Sebastian said to himself...Let's keep first things first; the theology and the poetry come in second."<sup>[84]</sup> This is a subtle but effective examination of the preoccupations of the human mind. The characters in this chapter are not faced with death in the same way, and yet they remain preoccupied with the question of God and eternity. None of them has thought to take the next step and ask, 'if God is there when we die, what happens to him when we come back to life?' In this way, Dick points to the futile matters that we become engaged with, failing to look beyond the obvious, a fact that bothered him throughout his life. Added to that, the reason that the Anarch Peak has been taken to the Vitarium is purely economical.

The way in which the Hobart Phase is explained suggests that humankind is now locked into a time paradox of mammoth proportions. In a way that is entirely opposite to *The End of Eternity*, infinity takes on the nature of eternity as the same cycle repeats itself over again. When time flows forward again, the same people will be born and then, when it begins to flow backwards, the process will repeat itself. This concept is not explicit in the plot but rather is left to the reader to extrapolate. It is a disturbing and pessimistic view of the future of humankind. In Chapter Seventeen the narrative indicates the issue of freedom of choice, when Sebastian 'chooses' to save his wife instead of the Anarch. He is told that had he saved the Anarch, he would have been the "saviour of mankind":

'You've changed human history, you know,' Roberts said. 'Or rather *you've failed to change it*. You had your chance and now it's gone. You could have been remembered forever...*And an entirely new basis for religious belief would have been established*. Certitude would have replaced mere faith, and a totally new body of scriptures would have emerged.'<sup>[85]</sup>

Here, the narrative clarifies the futility of trying to change history. The central theme, which is in part suggested by the quotations at the start of the chapters, and the ramblings of the Anarch Peak, is that we are all part of everything that is matter or substance. Whereas in *The End of Eternity* Asimov suggests a possibility for humans to make choices, Dick negates that in this novel.

This dystopian vision does not have the final clarity or optimism of Asimov's novel. Published in 1967,

the pessimistic view of life in *Counter-Clock World* is a reflection of the cultural context in which it was written. In *American Science Fiction and The Cold War*, David Seed highlights a talk that Dick gave in which he said “the collapse of belief in progress had led to an unavoidable preoccupation with doom.”<sup>[86]</sup> As Seed rightly points out, it is the discovery that governmental institutions lead conspiracies that contributes to the sense of paranoia in Dick’s work.<sup>[87]</sup> However, whilst conspiracy and paranoia do figure in *Counter-Clock World*, the novel stands slightly adjacent to the norm in that behind the paranoia lies the added hopelessness of existence without free-will, which is a concept that, as humans, we hold most sacred.

At the time of writing, the fact that most Americans, and indeed the rest of the western world at least, believed that the world was going to end, via an extremely brief nuclear war, must almost certainly have contributed to the sense of despair in the narrative. Given the scenario of a full-scale nuclear war, the end of the world would be brought about by a relatively small number of people in government positions. This removes any sense of power the individual may have regarding their future, and Dick reflects this fear in *Counter-Clock World*. The information received beforehand by the general public in such a situation (as is the case when any country goes to war) is not always clear, leading to inevitable confusion amongst the population. In this novel, the reader may assume that because the world is undergoing a scientific, rather than government-led, phenomenon, everyone has the same information. However, Dick is careful to ensure that the disinformation network that operates in times of crisis is indicated in the novel. In Part One of this dissertation (page 20), I highlighted an exchange between Officer Tinbane and R C Buckley, the Vitarium’s salesperson, that showed a lack of understanding of what was happening to the world. Furthermore, the conspiracy to kill the Anarch Peak comes from legitimate organisations. Dick centres the action in the novel on the library, in real time regarded as a provider of information, but in this novel it is a place to be feared, somewhere that, quite literally, wipes out all that humans have created. The library then becomes the controlling power that can be found in most dystopian fictions but, unlike the standard, it is an uncontrollable singularity in spacetime that has provided the impetus for the library to become the controlling force.

In *Fictions of Power*, Lee Horsley states: “The dystopian writer generally imagines a world enslaved by a powerful elite”.<sup>[88]</sup> Rather than a world ‘enslaved’ by technological advances or autocratic governments, Dick has imagined a world imprisoned by a time paradox, but the society that emerges from this ‘natural’ phenomenon has the same dystopian features as many of the man-made horrors that feature in Dick’s novels. Horsley examines three key oppositions, which, she states, “[underpin] the standard dystopian satire...between man and machine, individual and mass, energy and entropy.”<sup>[89]</sup> The struggle between ‘individual and mass’ is expressed in the frantic but futile efforts of Sebastian to save both Lotta and the Anarch Peak from their killers. Whilst entropy is usually regarded as a state of disorder, Horsley describes Yevgeny Zamyatin’s metaphor of entropy as a “system so oppressively ordered that all energising and differentiating signs of the human have disappeared.”<sup>[90]</sup> The image of entropy in *Counter-Clock World* can be seen as the return of all matter (or energy) to its original state of disorder. However, during this process the library has become the space in which a controlling order is recreated, through the eradication of creativity and therefore, individuality. Finally, Dick

displaces the machine, in opposition to man, for a far more terrifying prospect, which no machine or bureaucracy can manipulate. In creating a story about a 'natural' process Dick foregrounds the real fear at the heart of this novel, that in this reality at least, humans have no control, no free will and that resistance is futile against the power of the universe.

