The Temporalities of Crisis:

An exploration of mid twentieth-century

time travel fiction's allegorical mode

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And yet, and yet ... Denying temporal succession, denying the self, denying the astronomical universe, are apparent desperations and secret consolations. Our destiny [...] is not frightful by being unreal; it is frightful because it is irreversible and iron-clad.

- Borges ‘A New Refutation of Time’
  
  Trans. James E. Irby

The future is inevitable and exact, but it may not happen. God lies in wait in the intervals.

- Borges ‘The Creation and P.H. Gosse’
  
  Trans. Eliot Weinberger
Abstract

The purpose of this thesis is to examine the socio-cultural function of mid-twentieth-century time travel narratives—that is, their role in expressing and engaging with key moments of socio-historical crisis. Focusing on the onset of World War Two and the subsequent atomic age, I argue that such moments, and their anxieties, involve time-centric elements. For example, there is an inherent sense of temporality in the fear that the past is doomed to repeat itself, or in the eschatological anxiety associated with the birth of the nuclear age. SF in the ’40s and ’50s has long been considered “more than just a shared fantasy game” and instead is seen as “a collective research project” on technological and social change (Middleton and Woods 235). However, the time travel sub-genre is often excluded from such assessments, and particularly paradox-heavy and philosophically dense narratives, which are considered by some to be “ideologically neutral” (Burling 8).

The key premise of this study is that time travel fiction, with its generic depiction of chronological manipulation, has an ideological function in that it often allegorically reproduced the ‘temporalities of crisis’—the temporal elements of periods of socio-cultural upheaval. Also, certain cultural and literary phenomena, including propaganda and apocalyptic fictions, work to temper the anxieties resultant from such time-centric crises. Similarly temporal in nature, these ‘modes of alleviation’ are also simulated via narrative depictions of time travel. Throughout this dissertation I delineate the allegorical modes of American time travel narratives produced during the 1930s–1950s. Through consideration of these modes, new insight can be gained into both the utility of the time-travel sub-genre, and the mid twentieth-century’s responses to the period’s most prominent crises.
Declaration

This is to certify that:

i. this thesis comprises only my original work towards the PhD,

ii. due acknowledgement has been made in the text to all other material used,

iii. the thesis is less than 100,000 words in length, exclusive of tables, maps, bibliographies, and appendices.

Alexander Gray
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Introduction

In the 1940s, science fiction’s relationship with the future was altered. Rather than fantastical speculation regarding a far future that might never be, some fictions became a reflection of near-present reality. Robert Heinlein’s pre-Pearl Harbor short stories ‘Blowups Happen’ (1940) and ‘Solution Unsatisfactory’ (1941) involved the consequences of atomic weaponry. At the same time the Manhattan Project was in its nascent stages, with Roosevelt’s official authorisation for the Project coming in January of 1942. In March 1944 Astounding Science Fiction published ‘Deadline’ by Cleve Cartmill. This story prompted an FBI investigation into Cartmill, Astounding editor John W. Campbell, Heinlein, and Isaac Asimov because of its correlation with the secret research being conducted at Los Alamos (Clute; Silverberg “Reflections”). As such, just one year before the Trinity Test, the first detonation of an atomic bomb, science fiction (SF) had shifted from anticipating the future to reflecting the (top secret) present. This reduction of the gap between science-fiction speculation and reality is an example of the ‘temporality’ of this tumultuous period.

As it is central to my argument, it is important that I fully delineate the term ‘temporality’. While traditionally referring to the progression of past, present, and future, I use the term throughout the thesis in a particular way: to refer to socially prompted questions or preoccupations with aspects of time. These aspects, in particular, comprise of three paradigmatic concerns that surround philosophical enquiry into the nature of time: change, causation, and possibility (Le Poidevin and MacBeath 1). Change, for example, is central to philosophical debates around the ‘truth’ of tensed statements—that is, statements “that reflect a given temporal perspective [using such terms] as ‘past’, ‘present’, ‘future’, ‘now’, ‘then’, ‘yesterday’, ‘next year’, ‘the month after next’ ” (Le Poidevin and MacBeath 3). Whether such statements can be considered ‘real’ is a matter, according to Le Poidevin and MacBeath, of:

... ontological differences between the past and the future: past individuals are as real presently existing ones, even though past individuals don’t, obviously, exist in the present. In contrast, future individuals, i.e. those yet unborn, cannot be thought of as
real. In addition, statements about the past can be thought to have a determinate truth-value; not so statements about the future. (4)

Such features of change—of the reality of the past, the unreality of the future, and their separation from the present—can be questioned or altered, and it such disruptions that I refer to by employing the term ‘temporality’. As such, the FBI investigation into *Astounding* and its writers is a ‘temporality’ of the nascent nuclear age, as it problematises the notion of an unknowable future that does not “exist in the present” (4). As I shall argue in chapter three of this thesis, the future had, at that point, seemed to manifest in the present. Along with alterations to the notion of change, I also use ‘temporality’ to describe disturbances in that nature of causation and possibility. Lucas views time as “a passage from the possible to the necessary” (262). That is, a future event is deemed possible until a cause makes it a logical necessity. Therefore, at moments when such relationships between cause and effect and possibility and necessity are placed in question, I deploy the term ‘temporality’. Bergmann describes just such a questioning of causation and possibility when he describes the way technology alters the present’s relationship with the future:

... technology ... [is] oriented not towards the present future but toward future presents from which they draw causal or stochastic connections to the present, seen in this perspective as the past of the future present. (91)

In other words, technological developments like the bomb can cause the future to become the dominant, determinant part of the system; while a future usually has many possible elements, which will be causally created by coming events, technology can cause this process to break down: “the future is ‘de-futurized’, that is, deprived of its openness and uncertainty” (Bergmann 91). In this thesis, I would describe this impact of technology as a temporality. As I shall argue in chapter four, the bomb similarly disrupted the idea of the possibility of the future, which became set—necessary instead of possible—and marked with destructive connotations. Such changes are temporalities: socially emergent symptoms or features that are defined, marked, or exacerbated by a (usually significant) refiguring of dominant notions of change, causation or possibility.

Partnering temporality in the title of my thesis, and also used throughout, is ‘crisis’. I use this term to denote a period of marked social and historical change
and turmoil, such as the development, testing, and initial use of the nuclear bomb. As Bousquet argues, Hiroshima can be considered a social rupture “that suddenly transformed Western historical consciousness” (740). Such transformations, whether punctuated by an event or drawn out over a number of years, are what I will refer to as crises. Along with the first public demonstration of nuclear weapons, I consider the war that preceded Hiroshima, and the Cold War that followed, crises in a similar sense: less immediate, but still historical events that radically altered the way Western culture viewed itself and the world. What is under-acknowledged in considerations of such crises is the temporalities that accompanied them. Bousquet’s description of Hiroshima as “Time Zero”, the beginning of a new age, is suggestive of the time-related impact of the nuclear age, but does not do justice to the breadth of temporal implications of the bomb (740).

The example with which I opened, of the shrinking gap between speculation and fact, is just one case of the contracted post-nuclear time scale. The grand vision of the future that, just years previously, was dubbed ‘The World of Tomorrow’ at the 1939 World’s Fair was suddenly, for many, a possible near-present. Accompanying this anticipation was, in the years to come, the dawning threat of impending, near-instant apocalypse: the possible end of all life, and thus of time itself. Therefore, as I shall detail, the onset of the nuclear age was a period when time figuratively shrank dramatically. I will also show that related crises of the mid-twentieth century, the World and Cold wars that bookended the birth of the bomb, were marked by similar, under-examined temporalities. While science fiction in general played a prominent role speculating about the possible consequences of the bomb, my focus is on narrative representations of these crises’ temporalities—on their prompts, symptoms, and features that involve disruptions of time’s paradigmatic structures. I contend that time travel fictions of

1 While my focus is firmly on Western (and specifically US) reactions to these mid-twentieth century crises, the East was similarly impacted.

2 Similarly, when I use terminology such as ‘temporal’, ‘temporally’, or ‘time-centred’ to describe a process, event, text or phenomenon, I do not use it as a antonym of spatial; I do not simply mean that is tensed or a part of linear time. In a way, everything is temporal; language itself is saturated in time, with every sentence requiring a verb that is tensed. Instead, I use these terms to highlight that the symptom or feature under discussion functions by highlighting or altering an aspect of time: either the relationship between past/present/future, or the nature of change, causation, or possibility. Therefore, by referring to the “temporal implications” of the bomb I am pointing to the implications of the technology that directly impacted the notions of change, cause and effect, and/or future possibilities, as I will detail in chapters three and four.
the mid-twentieth century serve a specific purpose: they provide an allegorical representation of the time-centred aspects of this period of socio-cultural upheaval, of the ‘temporalities of crisis’.

SF has long speculated on the possibilities of science and technology. As Middleton and Woods note, SF in the 40s and 50s was “more than just a shared fantasy game, since it was also maintaining a collective research project on the effects of technological change on cultures and societies” (235). Therefore, despite its ludic image, a key component of SF of the mid-twentieth century was its focus on the cultural and societal change that accompanied technological development. Time travel, a subgenre of SF, arguably shared this focus. I say ‘arguably’ as it has been suggested that time travel fiction engages with one of two parts of Middleton and Wood’s description of SF: that some time travel narratives engage with ‘technological or scientific change’ and others ‘cultural and societal change’. Burling distinguishes between these two roles, labelling time travel narratives either ‘temporal dislocation’ or ‘temporal contrast’ sub-types. ‘Temporal contrast’ stories, of which he posits Wells’ The Time Machine (1895) as an example, are said to keep science, time, paradox, and philosophy secondary to socio-cultural commentary. They are said to use the narrative device simply as a means to emphasise “a dynamic historical critique” (Burling 12, emphasis in original), with the intricacies of time travel itself holding little importance. In accordance with such an assessment, Wells’ time machine could apparently be replaced with the protagonist ‘sleeping’ into the future, as in Edward Bellamy’s Looking Backward: 2000-1887 (1888) or Wells’ own The Sleeper Awakes (1910) with no impact on the story’s socio-political impact. According to Burling, the depiction of time travel in such stories is redundant, with its only utility a means of ‘contrasting’ the depicted time periods. This type of story, with secondary or minimal focus on the intricacies of time travel, is said to be the only kind that contain “a potent latent meaning” (Burling 12). ‘Temporal dislocation’ time travel narratives, on the other

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3 Time travel is a somewhat troubled subgenre. As Slusser and Chatelain point out, many believe that it is not SF, owing to its tendency to produce logical paradoxes. For some, such as Dr Robert L. Forward, this means that its narrative trappings are based on “magic, not science” (Slusser and Chatelain 161), which would make time travel a subgenre of fantasy, not SF. However, this is not a debate I shall engage with on a significant level. My thesis excludes time travel via ‘magic’, but does examine stories with dubious pseudo-scientific trappings. My filter when developing my argument was to only consider stories that are logically consistent within their narrative world.

4 See, for example, Burling, Slusser and Chatelain, and Lem.
hand, are those that focus on paradoxes and philosophical implications of time. These are said to be “ideologically neutral” (8) with “no interest in where the time travelers go or in the socio-economic complexities of time” (11) or other forms of social commentary. In contrast with this assessment, one echoed in part by others including Slusser and Chatelain, and Lem, this thesis argues ‘temporal dislocation’ stories, rather than being ‘ideologically neutral’, often contain a ‘latent meaning’. My argument is that the subgenre functions in a similar manner to Middleton and Wood’s assessment of SF in general. In both temporal contrast and temporal dislocation narratives, in stories such as The Time Machine along with paradox-heavy examples such as Heinlein’s ‘By His Bootstraps’ (1941), the act of time travel itself is an allegorical element. It reproduces the time-related aspects of periods of socio-historical upheaval (in the case of ‘By His Bootstraps’, the sense of repeating, never-ending crisis that accompanied the onset of the Second World War). I argue that depictions of chronological manipulation, paradoxes, time loops, and the destruction of timelines serve a specific purpose: they provide a literalised reproduction of the temporal aspects of moments of socio-political crisis.

**Aims**

The purpose of this thesis is therefore to delineate the allegorical mode of the time travel subgenre of science fiction. In the first three chapters, under the section heading ‘The Temporalities of Crisis’, I aim to highlight the refiguring of time that occurred during World War II and the Nuclear Age. Departing from Burling’s split categorisation of the subgenre, my goal is to illustrate that time-centred cultural and political implications of the war and the bomb are analogised via the narrative depiction of travelling through time. A brief example that may elucidate these aims comes from perhaps the most famous time travel tale, Wells’ The Time Machine.

The scientific developments of the nineteenth century were, in light of my earlier definition of the term, deeply temporal. As Stephen Kern has outlined, the time scale expanded dramatically during the Victorian era. During the nineteenth century Bishop Ussher’s 1654, Genesis-based calculation, that the Earth was roughly 6000 years old finally gave way. Sir Charles Lyell’s study of geological
strata led to his conclusion that the planet was far older previously assumed; Darwin’s studies suggested it was at least three hundred million years old (37), while Lord Kelvin’s work in thermodynamics later in the 1800s contracted time once again to around one hundred million years (37). These proposed ages fell well short of the four billion plus years, calculated following the development of radiometric dating in the early twentieth century. Yet, the Victorian expansion of time was a massive development from theology-driven and Church-approved assessments of mere thousands of years. The relationship between time travel in Wells’ novel and this fluctuating time scale is well documented. Ruddick notes that “The Time Machine is about the transformed post-Darwinian relationship between humanity and time” (339), and that “Wells is … simply (trying) to raise the reader’s awareness of a temporal frame too large to be measured by the clock or the calendar, and indifferent to human concerns” (340). This assessment points to the novel possessing a meaning outside Burling’s description of ‘temporal contrast’ narratives. It suggests that the act of time travel itself is an important factor in its social commentary. Wells’ time traveller accelerates time until it is speeding by; “the thousands hand” on his time dial “was sweeping round as fast as the seconds hand of a watch” (Time Machine 101), yet many minutes of narrative time are taken for him to reach the far future of Kelvin and the ‘heat death’ of the sun. This conflation of thousands of years with seconds lends some accessibility to the expanded time of the nineteenth century. However, we can extend this assessment, and further delineate the allegorical mode of Wells’ depiction of time travel. Along with the expanding time scale, Kern describes other impacts of Victorian science on the perception of time. He notes that electric lights and cinema altered the ‘arrow of time’ during the ‘crisis’ that was the fin de siècle. Night was transformed into day, and therefore the “thrust of the age was to affirm the reality of private time against that of a single public time and to define its nature as heterogeneous, fluid, and reversible” (Kern 34). This description of fin-de-siècle temporality recalls the spinning dials, and fluid movement between day and night observed during the operation of the time machine. When the time traveller returns to his present, time is depicted as literally fluid and reversible: “…the thousands hand ran back to the starting-point, the night and day flapped slower and slower. … Mrs Watchett … traversed the laboratory. But now her every motion seemed to be the exact inversion of her previous ones” (Wells The Time
Such imagery, of time slowing down and moving in reverse reproduces the figurative changes to time that Kern describes. Time was not actually reversible at the *fin de siècle*, but this was rather a social reaction to the period’s new technology. It was society’s perception of time that altered, and these alterations are allegorically reproduced in *The Time Machine* by the depiction of this figurative process in literal form. This brief example highlights the allegorical mode of time travel. It suggests that the act of time travel in the story can be considered a reproduction of the development of the electric light, and particularly its impact on the nature of social time. I intend to illustrate in detail that it is such temporal aspects of ‘crisis’ that time travel represents; it is a narrative form that allows for a literalised allegory of crises’ figurative, yet oft-underplayed, connections to time.

Along with allegorising crises’ temporalities, time travel fiction also plays a secondary role. I explicate this function in the second half of my thesis, which is titled ‘Modes of Alleviation’. Along with providing a representation of crises’ temporal elements, time travel narratives also mimic the form and function of phenomena used to mediate these crises. Focussing on propaganda and apocalypse, I outline how both are deeply connected to time, and used to contain fear. For example, much propaganda is designed to ‘integrate’ a population, to promote the image of the dominant ideology as the best possible. To propagate such messages, propagandists effectively ‘rewrite’ the past. In the early atomic age, the US government repeatedly ‘altered’ both the historical past and scientific consensus in order to present an ‘acceptable’, less frightening image of nuclear reality (Oakes and Grossman, esp. 377-80). The civil defence program, including the ‘Duck and Cover’ films, and government-backed texts such as the film *The Beginning or the End* (1947) were all designed to ‘manage’ nuclear fear. An atomic blast was depicted as something one could survive by ducking under a desk, or jumping into a gutter. In whitewashing the reality of Hiroshima’s destruction and the bomb’s known devastating power, this type of propaganda is temporal: it involves, essentially, the replacement of the past with a new one, ‘written’ to reduce fear. I aim to show that time travel fiction mimics this ‘rewriting’ of the past, along with other temporalities of propaganda. Similarly, apocalypse is also a deeply temporal form of anxiety reduction. I shall illustrate the role that time
plays in traditional apocalyptic fictions, and its ability to reduce fear by providing a sense of ‘temporal continuity’. The increased secularity of the nuclear age presented a problem for apocalypse, disrupting this ability. In the final chapter of this thesis, I will demonstrate that the form and function of some time travel fiction mirrors that of the traditional apocalyptic model. These narratives depict science-driven time travel in a way that parallels traditional apocalypse’s Christic transformations of the world, with both leading humanity to analogously positive futures. As such, it bypasses the secular problem and provides a scientised alternative to sectarian apocalypse. Therefore, my goal in the second half of the thesis is to demonstrate that time travel fiction shares propaganda and apocalypse’s role in presenting a message that assuages fear. It does so through its allegorical mode, through the depiction of time manipulation. Narrative depictions of time travel, I will argue, reproduce both crises’ temporal prompts, and their modes of alleviation.

The study of time travel

This thesis moves beyond the dominant ‘ludic’ interpretations of the role of time travel narrative devices, and proposes that they have prominent allegorical purpose. The notion that narrative depictions of time manipulation reflect, either solely or primarily, philosophical musings or games is connected to the most voluminous academic scholarship on the topic, which is from the school of philosophy. As early as 1963, with Hilary Putnam’s ‘It Ain’t Necessarily So’, the logical possibility of real-world time travel has been debated in philosophy journals. Articles by Vranas, Sider, Meiland, Dwyer, and many others similarly ponder questions regarding a time traveller’s ability, for example, to kill her younger self. While philosophical discussions, rather than literary criticism, the work of these scholars, in explicating the logical limitations of time travel, is useful in two ways. Firstly, it helps lay the groundwork for the rules that govern logically consistent time travel fiction. My argument depends on a connection between fictions’ depicted time models, and real-world temporalities. Without logical ‘rules’ governing fictional time travel, a narrative world does not present an identifiable, consistent model of time. As such, I focus on stories that obey the
same logical limitations explicated by these time theorists.\(^5\) Secondly, on occasion these philosophers of time will draw examples from time travel fiction, as with David Lewis’ use of Asimov’s *The End of Eternity* (1955) to outline a ‘dual model’ of time. This text is central to my thesis, and Lewis’ work proves particularly useful in chapter six, where I rely on his distinction between ‘personal’ and ‘external’ views of time. These studies also provide a solid ‘point’—the counterpoint of which is my aim here—time travel narrative devices can create logical conundrums that have thus far been the focus of much academic energy.

Prominent studies of time travel fiction tend to have a similar focus to that of scholars whose primary interest is philosophy. The connection between time travel narrative devices, developments in science, and logical ‘games’ is a key interest for scholars of this SF subgenre. The most detailed book-length study of time travel fiction is Nahin’s *Time Machines*. Here Nahin provides an excellent and detailed history and taxonomy of time travel narratives, and their plausibility in relation to scientific theory and logic. Yet, it is beyond the scope of his study to give consideration to any socio-cultural role played by depictions of time travel, outside of their connection to developments in mathematics and physics. Several smaller studies have been written on time travel devices, a number of which are collected in *Worlds Enough and Time* (Westfahl, Slusser & Leiby eds). Again, these papers tend to be ‘explanatory’, and focus on the relationship between time travel and science (Slusser and Heath, Kuusisto). Other studies, independent of *Worlds Enough and Time*, suggest a similar pattern of focus: Richmond follows Nahin and sketches out taxonomies of time travel models, and their relationship to science and logic; Malament concentrates on the mathematical possibility of literary time travel; and Mowbray on matching scientific developments to time travel depictions. These studies, particularly Nahin’s, are extremely useful and detailed, providing solid groundwork for analyses of the subgenre. However, with little or no intersection proposed regarding these texts’ depictions of the intricacies of time travel and their socio-historical context, they provide space for my study. That said, there are a number of studies that comment on the role played by time travel devices, beyond their reflection of science and philosophy. These form a general

\(^5\) Some logical inconsistencies that don’t affect the depiction of time are ignored. For example, The time traveller in Wells’ *The Time Machine* would conceivably find his machine floating in space, as the Earth’s rotation moves it from underneath him.
consensus regarding the ludic purpose of these devices, a viewpoint that I will challenge in my thesis.