## History as fiction: *Up the Line*

All those people I had never known and would never be, whose blood and lymph and genes I carry- I wanted to know them. I couldn't bear the thought of being separated from my own past. I hungered to drag my past about with me like a hump on my back, dipping into it when the dry seasons came.<sup>[91]</sup>

In this passage, part of the first paragraph of *Up the Line*, Silverberg provides the protagonist, Judson Daniel Elliot III, with the motivation for travelling into the past. To the reader however, who knows and perhaps accepts that this is not possible, Silverberg outlines a character that is selfish and idealistic, setting the tone for what has been described as a "comic and satirical time travel novel".<sup>[92]</sup> Elliott, who becomes a Time Courier, taking 'tourists' back in time to witness events in history, narrates the story. This is very much an economic activity, with much of the population unable to afford this form of entertainment. The types of trips carried out by the Time Service are to sites of terror, disaster, or human suffering, "Like most time-tourists, they particularly loved the riots, insurrections, sieges, massacres, invasions, and fires."<sup>[93]</sup> A part of the Time Service, the Time Patrol monitor the tourist trade in an attempt to ensure that no paradoxes occur, and they have the power to repair the timeline if necessary. The penalties for deliberately or accidentally tampering with the timeline are high, usually death (or being wiped from existence).

From the beginning of the novel there is a deliberate distinction between the Time Couriers and the Time Patrol, which may be symbolic of the division between the individual and the legitimate government that operated at the time of this novel's conception. Elliott and his Time Courier colleagues engage in drug abuse, and the frequent sexual encounters are described in detail in the narrative. In contrast, Lieutenant Bruce Sanderson of the Time Patrol is described quite differently:

He was the tallest man I had ever seen, with the widest shoulders and the squarest jaw...He took a spread-legged stance, back to the wall, ready for trouble. His uniform was grey. His hair was red and cut very short. His eyes were a soulless blue.<sup>[94]</sup>

He speaks of sanctity, responsibility, and humanity. Whereas Elliott has selfish and irrational reasons for wanting to time travel, the Lieutenant is shown to be honourable and trustworthy. It may be suggested that, in the same way as *Counter-Clock World*, Silverberg is keen to comment upon the insecurity of the individual in American society. Where Dick commented that individuals could play no part in the shaping of their future, thereby attacking the government system as it stood in the 1960s, Silverberg presents the concept that individuals cannot lay claim to their own past, or heritage. The juxtaposition between the Time Patrol's requirement to keep 'history' pure and unaffected by tourism and the casual disregard on the part of the tourist for the terrible events

that have occurred in human history may be suggestive of the way in which the tourists treat history: a fictional narrative, or a type of feature film. It is naïve to suggest that Silverberg himself would regard humanity's image of history as such, nonetheless, the novel raises serious questions about the nature and production of history.

If science fiction is read as a commentary of present day culture, then the end result of *Counter-Clock World* and *Up the Line* is the same: the individual is powerless. The protagonist in the former, Sebastian, is 'punished' by the death of his wife. However, the Time Patrol erases Elliott from existence for his 'crime' of creating several time paradoxes. If the distinction between Elliott and the Time Patrol is symbolic of the distinction in contemporary terms of individual and government, the question may be asked: if power and control have been removed from the individual, why is the individual then punished for transgressing?

A closer inspection of the narrative illustrates that Elliott is not the exception to the rule in the future society of *Up the Line*. Generally, other characters in the novel appear to be driven by sexual urges and selfish motives (except, it would seem, for those in authority). Sam the Guru cannot walk past a woman without making some attempt at sexual contact: "As she crossed our path Sam gave her a lusty tweaking of the nipples...He goosed one of the robots too."<sup>[95]</sup> The tourists on Elliott's trips up the line have an open attitude towards sexual relations that reflects a similar movement that occurred in some parts of American society in the 1960s: "Papa Gostaman also approved of his son Bilbo's affair with Miss Pistil, which also became a nuisance, since we wasted a terrific amount of time waiting for them to finish their current copulations."<sup>[96]</sup> Elliott cannot control his lust for Pulcheria, who exists 'up the line' (in the past). He does maintain that with Pulcheria, he feels not just lust, but love:

For me, Pulcheria was the embodiment of beauty and grace, and her easy surrender to me made me an emperor more mighty than Alexius, and neither the spurting of my jet nor the quiver of her response mattered a tenth as much as the fact that she and I had come together in trust, in faith, in shared desire, in-love.<sup>[97]</sup>

Silverberg creates a scapegoat in the character of Elliott, an unfortunate casualty of the predicament that faces society as a whole. By choosing to have his protagonist, however shallow and self-centred he may be, removed from existence for committing the crime of being 'in love', Silverberg highlights the plight of the individual unable to control his destiny even in the most basic of matters, sex and love. Edgar Chapman states that, as readers, "we do not care about [Elliott's] fate."<sup>[98]</sup> He continues by suggesting that Elliott's "lack of moral seriousness leads to his justified removal from the maze of history."<sup>[99]</sup> While there is little doubt that the character of Elliott displays dubious morals, there is no evidence to suggest that he is, as I have already stated, unique in the future society that Silverberg imagines or in the society that we occupy at present. If everyone who lacks moral seriousness were removed from history, the world would be a very quiet place indeed. Chapman maintains: "The protagonist's chief fault is his refusal to confront moral questions seriously."<sup>[100]</sup> However, none of the characters in this novel show a great amount of moral reasoning, making Elliott's punishment less justified than it may appear at first. I agree that the reader has little sympathy for Elliott, but I believe that rather than satirising the treatment of history by the unique individual, Silverberg is, instead, questioning the condition of society. This, he bases on the value of history placed upon society by the collective rather than the individual.

Olderman proposes that the “theme of the isolated self... is usually treated with comparative lightness by the writer in the sixties.”<sup>[101]</sup> This is unquestionably true of *Up the Line* given the graphic descriptions of sex, the attempts by Elliott to trick the Time Patrol, and the way in which the novel ends. The latter is an unusual and interesting way for a narrative to finish, that is, mid-sentence, and for the more questioning reader, creates another interesting paradox: if the narrator is erased from history, how has he been able to narrate this story? Elliott has frequent sexual contact with others, and his elongated family name ‘Judson Daniel Elliott III’ suggests a large extended family, and yet there are several instances in the novel where he is isolated from his ‘now-time’, his friends and colleagues, his tourist group, or the Time Patrol. It is interesting to note that through the time paradoxes in the narrative, Elliott duplicates himself, an act, which ironically only adds to his isolation, culminating in the image of him recording his story on his own, waiting to be obliterated from history. This is a further example of Silverberg’s representation of the isolated individual in contemporary society.

The struggle of the individual features heavily in all three novels discussed in this part of the dissertation. Where one man has the power to change human existence for the better in *The End of Eternity*, another appears to have a choice, but in reality discovers that no-one has the luxury of free-will, in *Counter-Clock World*. In *Up the Line*, one person is made a scapegoat for humanity’s failures while the controlling forces reap the benefits. The difference in tone between *The End of Eternity* and the following novels, marks the change in atmosphere in America during the 1950s and 1960s. The euphoria and optimism that followed the successful outcome of the World War Two, soon degenerates into paranoia and distrust. The way in which the person ‘on the street’ felt powerless to make choices is reflected in detail in both later novels.

The use of time travel as a focus for authors provides a unique mode in which to reflect on their anxieties. Asimov discovers that the past is not worth messing with, and that space travel is the ‘best’ sort of future for humankind. Dick voices his concerns over the isolation of the individual in a society that keeps throwing new and challenging demands upon them. Silverberg raises important questions about history, to whom it ‘belongs’, and its form – is it real or is it fiction? However, one conclusion that all three novels chosen for this dissertation arrive at is: time travel is not necessarily a good thing, it is not going to answer humanity’s problems, in fact, it creates more difficulties than it solves. This is perhaps the reluctant conclusion that the scientists mentioned in Part One have arrived at.

## Conclusion: “All good things...”

In the final two episodes of the long running series *Star Trek: The Next Generation*, Captain Jean-Luc Picard experiences a cycle of time travel incidents in which he jumps between the present, seven years into his past, and twenty-five years into his future.<sup>[102]</sup> This device gave the episode writers the unique ability to provide the viewers with a summation of the previous seven seasons of this popular show and also a glimpse of how the much-loved characters’ lives may turn out. In other words, the writers were able to ‘tie up the loose ends’ in a

way befitting a science fiction show.

To conclude this dissertation, I will bring together the new perspectives on time travel narratives that have been discussed. In addition, I will endeavour to look forward to the future, with suggestions for further research in this exciting and challenging area.