Time-heavy narrative devices, such as causal loops, branching timelines, and depictions of ‘changing’ the past are often marked as cognitive or narrative ‘games’. Above, I have outlined Burling’s case, his distinction between his temporal ‘dislocation’ and ‘contrast’ forms. Similarly to Burling, Lem categorises time travel fiction that highlights paradoxes and other consequences of travelling as “ludic”. He claims that such time travel ‘games’ detract from value of SF as a whole “...these authors, while ridding themselves of the stigma of cheap and defective SF, in one fell swoop give up all that constitutes its cognitive value” (154). This notion of time travel as narrative play is echoed in studies claiming that time travel devices represent modernist or postmodernist experimentation with form. For example, Leiby argues that:

Time travel writers actually experimented with techniques employed by the moderns and postmoderns; ... we may view time travel narratives as self-reflexive narratorys that comment on the logic of all narratives by analogy: They provide a protagonist whose predicament mirrors that of the writer in the throes of building his plot. ("Jaws” 46)

While here Leiby approaches my claim that time travel devices have an allegorical mode, his focus remains on experimentation and the art of writing, rather than socio-historical reflection. Similarly, Mann claims that time manipulations “fracture the stable structure and time vector of ‘story’ “ (17), and Slusser and Chatelain say they provide “...significant insight into the nature and extent of so-called “experimentation” with spacetime categories in modern narrative” (162). As such, these studies have the same purpose as my thesis—they attempt to identify the role played by narrative depictions of time travel. However, where they situate such depictions as part of the (post)modernist project, I argue that they allegorise the time-centred aspects of socio-historical crises.

Not all critical analyses of time travel fiction are at odds with my approach or my core argument. There are also numerous studies that give credence to the idea that time travel devices have utility in reproducing their socio-historical context. Middleton and Woods come closest to my approach. The authors argue that the subgenre “…recapitulates or mirrors the past, (and more importantly) ...is the distortion, the fantasy or working through of this material” (251). This reflects
the initial argument of my thesis. In chapter one I focus on the cultural trauma of World War II, arguing that time-heavy SF of the period allegorise the return of the past trauma of the Great War, that they reproduce the temporalities of the war in a way that is akin to Middleton and Woods’ “working through”. However, I then move on from a focus on the past, and my thesis considers time travel fictions as emergent from the crises surrounding their composition. As such, my claim is that the subgenre is reflexive rather than reflective. Middleton and Woods maintain their past focus, as their text analyses the reflection of historical processes in SF (not just time travel). Middleton and Woods also point to specific socio-historical events, which are contemporaneous with their chosen texts, yet these moments remain distinct from analyses of the time travel devices themselves. For example, when addressing Asimov’s *The End of Eternity*, Middleton and Woods go far closer to my assessment of the text than Lem. Where Lem argues that the novel’s use of time travel is playful and that its political messages “have been tacked on rather casually” (149), Middleton and Woods point out deep connections between the novel and the tensions of the nuclear age. They draw links between the novel’s time travellers, the ‘Eternals’, and the Manhattan project scientists who ultimately became anti-nuclear advocates. While this is a useful connection that I draw on in chapter five, their review of the novel’s time travel itself remains removed from this socio-cultural context. Their primary claim is that Asimov’s depiction of time travel is akin to the history of varying “scientific facts” (266), of the variable nature of history. My approach retains Middleton and Woods’ socio-cultural assessment of the Eternals when analysing their time travel. For example, in chapter five I argue that the changing timelines of the Eternals, their ‘Reality Changes’, are an allegory for pro-nuclear civil defence propaganda. Rather than allegorising a rewriting of ‘scientific history’, I posit that time travel in the novel reflects contemporary attempts to ‘rewrite’ facts regarding the new nuclear reality: that propagandistic assertions regarding the bomb’s survivability are literalised in the Eternals’ rewriting of time.

Westfahl also approaches my argument regarding time travel’s propagandistic allusions. He argues that dystopia and utopia, arrived at in fictions via time travel, are presented not as other ‘places’ but other ‘times’: logical extensions of the historical present. Westfahl proposes that the conventions of the
sub-genre allow writers to “imbue their visions with special impact” by ‘bringing’ the future to the historical present (3). Yet, like Burling’s assessment of The Time Machine, this narrative ability to conflate times is not teased out in reference to the time travel devices themselves. Cheng’s study is another that draws close to my argument, specifically that which I outline in second half of my thesis: in my second section I claim that time travel fiction allegorises an assuaging function, that it reflects temporal processes, such as propaganda and apocalypse, which can counter socio-cultural fears and anxieties. Similarly, Cheng argues that a “linear sense of time was important (in depictions of fictional time travel). Situating past, present, and future along the same historical arc, writers used the future to reflect upon and assure the present” (196). The assuaging function of the genre to which Cheng points is, again, removed from an analysis of time travel’s paradoxes and temporal manipulations. In this case, the absence is a limitation of his chosen era. Cheng only examines interwar SF, in which, much like their nineteenth-century precursors, “[t]ime travelers moved freely back and forth in time with no complication or caveat” (191). Cheng explains that complex time travel complications and logical paradoxes only became a feature of the subgenre near the beginning of World War II. This is the critical site of my thesis, both thematically and methodologically. I start with the period within which time travel narratives matured, and began to explore the complications of chronological displacement. From this point I explicate the socio-cultural function of specific depictions of time travelling in time.

Most major considerations of the time travel subgenre of SF focus on its connections to science and philosophy, narrative tradition, or serve an explanatory purpose. Those with a socio-cultural focus leave room for closer examination of the time travel devices themselves. This thesis therefore makes a significant contribution to the scholarship of time travel fiction. It makes a case for the various time travel models, and their paradoxes and philosophical implications, to have utility beyond logical or narrative ‘play’. They allegorise key socio-cultural tensions, moments of ‘crisis’ within which the stories were produced, and these crises’ time-centric elements: the ‘temporalities of crisis’. They also reproduce ‘coping mechanisms’, or ‘modes of alleviation’, as I call them: temporally loaded
phenomena such as integration propaganda and apocalypse, which traditionally alleviate fears at times of socio-cultural upheaval.

**The temporalities of crisis**

In the mid-twentieth century, American culture faced numerous, overlapping ‘crises’, periods of social, political, and technological upheaval. The Second World War and the onset of the nuclear age shook society, prompting emergent fears and anxieties regarding, even, the very continuity of life on Earth. There is inherent temporality to such fears, one that is under examined in the plentiful academic accounts of such crises. For example, World War II created a traumatic recollection of the Great War, and the fear that the past was doomed to repeat itself. Similarly, the eschatological anxiety associated with the birth of the nuclear age is the result of fears that time could come to an end. I term such time-centred aspects of these periods of turmoil the ‘temporalities of crisis’. It is my contention that time travel fiction, with its ability to present the manipulation of time, intersected the anxieties that were contemporaneous with their production and which allegorically reproduced their temporalities.

In chapter one I focus on the cultural trauma prompted by the onset of World War II. Prominent studies of trauma⁶ all point to the temporally destabilising aspect of the phenomenon. I deploy these studies to more fully posit the temporality of trauma, specifically in relation to the cultural trauma of the war. The lead up to the US’s involvement in the conflict brought with it a sense that the ‘same’ European war that traumatised the nation at the dawn of the century had returned, and that humanity was thus trapped in a destructive cycle. Time-centric SF of the period allegorises this temporal aspect trauma, literally representing destructive cycles and inescapable conflict. I analyse *Exiles of Time* (1940) by Nelson Bond, Isaac Asimov’s ‘Nightfall’ (1941), and A.E. van Vogt’s ‘Recruiting Station’ (1942). These stories depict the ‘return of the past’ associated with cultural trauma, and thus use time travel to engage with their socio-cultural context. To support this argument, I establish a key concept that I use throughout

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⁶... such as those by Caruth (“Trauma”); Hartman (“On Traumatic Knowledge”); Van der Kolk and Van der Hart; Whitehead; and Forter.
this thesis: the ‘allegorical mode’ of time travel fiction. I extend and modify prominent studies of SF by Suvin and Jameson, both of whom argue that SF is a reflexive genre, concerned more with the present than with simply depicting the future. Here, I also draw on the work of Adam Lowenstein and Linnie Blake, who similarly posit an allegorical role for genre fiction. Lowenstein’s study suggests that cultural traumas create “wounds in the fabric of culture and history that bleed through conventional confines of time and space” (1). He coins the term “allegorical moment” to refer to a textual representation of trauma that “conforms to neither the naïve verisimilitude of realism, nor to the self-conscious distantiation of modernism” (4). In other words, allegory is able to advantageously represent ‘unrepresentable’ phenomena, such as trauma. Blake claims this approach is “an extremely useful means of exploring the relation of cultural artefacts to the millieux in which they circulate” (6). I divert from these studies in two ways. Where Lowenstein’s ‘allegorical moment’ marks an intersection between ‘film, spectator, and history’, I propose that time travel devices possess an ‘allegorical mode’, removing the focus on ‘spectator’ and instead establishing a connection between ‘text’ and ‘event’. Also, the genre and medium of my study is a divergence. Where Blake and Lowenstein examine horror cinema, I am investigating the role of time travel fiction. The cyclical time of Exiles of Time and ‘Nightfall’, and the unique and conceptually complex time model of ‘Recruiting Station’, mimic the temporalities of this cultural trauma represented by World War II. These texts’ depictions of time travel and time loops themselves are sites of representation—they allegorise the temporalities of crisis.

In the second chapter I develop this argument: that time travel or time-heavy SF functions as allegory, reflecting the time-centred nature of the crises surrounding their production. However here I move from trauma to a ‘generalised’ sense of crisis. I use Kermode’s The Sense of an Ending (1965) to define a notion of ‘immanent crisis’. Kermode’s landmark study of apocalypse builds on a claim that recurring periods of history “bear the weight of our anxieties and hopes” (11), that humanity has a tendency to consider itself to be always within a crisis:

It seems to be a condition attaching to the exercise of thinking about the future that one should assume one’s own time to stand in an extraordinary relation to it. The time is
not free, it is the slave of a mythical end. We think of our own crisis as pre- eminent, more worrying, more interesting than other crises. (94)

This crisis, he claims, is transitional; it tends to lead to another crisis, perpetually deferring ‘the end’. Humanity is born “in the middest”, and greatly desires a lacking beginning and end. Using this theoretical base, I argue that this sense of ‘immanent crisis’ is allegorically reproduced via the causal loop structure of Robert Heinlein’s short story ‘By His Bootstraps’ (1941). Kermode’s claim that such crises are near universal supports my argument that Heinlein’s story reproduces temporalities central to World War II; the deterministic ‘block universe’ model that was a consequence of Einstein and Minkowski’s theories; and also Heinlein’s own personal anxieties relating to the onset of the war.

The third chapter of my thesis begins my analysis of the dominant crisis of the mid-twentieth century—nuclear fear. There are intimate connections between nuclear fear and perceptions of time, which remain under-acknowledged in studies of nuclear age anxieties. I argue that the onset of the nuclear age saw significant alterations to the time scale. To this end, I draw upon Spencer Weart’s Nuclear Fear (1988), Robert Jay Lifton’s The Future of Immortality (1987), Paul Boyer’s by the Bomb’s Early Light (1985), and Joanna Bourke’s Fear: A Cultural History (2005) to fully delineate the role of time in creating nuclear fear. These studies provide significant insights into nuclear fear, providing evidence of this crisis’ deep temporal nature without explicitly highlighting its connection to time. I demonstrate that in contrast to the rapid expansion of time in the mid-to-late nineteenth century, the temporalities of the nuclear age involved a contraction. The wonders of the future seemed to be within reach, and the future thus seemed to come to the present. This contraction is shown to be a primary force behind the impact of nuclear fear. Similarly, the nuclear age conflated cause and effect, with enormous consequences associated with seemingly inconsequential actions (such as pushing ‘the button’ to start a nuclear apocalypse). Time travel narrative devices, with their ability to literally present the manipulation of time, reproduced these temporalities. I analyse texts such as Asimov’s The End of Eternity (1955), Edmond Moore Hamilton’s City at World’s End (1950), and Ray Bradbury’s ‘A Sound of Thunder’ (1952), along with numerous pulp stories from the period. I also engage with debate surrounding the utility, or even possibility, of the nuclear
referent, drawing on Derrida’s ‘No Apocalypse, Not Now’ (1984), Ken Ruthven’s *Nuclear Criticism* (1993), and Roger Luckhurst’s *Nuclear Criticism: Anachronism and Anachorism* (1993). Where Ruthven and Luckhurst call for the preservation of the textual nuclear referent, and Derrida claims such a referent is impossible, my argument bisects this debate. My claim is that the allegorical mode of time travel fiction, at play in these texts, is not dependant on explicit depiction of nuclear destruction. It can recall the utility of such a referent in providing insight into nuclear anxieties, yet by allegorically reproducing the temporalities of these fears, bypasses the need to refer—or not—to a specific nuclear event.

**Modes of alleviation**

In the second half of my thesis I delineate a secondary role of time travel fiction. Along with providing a representation of crises’ temporal elements, time travel narratives also mimic the form and function of phenomena used to mediate said crises. Focussing on utopia, propaganda, and apocalypse, I outline how these phenomena are both temporally laden and used to assuage fear. These two features of such phenomena, their inherent temporal and comforting elements, are what define ‘modes of alleviation’. I demonstrate that time travel fiction allegorically reproduces the form and function of these ‘modes of alleviation’ via depictions of time manipulation, re-writing the past, or travel to a post-cataclysmic future. Narrative representations of time travel, I argue, allegorise processes designed to reassure regarding the present or to provide hope regarding the future, and thus ‘counter’ the anxiety-inducing temporalities of crisis.

Chapter four serves as a transition between the two halves of my thesis. Here I analyse a prominent temporal duality created by the birth of the bomb. The technological breakthrough made by at Los Alamos in 1945 gave rise to two possible futures for humanity: the very real possibility of the end of all life on the planet, and the concurrent perception that a utopian future may be in reach. In this chapter I engage with studies by Booker, Broderick, Boyer, and Jacobs, who all outline this dual temporality of the nuclear age. However, these studies again do not focus on the specific role of time in this crisis. Even studies explicating the fear of the ‘final end’ fall short of clearly articulating the role of time in creating such a fear. For example, Lifton argues that the bomb threatened the sense of “symbolic
immortality” that allows humans to confront death—humanity’s universal need “for a symbolic relationship toward that which has gone on before, and that which we know will go on after” our deaths (The Future 13). I further define the temporal element of such assessments of nuclear fear, and make a case for the centrality of time to this crisis. The fear of the nuclear end, I posit, was a fear of the end of time. Extending my study of The End of Eternity and City at World’s End from the previous chapter, I demonstrate that these texts deploy depictions of time travel as allegorical representations of this dominant temporality of crisis. I then use this temporality’s connection to the ‘anticipation’ of a utopian, nuclear-powered future to transition into an examination of ‘modes of alleviation’. Nuclear technology was an extension of an apex of hope regarding technology’s transformative potential. Symbolised by the 1939 New York World’s Fair, technology had become entwined with a perceived ability to usher in a grand future. The bomb, while threatening humanity’s temporal continuity, at once promised the realisation of the utopian dream. In this section I primarily draw on Darko Suvin’s Metamorphoses of Science Fiction (1980), and Milner and Savage’s ‘Pulped Dreams: Utopia and American Pulp Science Fiction’ (2008) to explicate the assuaging function of such ‘anticipation’, particularly its ability to counteract its destabilising counterpoint—the fear of the end of time. Here I engage with examples of time travel fiction from both the Futurian school of technological utopianism⁷, and the ‘darker’ vision of utopia posited in Campbell’s Astounding Science Fiction magazine. I define the role of both utopias as ‘modes of alleviation’, and demonstrate that their depictions of time travel allegorise this comforting mode. Henry Beam Piper’s ‘Time and Time Again’ (1947), Fredric Brown’s ‘Letter to a Phoenix’ (1949), and ‘The Figure’ (1949) by Edward Grendon all use time travel to depict ‘temporal continuity’, the anticipation of a future, any future, despite the threat of the ‘end of time’.

Chapter five demonstrates that the allegorical mode of ‘change the past’ time travel reproduces the assuaging effect of early Cold War civil defence propaganda. The US government deployed propaganda to alleviate nuclear anxiety, and this mode of alleviation is as temporal as the crisis it counteracts. The

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⁷ The Futurians believed that technology could bring about a democratized utopia. See Milner and Savage for more.
primary methodological basis for this chapter is Jacques Ellul’s *Propaganda: The Formation of Men’s Attitudes* (1973). Ellul outlines the assuaging impact of propaganda, which is more commonly associated with an agitative effect:

The propagandee experiences feelings of mastery over and lucidity toward this menacing and chaotic world, all the more because propaganda provides him with a solution for all threats and a posture to assume in the face of them. (159)

Propaganda such as the civil defence program is designed to similarly ‘integrate’ a population, to provide it with ‘solutions’ to its anxieties by propagating the message that the dominant ideology is the best possible. To achieve this, propagandists effectively ‘rewrite’ the past. In the early atomic age, the US government repeatedly ‘altered’ both the historical past and scientific consensus in order to present an ‘acceptable’, less frightening image of nuclear reality. An atomic blast was depicted as something one could survive by sheltering in the family basement (Bourke 271). In ignoring the reality of Hiroshima’s destruction and the bomb’s known devastating power, this type of propaganda has a distinct temporality: it involves, essentially, the replacement of the past with a new one, ‘written’ to reduce fear. Through an extended analysis of *The End of Eternity*, I demonstrate that ‘change the past’ time travel fiction mimics this ‘rewriting’ of historical ‘fact’, along with other temporalities of propaganda. The novel itself also sends a highly propagandistic message to its readers. In the final section of this chapter, I move towards an assessment of the novel that recalls Lowenstein’s ‘allegorical moment’. It is a site of intersection between text, event, and reader that uses time travel’s allegorical mode for propagandistic ends. The novel’s climax reveals a ‘true’ model of time, one that approximates ‘branching time’. By depicting multiple, duelling realities, the novel posits that the ‘real world’ of the reader is the best of all possible timelines. This allegorical mode, which I call ‘euchronia’ sends the propagandistic message that the development of the bomb, and the acceptance of its destructive potential, was the best possible choice open to humanity during the crisis of the nuclear age.

The final chapter of my thesis focuses on apocalypse as a mode of alleviation. Traditional apocalyptic fictions, I argue, have time-centric structures that allay anxieties during moments of socio-cultural turmoil. I use studies of apocalypse by Reeves, Boyer, Weart, Hendershot, and more to outline the role
time plays in traditional apocalyptic fictions, and its ability to reduce fear by providing a sense of ‘temporal continuity’. As Reeves outlines, traditional Christian apocalyptic myths “gave historical happenings a unique importance, linking past, present and future moments of time with transcendental purpose” (51). I define the temporalities of such assessments, and delineate the key problems with the new secular apocalyptic fears that emerged with the bomb. The increased secularity of the nuclear age disrupted the paradigm’s comforting elements, removing the hope of worldly redemption that had been a feature since the thirteenth century. This key to apocalypse’s utility as a ‘mode of alleviation’ was replaced, following the bomb, with a man-made, final ‘end’ of all life. I argue that the form and function of some time travel fiction mirrors that of the traditional apocalyptic model, while bypassing the problem of secular apocalypse. These fictions offer allegorical representations of traditional apocalyptic temporalities, including the Rapture, temporal continuity, and the promise of transcendence, all within a secular framework. As such, I argue that these stories act as science-based alternatives to the comforting sectarian apocalypse, effectively repairing the damage done by the bomb to this mode of alleviation. The thesis concludes with an analysis of the secondary assuaging aspect of apocalypse. Here I return to Kermode’s examination of apocalyptic fictions. Kermode outlines the assuaging impact of apocalypse’s paradigmatic structure:

Men in the middest make considerable imaginative investments in coherent patterns which, by the provision of an end, make possible a satisfying consonance with the origins and with the middle. (17)

However, such a ‘satisfying consonance’ can only come about if apocalypse’s deterministic paradigm is combined with an individual’s retention of a sense of agency. I use Kermode’s study as a springboard to an analysis of the assuaging affect of agency within a deterministic crisis, and outline the temporalities of such a mode of alleviation. I then demonstrate that the most deterministic form of time travel narrative device, the causal loop, allows the depiction of comfort amidst determinism. With a focus on the intricacies of the causal loop in ‘By His Bootstraps’ and Damon Knight’s ‘The Last Word’ (1957), I argue that the ‘dual’ perspective of time demanded by such devices reproduces this comforting aspect of apocalyptic fictions. Therefore, I demonstrate that the role of such temporally
dense devices, whose utility has long been associated with either narrative play or philosophical questions, also reflects and reproduces both the time-centred aspects of crises, and their modes of alleviation.
Section One: The Temporalities of Crisis
Chapter 1 - Cyclical Apocalypse: Cultural Trauma and the Onset of WW2

My aim in this opening chapter is to introduce the notion that time travel fiction has a distinct allegorical mode. It is not merely a vehicle for philosophical speculation, or social commentary disconnected from the depiction of time travel. The time travel narrative device itself, and the models of time that it implies, serve a representative purpose. In this chapter I argue that time travel fiction of the early 1940s, following the onset of World War Two but before the US’s direct involvement, plays a distinctly allegorical role. It reproduces the ‘temporalities’ of the cultural trauma represented by the war. During this period the return of global warfare seemed inevitable. The Great War, a traumatic event from the past, was supposedly ‘the war to end all wars’, yet it was apparently ‘retuning’ to the present; a similar European conflict was apparently unavoidable. I will argue that these cultural preoccupations are symptoms of cultural trauma, are deeply temporal, and are allegorically reflected in the time travel and time-heavy SF of the period.