The introduction highlights the propagation of time travel narratives from H G Wells' inspired beginnings in novel form, through pulp fiction, towards television and film. Due to the brevity of this paper, there are undoubtedly many excellent examples of the time travel narrative in visual media that have not been discussed, for example, the film *La Jetée* (Argos, 1962), which inspired the later *Twelve Monkeys* (Universal Pictures, 1995), and in television, *Quantum Leap* (Universal Pictures, 1989-1993), a successful US drama series. It is impossible to acknowledge all the contributions to the sub-genre of time travel narratives, nevertheless, it is clear that they form a significant part of the science fiction genre. Whilst the novels chosen were taken from a relatively short span of twenty years, critics of the genre regard the authors, Asimov, Silverberg, and Dick, to be major contributors of fiction and non-fiction.

Part One is concerned with the place of 'science' in science fiction. Using McHale's theory in *Constructing Postmodernism*, in which he suggests a 'trafficking of ideas' between cyberpunk science fiction and mainstream postmodern fiction, a new way of reading the time travel narratives in science fiction is posited where popular science writing and fiction can become interconnected, each having an influence on the other. Asimov's *Guide to Science* is examined, in terms of the style and tone of his writing, compared to his fiction, in this case, *End of Eternity*. In *Up the Line*, Silverberg takes a much less factual approach to science, preferring to mix it with philosophy, perhaps avoiding the difficulties associated with using science theory in futuristic terms. There is little explicit science in *Counter-Clock World* and yet this is the only novel of the three in which humans have not created the movement in time themselves. The 'Hobart Phase' is a purely natural phenomenon, and yet, despite its fictional status, has roots in the laws of thermodynamics.

The three novels approach the nature of scientific theory in very different ways, which gives a rounded view of the way popular science theories find a place in science fiction. However, some fans of the genre may ask: is it important to have 'actual' science in the fiction? Does it matter if there are problems with, for example, the mathematical equations? The answer to these and other questions like them, are of course, no, it doesn't matter. The new perspective on time travel narratives given in this dissertation is not intended to prove that science fiction is inherently 'scientific', but rather to give an example of the cross-fertilization between culture (of which popular science is a part) and literature. If this example is accepted, then the importance of such interconnections may be acknowledged, rather than dismissed. As stated at the beginning of Part One, it is not the aim of this dissertation to applaud the literary nature of the genre, as some critics like to do, but to offer a different way of reading the fiction, in order to see with clarity the reflections in the narrative, of the world as it was at the time of writing.

It is the very nature of science, and the discoveries that result from scientific progress, that necessitate the introduction of philosophical thought. A recent example is the advances made in genetics, which have brought with them considerable philosophical debate. A similar debate can be found within the narrative of all three novels, and, in Asimov's introduction to his *Guide to Science*. In Part One, the metaphysical aspect of scientific

thought was explored in relation to *Up the Line*. Time travel cannot be separated from the difficult physical and philosophical paradoxes it produces, nonetheless, Silverberg in particular is successful in the way he seeks to draw a line between science and philosophy, satirising both disciplines as he does so. Part Two further explores the philosophical aspect of time travel, and finds that each novel represents the individual by various means. Asimov produces an unlikely hero/protagonist who despatches the criminal 'Eternity' and returns time to the way it should be. This perhaps indicates the mood of society in the 1950s, an optimism that was short-lived. Dick reflects the insecurity of the individual in society in the 1960s by suggesting that free will and choice do not exist for humans. *Counter-Clock World* is, despite its scientific premise, a bleak and pessimistic view of the world that Dick occupied. Silverberg chooses instead to satirise society, picking a scapegoat to be punished for humankind's immorality. In all three the distinction between the individual and the organisation is clear, it is only in the earlier published *The End of Eternity*, where the individual triumphs.

This dissertation promised a *new* perspective on time travel narratives. In this, the second millennium, some critics have suggested that everything has been said once too often, and it is perhaps rather ambitious to guarantee that anything is 'new'. This paper has relied heavily on existing theories (for example, Schmidt, McHale, Gillies) in order to look specifically at the use of time travel in science fiction. However, in precisely the same way that all scientific theory is created, a new perspective is only formed when based upon very sound models.

There are ways in which this research may be developed and perhaps used in a more contemporary context. I mentioned in the introduction, "sending people backwards and forwards in time is no longer the box office grossing guarantee it once was." (Page 4) It would be interesting to examine how the cross-fertilization between popular science and science fiction is affecting the narratives produced today, in novel, television and film. Also, regarding the aforementioned genetics debate, what are the philosophical implications of our changing culture upon these media?

It may well be discovered that the time travel narrative reached its peak in the 1950s and 1960s. Then again, spare a thought for those serious scientists, funded by large organisations, who may well be half way down the road to discovering Eternity.

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