In the first section of this chapter I delineate this ‘allegorical mode’ of time travel fiction, which holds a place of central importance in my thesis. To do so, I draw on prominent studies of SF and genre fiction by theorists including Adam Lowenstein, Linnie Blake, Darko Suvin, and Fredric Jameson. I then provide an example of the sub-genre’s representative function, through an examination of the destabilised temporality of trauma. Various scholars of trauma and trauma fiction, including Caruth, Van der Kolk and Van der Hart, and Whitehead refer to trauma as a kind of schism in time; a traumatic experience, they claim, is not fully processed when it first occurs, and only “becomes an event at some later” time (Whitehead 6). This means that an event that actually occurred in the past repeatedly impinges upon the present. These unwanted incursions of the past upon the present are said to destabilise causality and the linearity of time (Caruth “Trauma”; Caruth “Recapturing”; Van der Kolk and Van der Hart; Whitehead; Hartman “Trauma”). This temporality of trauma, with the past impacting on the present, I then demonstrate, is reproduced via depictions of time travel, such as that in Wells’ ‘The Chronic Argonauts’ (1888).
Time travel fiction can allegorise collective or cultural trauma’s temporal elements. Cultural trauma’s symptoms and structures are similar to those experienced by victims of personal trauma, but they are shared by a cultural group or social community. I examine the parallels between the cultural trauma represented by the onset of World War II and the emergence of science fiction with a ‘cyclical disaster’ theme. My argument is that this motif of recurring doom is a reflection of the contemporary cultural preoccupation with the trauma of warfare. With memories of the First World War still prominent for many Americans, the new conflict represented a ‘recurrence’ of the collective trauma of global war. Analysis of select stories from the period, including Nelson Bond’s novel *Exiles of Time* (1940), Isaac Asimov’s ‘Nightfall’ (1941), and ‘Recruiting Station’ (1941) by A.E. van Vogt, explicates this theme of cyclical devastation. These narratives depict cyclical models of time, punctuated by apocalyptic destruction and warfare, which reproduces contemporary anxieties stemming from the ‘return’ of global warfare. The texts I examine in this chapter similarly allegorise other temporalities of trauma, including the deterministic ‘temporal isolation’ that I identify as a major factor in trauma’s power. This ‘temporal isolation’, which prominently manifested in US culture during the onset of World War II, involves a sense of being ‘isolated’ in a present moment by the impact of the ever-encroaching past, combined with a deterministic, affectless future.

By exploring time travel narratives’ allegorical reproduction of the temporalities of trauma, I add to existing studies of the subgenre. Time is central to the crisis that trauma creates in both its personal and cultural forms. It is the discontinuity of time that gives trauma its power and allows it to debilitate, control, and deny agency. By linking this phenomenon to time travel and time-focused fiction, this chapter takes the first steps toward explicating the social role played by time travel fiction. As I will demonstrate here and in the following chapters, time travel narratives engage with personal and social crises such as trauma. They reproduce such tensions’ temporal features, and are thus cultural artefacts that reflect the central concerns of their contemporary culture.\(^8\) When

\(^8\) As I’ll demonstrate in the second half of this thesis, they can also reproduce the “repair work” needed to ensure the “integrity of the social fabric” (Neal 7).
disturbances such as trauma destabilise time, time travel fiction reproduces this effect.

**Genre fiction, the ‘allegorical mode’, and the temporalities of trauma**

Adam Lowenstein’s *Shocking Representation: Historical Trauma, National Cinema, and the Modern Horror Film* (2005) and Linnie Blake’s *The Wounds Of Nations: Horror Cinema, Historical Trauma And National Identity* (2008) provide a methodological basis for my primary argument in this chapter, and for my thesis. While these theorists focus on horror cinema, their work is useful to the study of SF since both genres, as I’ll demonstrate, share a distinct engagement with socio-cultural concerns. Lowenstein demonstrates that horror films can be considered allegorical “representations of historical trauma” (6). His argument focuses on the ‘allegorical moment’, said to be a point of collision between film, spectator, and history “where registers of bodily space and historical time are disrupted, confronted, and intertwined” (2). For Lowenstein this intersection is not an overt representation of historical trauma, such as in the film *Schindler’s List* (1993) and its depiction of the Holocaust. Instead, he is interested in genre films that are apparently spontaneous allegorical representations of the “historical trauma tied to the film’s national and cultural context” (9). Horror films, Lowenstein posits, involve an allegorical moment that engages with trauma while “conform(ing) to neither the naïve verisimilitude of realism, nor to the self-conscious distantiation of modernism” (4). In other words, this allegorical moment maintains the abstract nature of modernist representation, but lacks its self-reflexive aesthetic. Thus, the allegorical moment is identified as a positive means of mediating and working through historical trauma. It avoids the explicit representation that can suggest a lack of “respect for victims/survivors”, and the paradoxical issue of “silencing” survivors by deeming their experiences to be “unrepresentable” (5). Blake presents a similar argument—that horror films are “cultural products that seek to represent” historical instances of trauma (1). The utility of these studies to my thesis takes two key forms. Firstly, both theorists ask the same questions of horror films that I’m asking of time travel narratives. Lowenstein is interested in how such generic texts “access discourses of horror to confront the representation of historical
trauma tied to the film’s national and cultural context?” (9) Similarly, Blake asks: “What socio-cultural and historic functions might such (texts) serve ... ?” (6). My primary interest in this thesis is, likewise, to delineate the socio-cultural function of mid twentieth-century travel fictions. Secondly, Lowenstein and Blake provide a firm theoretical groundwork for the function of allegory in genre fiction. Lowenstein’s ‘allegorical moment’, in particular, has provided a basis for what I term time travel fiction’s ‘allegorical mode’. It has allowed me to draw on previously established examinations of the role of SF, by Darko Suvin, Fredric Jameson, and others, to define an allegorical function of the time travel subgenre. Through this allegorical mode, we can gain insight into the socio-cultural milieu that coincides with the composition of such generic texts.

Suvin, Jameson, and other leading SF theorists have argued that the function of the genre is social, reflexive, and image-focused—a function that can be extended to include an allegorical mode. As Suvin argues:

In the 20th century, SF has moved into the sphere of anthropological and cosmological thought, becoming a diagnosis, a warning, a call to understanding and action and-most important-a mapping of possible alternatives. This historical movement of SF can be envisaged as an enrichment of and shift from a basic direct or extrapolative model to an indirect or analogic model. (“Poetics” 378)

The social function of SF in general is thus reflexive. It is no longer realist extrapolation and exploration, but instead indirectly reflects on contemporary society and the human condition through imagery and analogy. Like Suvin, Jameson argues that SF is a ‘formal and historical event’, an expression of historical concerns with the “entire genre ... a symptom and reflex of historical change” (“Progress” 149). He goes on to claim that SF’s role is:

...not to give us “images” of the future-whatever such images might mean for a reader who will necessarily predecease their “materialization”—but rather to defamiliarize and restructure our experience of our own present”. (151)

Again, we have here a reflexive consideration of the role of the SF genre, with its function involving the use of imagery such as utopias and dystopias to create

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9 Suvin points to some examples: “I think that The Time Machine or The Iron Heel, Heinlein’s Future History or Pohl-Kornbluth’s Space Merchants, even Stapledon’s Last and First Men or Yefremov’s Andromeda, are primarily fairly clear analogies to processes incubating in their author’s epoch” (Metamorphoses 78).
engagement with its readers’ present. Another key SF theorist, Istvan Csicsery-Ronay writes in his excellent book *The Seven Beauties of Science Fiction* (2008): “…it is as sf that many of our impressions of technology-aided desire and technology-riven anxiety are processed back into works of the imagination”\(^\text{10}\) (2-3). Again, here we have a description of SF as a genre that imaginatively expresses contemporary anxieties and desires. These prominent critical assessments of the genre share a focus on SF’s use of imagery/indirect representation/analogy to express contemporary change/understanding the present/technology-based desires and anxieties. It’s a well-established thesis that has been the foundation of critiques of everything from Wells’ *The Time Machine* (Suvin *Metamorphoses*; Ruddick; Firchow) to Cold War creature features (Hendershot *Bomb*). It is also a reflexive process that is, on occasion, allegorical—an extension that helps to define the time travel subgenre’s representative mode.

Suvin describes the function of SF as ‘analogic’, yet when it comes to the role played by time travel narrative devices, allegory is a more useful tool than analogy. Analogy requires a level of connection between form and function that allegory can bypass. For example, in Wells’ *The Time Machine*, the Morlocks analogue the nineteenth-century working class. Both toil ‘below’, working in poor conditions for the betterment of the oblivious ‘upper’ classes, thus the Morlocks are a commentary on contemporary class inequities\(^\text{11}\). While such a popular reading is in line with the reflexive function of SF described by Suvin, Jameson, and others, allegory can also be employed as an analytic tool to allow alternative insights into such texts’ socio-cultural context. In my introduction to this thesis, I briefly analysed the role of Wells’ description of time travel in his novel, and argued that it reproduced the socio-cultural changes created by new technologies such as cinema and electric lights. The relationship I described is an allegorical one, between text and event, one that is, as Lowenstein puts it, a “partaking of the real without adopting ‘naturalized’ realism, and (a) partaking of the abstract without mandating a modernist aesthetic of absence and self-reflexivity” (15).

\(^\text{10}\) While I focus on cultural trauma in this initial chapter, time travel fiction’s engagement with science and “technology-riven anxiety” is addressed at length in chapters four and six. (Csicsery-Ronay 2)

\(^\text{11}\) Critical works that have made this connection, with varying amounts of depth, include Ketterer (“Death”), Latham, Cheng, Freedman, Parrinder, Hollinger, and Suvin himself in *Metamorphoses.*
Interpretive ‘meaning’ is maintained, yet allegory affords a greater level of abstraction between representation and represented. This aspect of allegory is useful when considering time travel narrative devices. As I will demonstrate at length throughout my thesis, such depictions of chrono-manipulation often evoke temporal concerns that remain a level of abstraction away from being ‘analogic’ representations of socio-cultural phenomena. Another advantage of allegory, Lowenstein says (following Benjamin), is that it departs from a “strictly teleological” consideration of the past and instead provides “fleeting instants where “meaning” is forged between past and present” (15). For Lowenstein, here the ‘present’ is the film/spectator and the ‘past’ is the historical trauma that the text allegorises. According to my analysis, allegory creates such moments of cross-chronological connection, and this point is central to what I call time travel’s ‘allegorical mode’.

The ‘allegorical mode’ of time travel fiction is the central function of the subgenre that I explicate in my thesis: a point of meaning, forged at the intersection of text and event. It is reflexive, as Suvin and Jameson say of SF in general, but not purely ‘aesthetic and self-reflexive’. In this intersection, the subgenre’s representations of time manipulations, travels in time, erasure of time, juxtapositions of past and future, and paradox are ‘text’. The ‘events’ with which they intersect are the chrono-centric elements of contemporary socio-cultural traumas and anxieties. In this chapter, the ‘events’ are the oft hinted at, but rarely explicitly described, temporal aspects of the cultural trauma that accompanied the onset of World War II (such as the intrusive, repetitious return of a traumatic past event to the present). As I will demonstrate, representations of cyclical time and deterministic universes in stories such as Exiles of Time (1940) by Nelson Bond, Isaac Asimov’s ‘Nightfall’ (1941), and A.E. van Vogt’s ‘Recruiting Station’ (1942) embody the repeating, inescapable nature of trauma while avoiding its direct representation. This allegorical function of the subgenre aligns with Altman’s

12 Of these three stories, ‘Recruiting Station’ has the strongest connection to wartime socio-cultural anxieties. Specifically, is a commentary on conscription: “somewhere, in the future another great war was being fought; a war so great that all the ages were being ransacked for manpower” (van Vogt). These recruits minds are wiped, making them “automatons” who line up to be killed in the future war, recalling the rhetoric of draft critics such as John L. Lewis, a prominent labor leader who feuded with President Roosevelt in 1940 regarding conscription. Lewis feared that conscription put under severe threat “freedom of individual initiative and enterprise” (cited in Clifford and Spencer 145), and Van Vogt’s mind-wiped soldiers, ‘ransacked’ from their homes, are
description of the role of genre in general: genre reflects the ‘nation’ that produced it, with generic texts “implicitly a permanent site of conflict among multiple possible meanings and locations” (87). Thus, the allegorical mode, like Lowenstein’s allegorical moment, is not a firm, ‘teleological’ representation of culture, but an interpretive site. Throughout my thesis I present a ‘possible meaning’ that connects the examined texts’ depictions of time travel to something ‘else’: the time-centred aspects of, in this chapter, trauma. Put simply, my allegorical mode draws on the classical definition of allegory: “texts that ‘say one thing and mean another’” (Berek 117, following Bloomfield). However, traditionally, allegory is a literary technique that involves conscious decisions on the part of the author, which raises a potential issue with my allegorical mode.

A question that needs to be addressed before moving forward is that of authorial intention—of whether the allegorical representations I describe are conscious or unconscious. This is a particularly important issue to clarify at this point; as I will articulate, allegory has established links to authorial intention, and my allegorical mode of time travel fiction is central to this thesis. To leave the question of intention unacknowledged may distract from my argument as I move forward. For Coleridge, a key element to allegory is its conscious deployment on the part of the author. In a lecture on Cervantes printed in *Miscellaneous Criticism*, the collection of his non-fiction writing, Coleridge argues:

> Of most importance to our present subject is this point, that the latter (the allegory) cannot be other than spoken consciously; whereas in the former (the symbol) it is very possible that the general truth maybe unconsciously in the writer’s mind during the construction of the symbol. (99)

While this definition would suggest that allegory must either be ‘spoken consciously’ or be considered ‘symbolic’, there are a number of points that allow the question—of the author’s conscious deployment of time travel for allegorical purposes—to be bypassed. Firstly, Berek usefully makes a distinction between ‘allegory’ and ‘allegoresis’. ‘Allegory’ is the literary technique described by Coleridge, one that readers can identify in texts, and the latter is an interpretive

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an extreme representation of this fear. While such ‘direct’ representation of wartime anxieties is worthy of study, my focus here is on how such stories’ depictions of time allegorically reproduce such socio-cultural concerns. As such my analysis does not focus on the more direct allusions to war in ‘Recruiting Station’.
process that sidesteps “consideration of the author’s probable intentions” (Berek 118). My explication of time travel’s allegorical mode is, strictly, a process of allegoresis, rather than the identification of allegory. This distinction allows my focus to remain where it has the most utility: on delineating the socio-cultural role of these generic texts. It is an approach shared by Lowenstein and Blake, further highlighting the importance of these theorists to my methodology. My approach, like Lowenstein’s focus on the collision between “film, spectator, and history” (2) leaves open the question of intention without necessitating direct engagement. As such, it reflects the function of genre, as outlined by Altman, and of SF, as Suvin describes—what’s most important is what these texts’ generic conventions reveal about the culture that produced them. Throughout my thesis, I consider the allegorical mode of time travel fiction to be a textually evident phenomenon that intersects with contemporary cultural anxieties and needs. As Blake says of horror films:

...escalating public interest in (these generic texts) bespeak a public will to understand the experience of traumatic events while self-reflexively exploring the function of mass cultural representations of such trauma ... (these texts are) an extremely useful means of exploring the relation of cultural artefacts to the milieux in which they circulate.

(Blake 4, 6)

The generic conventions of time travel fiction hold the same utility, and similarly provide a ‘means of exploring’ popular texts’ connection to their epoch. As I’ll demonstrate shortly, the volume of wartime time travel fictions that evoke a comparable ‘recurring doom’ motif also suggests a similar ‘public interest’ or preoccupation with such themes. I identify such themes as reproductions of the temporal aspects of the cultural trauma of World War Two. Thus, my delineation of time travel’s allegorical mode is a process of ‘allegoresis’, rather than the identification of allegory. While many of these fictions may contain conscious uses of allegory, to overly engage with the question of consciousness or unconsciousness on the part of the texts’ authors would interfere with my investigation of this role of the subgenre—hence Blake’s focus on the ‘relation of cultural artefacts’ to ‘milieux’, Lowenstein’s on the ‘point of collision’ between spectator, film, and history, and mine on ‘text’ and ‘event’. This is the domain of the allegorical mode of time travel fiction. While the overt nature of some of the textual representations I examine suggest their conscious deployment on the part
of their authors, and others speak to an apparently unconscious use, my focus remains on this intersection between text and event. Before moving on to the ‘event’ examined in later sections of this chapter—the time-centred aspects of cultural trauma in the context of the Second World War—it may be elucidating to provide a brief textual example of allegorical mode of time travel fiction. To demonstrate how time travel narrative devices can allegorically reproduce trauma’s problematisation of time, I will briefly focus on ‘personal trauma’, and a nineteenth-century text, Wells’ ‘The Chronic Argonauts’ (1888).

Cross-disciplinary studies of trauma describe the phenomenon in ways that problematise the notion of absolute, linear time (Caruth “Trauma”; Caruth “Recapturing”; Van der Kolk and Van der Hart; Whitehead; Hartman “Trauma”; Forter)\(^\text{13}\). Instead of time unfolding in a linear fashion, with each event preceding the next, traumatic events do not ‘occur’ in sequence. Rather, trauma “demarcates time, producing a breach in its homogeneous course” (Hartman “Trauma” 267). The assimilation or reception of the traumatic event occurs “only belatedly, in its repeated possession of the one who experiences it. To be traumatized is precisely to be possessed by an image or event” (Caruth “Trauma” 4-5). Such possession can be considered an aggressive incursion of the past into the present, in opposition to standard experiences of time. Anne Whitehead adds to Caruth’s assessment, noting that trauma “carries the force of a literality which renders it resistant to narrative structures and linear temporalities” (5). As I will argue shortly, it is the non-linear ‘temporalities’ and ‘narrative structures’ of time travel fiction that allow the SF subgenre to allegorically reproduce the traumatic experience. This notion of an ‘incursion’ of the past is taken a step further by Van der Kolk and Van der Hart. Drawing on the work of L. Langer, they argue that trauma victims’ experience of the past and the present is ‘simultaneous’. They claim that this:

\[\ldots\text{simultaneity is related to the fact that the traumatic experience/memory is, in a sense, timeless. It is not transformed into a story, placed in time, with a beginning, a middle and an end (which is characteristic for narrative memory). }\text{(177)}\]

\(^{13}\) These studies focus on personal trauma, rather than cultural trauma. However they can play an appropriate introductory role, as cultural trauma and personal trauma are symptomatically parallel (Neal 4).
In this assessment of the temporality of trauma, past and present have completely overlapped. Again, as I will demonstrate, time travel fiction is able—more so than traditional, linear narratives—to reproduce such a demarcated notion of time. Similarly, Forter points to trauma’s subservience to “the temporal logic of what Freud called Nachträglichkeit” (264). Forter agrees that Brenkman’s translation of the term as ‘retrodetermination’ is an accurate one. Forter adds that within “this logic, the trauma that causes neurotic symptoms becomes less a matter of punctual events intruding upon an unprepared psyche than an effect of the interplay between two moments, the second of which retrospectively determines the meaning of the first” (264). Adding another dimension to the temporality of trauma, here Forter is proposing that trauma involves, essentially, a reversal of cause and effect, with the present moment affecting the interpretation of the traumatic event. This particular temporality correlates with a time travel event’s key feature: a demarcated or manipulated chronological order. To help elucidate how the subgenre allegorises the temporalities of trauma fiction, I will provide a brief example unrelated to the chapter’s greater socio-cultural concerns.

H.G. Wells’ first time travel story, ‘The Chronic Argonauts’ (1888), a precursor to The Time Machine (1895), offers an excellent example of how time travel fiction can allegorise the traumatic problematisation of time. A very different story than its famous progeny, ‘The Chronic Argonauts’ is a very early example of the ‘loop in time’ narrative device. It also reproduces the sense of demarcated time that accompanies traumatic events. The town in which the story is set, Llyddwdd, is marked by the traumatic memory of a murder that occurred many years’ earlier. “An old man named Williams” was murdered in his home, reportedly by his two sons (“Chronic” 1). Wells’ description of the house recalls trauma’s temporal disruption:

The foul murder of this tenant by his two sons was the cause of its remaining for some considerable period uninhabited; with the inevitable consequence of its undergoing very extensive dilapidation. ... The plaster of walls and ceiling, growing green-black with a rain-fed crust of lowly life, parted slowly from the fermenting laths; and large fragments thereof falling down inexplicably in tranquil hours, with loud concussion and

14 A key focus of both this chapter and the next.
clatter, gave strength to the popular superstition that old Williams and his sons were
fated to re-enact their fearful tragedy until the final judgment. ("Chronic" 1-2)

This is a somewhat conventional narrative representation of trauma’s temporality. Wells represents the horror of the past event in the narrative present through the house’s rotting, fermenting nature. It stands like an open, unhealing wound on the hill above the town, recalling trauma theorists’ descriptions of the traumatic event as an ‘inoperable bullet’ in the psyche of the victim (Hartman “Trauma” 257).

Here, Wells’ description of the townsfolk’s response to occurrences such as the “falling down” of parts of the house is also suggestive of trauma. The resultant sense that the murder is being “re-enact(ed)” repeatedly invites comparison with trauma victims’ “intrusive thoughts, nightmares, or flashbacks” (Krystal 6). Such intrusions also align with Freud’s description of the ‘insistent return’ of traumatic dreams representing the literal return of traumatic event. The imagery in this passage, and its somewhat spectral nature, recalls Caruth’s assessment that a trauma victim is repeatedly and unexpectedly “possessed by an image or event” (“Trauma” 4-5). As such, the depiction of the rotting house as a site of trauma is a routine use of representative imagery. It is an example of the text serving an analogic function. However, the story’s depiction of time travel itself also has an allegorical mode that reproduces trauma’s temporal disruption. The descriptions of trauma I’ve cited here all suggest an incursion of the past into the present, with the traumatic event intruding, seemingly literally, into the mind of the victim in the present. Such a temporal disruption is allegorised in the story. Wells’ protagonist, Dr. Nebogipfel, takes up residence in the Williams house long after the murders. However, he accidentally travels backwards in time and materialises in front of (a very alive) Williams and his sons. The deeply religious Williams takes Nebogipfel for a demon, attacks him, and is killed in the struggle. As such, the murder that left such a traumatic mark on the town, represented by the dilapidated house and the superstitions of the townspeople, literally becomes a point of “interplay between two moments, the second of which retrospectively determines the meaning of the first” (Forter 264). Time travel in the story is thus a reproduction of trauma’s problematised cause and effect, of Freud’s ‘retrodetermination’. Since Wells’ depiction of time travel has no direct functional connection to trauma, this connection is not analogy. Instead, since the text is, following Bloomfield and Berek, saying one thing but ‘meaning’ another, it serves
an allegorical purpose. I draw on this example to briefly introduce the allegorical mode of time travel narrative devices. They often simulate the time-centred aspects of trauma (and as I shall show in the following chapters, generalised anxieties). In ‘The Chronic Argonauts’ this reproduction of trauma is separated from the cultural concerns that surrounded the text’s production\(^{15}\). In the following section of this chapter, I will demonstrate that an analogous process, one that is culturally specific, emerged during the Second World War. This notion, that time travel narrative devices play an allegorical role, is somewhat unique in SF criticism.

The allegorical mode of time travel fiction, while an example of SF’s well-established reflexive function, diverges from the majority of studies of the subgenre. My claim in this chapter, and throughout this thesis, is that time travel devices can be considered tools for reproducing and mediating socio-cultural concerns such as trauma. While, as I have argued, SF in general has been identified to play such a role (Jameson “Progress”; Suvin “Poetics”), SF criticism generally treats time travel fiction differently. Critics including William J. Burling have identified the subgenre as representative, but the depictions of time travel devices themselves are generally considered to posses only a ludic function. Burling argues that time travel tales such as *The Time Machine* correlate with Jameson and Suvin’s definitions of SF’s role. They present contrasted representations of stages of history, providing (often fairly surface-level) social commentary. Burling dubs this form of the time travel narrative ‘temporal contrast’. While it would seem to align with my argument, a key feature of this form is that the time travel device itself is secondary in these narratives. Burling provides a second label, ‘temporal dislocation’, for stories in which the act of time travel is highlighted—when the narrative focus is on paradox, temporal models, or philosophical enquiry. This ‘temporal dislocation’ form categorises time travel devices as idle (post)modernist exploration, refashioning structure and convention with the purpose of ‘self-conscious distantiation’ (Lowenstein 4). Burling’s ‘temporal contrast’ category does not consider the time travel device itself to be representative, just the ‘contrast’ between the time periods visited by such stories’ protagonists. This

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\(^{15}\) The connection between the story’s focus on Calvinist doctrine, with its focus on the strictly pre-determined ‘election’ of those who will be ‘saved’, and the determinism inherent to Wells’ depiction of time travel is an area for further study.\(^{15}\)
distancing of the social function of SF from depictions of time travel devices themselves is an extension of other critical considerations of the subgenre. For example, Slusser & Chatelain’s study focuses on what Burling calls ‘temporal dislocation’ as the only type of time travel narrative. However, this is the point at which my argument diverges. I argue that the time travel narrative device itself plays a representative role, combining both of Burling’s categorisations. In stories such as Exiles in Time and ‘Recruiting Station’ (both of which I examine in this chapter), and the novels and stories considered throughout the thesis, the act of time travel has an allegorical mode. Much like the time loop in ‘The Chronic Argonauts’, depictions of time travel in wartime SF provide a reproduction of the time-specific aspects of cultural trauma.\(^{16}\)

‘Cultural’ trauma shares with personal trauma a sense of temporal disruption and the apparently perpetual return of the traumatic event. It is these features that are most prominently reproduced in time travel and time-focussed narratives. Cultural, collective, or national trauma is trauma that is experienced simultaneously by a group of people, society, or nation. Its effects mirror those of personal trauma, including the phenomenon’s problematic relationship with time (Neal 4). Neal’s description of national trauma points to the temporality of this form of the phenomenon:

> The central hopes and aspirations of personal lives are temporarily put on hold and replaced by the darkest of fears and anxieties. Symbolically, ordinary time has stopped: the sun does not shine, the birds do not sing, and the flowers do not bloom. (5)

Here, Neal is describing a similar temporal discontinuity that is evident in personal experiences of trauma, as described by Caruth, Forter, and others. The image of flowers, said to relieve trauma victims by providing a sense of growth, is

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\(^{16}\) A note on the limitations of my use of the term ‘trauma’: trauma studies primarily examines textual representations of the impact of an event from the past on its sufferer in the present. This is a useful methodological basis for this first chapter, as my argument here is that WWII represented a ‘reopening’ of the traumatic wounds of WWI, and that this effect is represented the time travel fiction of the period. Yet, following this chapter I refer to the socio-historical upheaval I examine as ‘crises’. This divergence is partially due to trauma’s temporality. Blake and Lowenstein’s studies of trauma and genre address films that were made after the traumatic event to which they apparently respond, not contemporary with its occurrence. My argument, primarily, involves texts that were produced at, or very close to, the time of the upheaval they allegorise. As such, trauma becomes a less useful methodological tool as my thesis moves forward, yet the approach of Lowenstein and Blake remains central to my argument.
rendered stagnant, effectively ‘freezing’ time. Similarly, the sun is the basis of our attempts to measure and quantify time; from it we draw the length of a days and years. During experiences of cultural trauma the sun metaphorically does not shine and thus time is again effectively frozen in place. Neal goes on to argue that during moments of national trauma “our engagement in a continuous flow of events has become problematic” (12). Once more, as with victims of personal trauma, cultural trauma interrupts linear temporal progression, or the ‘continuous flow’ of events. With the traumatic event intruding upon the present, a sense of repetition is just as central to studies of cultural trauma as it is to personal trauma. As mentioned earlier, since Freud investigated the “insistent return” of traumatic dreams, trauma theorists have examined the repeated intrusions of the traumatic event into the psyche of the trauma victim (Caruth “Trauma”: 5; Forter; Hartman “On Traumatic Knowledge”; Whitehead). After traumatic events that occur on a collective or national scale, the “tragic occurrence is replayed over and over in our minds as we seek to understand what has happened and why it happened” (Neal 12). It is this time-centric feature of trauma—the insistent incursion and return of the traumatic event—that time-travel and time-centred SF most prominently allegorises. As I will demonstrate in later sections of the chapter, time-centred SF also reproduces the sense of inevitability that is tied to these ‘incursions’. In the final section of the chapter, I examine these narratives’ reproduction of a sense of ‘temporal isolation’—a term I’m using to describe the combination of forever-recurring past events and an inevitable future experienced by a trauma survivor. The cultural trauma under examination is that experienced in the US during the early years of the Second World War, before and shortly after America’s entry into the conflict. As I will demonstrate, this trauma involved a sense that war had ‘returned’, and would inevitably return again. This sense of recurrent destruction problematises the notion of linear time, and is a feature that time travel fiction is uniquely placed to reproduce.

With cultural trauma temporally compromised, it follows that it would be best represented by a literary genre that involves the manipulation of time. This notion aligns with the view of Caruth who states that trauma defies traditional “narrative formulation”. Similarly, Whitehead argues that the reproduction of trauma “requires a literary form which departs from conventional linear sequence.”
(6). While she suggests ghost stories as a prototypical ‘trauma fiction’, with its ability to depict a past event intruding on the present, time travel is arguably a more useful device to express the nonlinearity and temporal disturbances of trauma. Lowenstein and Blake, as I have noted, point to discourses of horror used in film as representational of historical trauma. Time travel fiction functions in an analogous manner to the function of horror for Lowenstein and Blake. The generic conventions examined here, and particularly their representations of time, parallel the temporalities of the cultural trauma that surrounded the stories’ production. To support this notion, it’s important to examine these stories “in terms of their points of correspondence” with the temporalities of trauma (Lowenstein 6). My aim in the following sections—focusing on the stories *Exiles of Time*, ‘Nightfall’, and ‘Recruiting Station’, and the key temporalities that surrounded America’s traumatic reception of World War Two—17—is to explicate such ‘points of correspondence’. Beginning with the persistent return of the traumatic event, I then move on to the inevitability and powerlessness associated with trauma, and finally the sense of temporal isolation that these two temporalities can create.

**Recurring destruction**

The key temporality experienced by Americans at the onset of World War Two was the apparent return of the traumatic event that was the Great War. Memories of the Great War, along with parallels between the two conflicts, meant that the early years of World War Two represented the traumatic return of global war. The temporal symptoms of trauma, such as the ‘insistent return’ of a traumatic memory, seemed to be literalised when ‘another’ European war threatened peacetime in the US (Freud). In 1941 the United States was marked by “widespread disillusionment over the outcomes of World War I” (Neal 64). The “mental anguish” and “vivid” memories of trench warfare, says Neal, led many Americans to “[resolve] that never again should the United States become involved in

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17 The ‘traumatic’ reception of the onset of the war was not universal. Key to my argument is the notion that World War Two represented, for many in the US, the literal ‘return’ of the First World War, and a sense of powerlessness and inevitability. While opinion polls and other evidence indicate that this notion was a pervasive cultural concern at the time, it was not a universal one.
“someone else’s war” (64). These traumatic memories of the Great War accompanied parallels that associated them with new conflict. For example, Clifford notes that many “isolationists, believed that FDR, ‘with diabolical cleverness,’ was using the preparedness issue to ‘create terrible public clamor and hysteria’ so as to ‘follow the line followed by us in 1917, which took us into the European conflict.” (11). Therefore, the ‘same’ tactics were being used to bring America into an analogous conflict, one that still caused ‘mental anguish’ amongst much of the population. On the opposite side of the political aisle, another prominent parallel between the two conflicts emerged. The initial planning stages of the draft in 1940 repeated exactly the beginnings of WW1’s draft. Grenville Clark first proposed a peacetime draft at New York’s Harvard Club in 1940:

The men who listened to him that evening might well have fancied the years turned back to 1915, when, nearly twenty-five years to the day, they had gathered angrily at the Harvard Club to talk over the sinking of the Lusitania. The parallels were striking. Americans in 1915, though shocked by the brutal consequences of German submarine warfare, had also resisted any counsels for war. In 1915, as in 1940, there had only been a slow awakening to the need for arming, a belated realization that the European war did have a distinct importance for the United States. In both cases, an interventionist minority tried vainly to persuade its fellow citizens of threats to American interests and ideals, only to have the enemy accomplish, on his own initiative, what persuasion had largely failed to do. (Clifford and Spencer 14-15)

Again here the sense that the new conflict was the ‘return’ of a past traumatic event is prominent. Along with the parallels that surrounded the draft, the build up towards war strengthened this connection between the two conflicts. Where Germany’s use of U-boats to launch surprise attacks on the Lusitania and US merchant ships was a key prompt for America’s entry into WW1, it would be the surprise attack at Pearl Harbor that led the country into ‘another European war’. These connections added weight to the notion that the trauma of the Great War was encroaching on the collective present. As such, it seemed that a destructive cycle was beginning. The ‘war to end all wars’ seemed to be literally and empirically returning once more, bringing with it traumatic memory’s dark “fears and anxieties” (Neal 5).

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18 Polling showed that “in early March 1940 ... 96.4 percent of Americans opposed going to war against Germany.” (Clifford and Spencer 8)
Trauma theorists from Freud onwards have argued that past traumatic events return to the present as part of a repetitive, destructive cycle, and such a cycle was a part of the wartime zeitgeist. Outlining Freud’s description of traumatic dreams, Caruth states that such dreams are:

...purely and inexplicably, the literal return of the event against the will of the one it inhabits. Indeed, modern analysts as well have remarked on the surprising *literality* and nonsymbolic nature of traumatic dreams and flashbacks, which resist cure to the extent that they remain, precisely, literal. It is this literality and its insistent return which thus constitutes trauma and points toward its enigmatic core: the delay or incompletion in knowing, or even in seeing, an overwhelming occurrence that then remains, in its insistent return, absolutely true to the event. (“Trauma” 5)

This assessment has temporally significant elements that seemed to be at play during the onset of the Second World War. With the parallels outlined above, it initially seemed that the conflict was a “literal return” of the Great War, an “insistent return, absolutely true to the event” that was beyond the control of the ‘victims’. Thus, World War Two represented the ‘coming to life’ of such traumatic dreams; the “return” of warfare was empirical, rather than being played out in the minds of those with traumatic memories of The Great War. As such intrusions of trauma return again and again in sufferers, it follows that the traumatic ‘dream’ of World War Two could be seen as part of a cycle of perpetual conflict. As Neal notes, traumatic events are “replayed over and over in our minds”, and the literal return of global war arguably embodied similar cyclical connotations (12). The parallels between the two conflicts literalised the demarcated time associated with trauma, and the ‘perpetual’ return of the traumatic event. However, a key indicator that such a traumatic symptom of cyclical destruction was experienced by US culture at large was the volume of ‘destructive cycle’ narratives that were published in the period’s SF publications.

A conspicuous number of loop-based time travel and cyclical time novels and stories were published in the first few years of World War Two. 19 This

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19 There are twice as many SF stories with the tag ‘time travel’, as listed on the Internet Science Fiction Database (isfdb.org), that were published in the years 1939-1941 than were published in the three preceding years (1936-1938). This catalogue is far from definitive—it excludes four prominent time-travel or time-centric narratives (out of six published stories) from the September 1941 issue of *Astounding* alone. However, it is a trend that points to a surge in the publication of time travel narratives following the onset of the war.
repeated reproduction of recurring destruction illustrates that such temporalities of cultural trauma were a significant cultural preoccupation during the period. Reflecting the returning cultural trauma of global conflict, these stories’ themes include: a cyclical model of time—a cycle punctuated by recurring destruction—presented in *Exiles of Time* (1940) and Alfred Bester’s ‘Adam and No Eve’ (September 1941); the perpetual, cyclical apocalypse of Asimov’s ‘Nightfall’ (September 1941); and the time-loop-as-punishment story ‘My Name is Legion’, by Lester del Ray (June 1942). This trend of time loop, cyclical time, and cyclical apocalypse stories continued following the end of the war. A prominent example of a late-war cyclical destruction narrative was Richard Shaver’s ‘I Remember Lemuria’ (1945) series, which prompted significant attention in the pages of *Amazing Stories* magazine. Later tales such as ‘Time Trap’ (1948) by Charles L. Harness, Fredric Brown’s ‘Letter to a Phoenix’ (1949), Asimov’s ‘Day of the Hunters’ (1950), and Arthur C. Clarke’s ‘Time’s Arrow’ (1950) evoked the same themes of cyclical or ‘looping’ destruction, death, or conflict. This theme was also evident in SF fandom’s self-penned stories, such as ‘Paradox of the Time Circle’ (1947) by Rex E. Ward in his self-published fanzine *Time Travel Tales*. The prominence of this new motif at a period marked by the return of world-wide warfare is significant, as it reflects the 1940s preoccupation with the “inevitable”, return of global conflict as described by Neal (64). These cyclical time models and depictions of time travel analogue cultural trauma’s tendency to lead to invasive repetition or recollection of the traumatic event, a loss of agency, and temporal isolation within those who experience it. *Exiles of Time*, ‘Nightfall’, and ‘Recruiting Station’ all reproduce these temporal symptoms of cultural trauma: seemingly perpetual, world-threatening warfare; inevitability; and the sense of ‘temporal isolation’ that they create.

The connections between the stories that I examine in this chapter and the ‘recurring doom’ of the cultural trauma associated with the War are not

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20 Heinlein’s time loop narratives, ‘By His Bootstraps’ (1941) and ‘All-You-Zombies’ (1959), also feature prominent time loops, but reflect a sense of personal crisis rather than cultural trauma. See chapter two of this thesis for an examination of ‘By His Bootstraps’.

21 This fanzine ran for two issues comprising solely time-travel themed fiction, before an editorial decision to include “absolutely no fiction or verse” and to instead become a place for “heated discussion on various concepts of time and its paradoxes” in issue three (Ward 1). It included contributions and letters from SF identities including Forrest J. Ackerman and Lin Carter.
immediately apparent. With the late 1930s-early 40s science-fiction community a ‘think tank’ for social and technological speculation (Fleming), it is natural that SF of the period would engage with the notion of the cyclical, perpetual, traumatic return of destruction. However, *Exiles of Time* and ‘Nightfall’ particularly contain no explicit war references, and no overt depictions of traumatic symptoms; instead, time loops and celestial events are most prominently depicted as the destructive force. However, despite the non-representation of warfare and trauma in these two stories, their use of time is an example of the subgenre’s allegorical mode engaging with a prominent cultural phenomenon. The depiction of time in these stories is not an example of the “self-conscious distantiation of modernism” (Lowenstein 4) nor Burling’s ‘playful’ temporal dislocation form of time travel. Instead, the use of time loops in these tales reflects the concerns of the zeitgeist. They are just two of the volumes of stories depicting cyclical destruction to have emerged during the period. This suggests a cultural preoccupation with traumatic cycles of destruction and the image of perpetually recurring warfare, one that is reflected in these fictions’ depictions of time.

The looping crisis stories of the early 1940s, including *Exiles of Time*, reproduced the trauma of what seemed to be perpetually recurring warfare. In Bond’s novel, a group of time travellers work to prevent a comet from causing a cataclysm in what they believe to be the distant past. They fail, despite all efforts, and a predetermined universe is revealed; history “is a closed book; its word is inflexible” (Bond ch. 18). However, unlike the linear narrative of a book, in Bond’s universe “the history of mankind is repetitive” (ch. 19). In *Exiles of Time* all of history comprised a time loop. Time is a “great circle, endlessly revolving” and marked by twin, recurring apocalypses: a “vicious cycle in which our race is trapped” (Bond ch. 19). The world is destroyed twice, once by a comet scorching the Earth in around 30,000 BC and again as a result of humankind’s “terrible weapons of destruction” in “the Twentieth Century” (Bond ch. 13). Therefore, the story presents twentieth-century warfare and the comet as ‘twin dooms’, and thus marks contemporary war with the destructive connotations of a comet: a celestial phenomenon defined by a recurring, prewritten orbit, relentless and unstoppable.

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22 The ‘cosmic’ origin of destruction in these narratives is significant; as I’ll illustrate in the following section it represents a distinct sense of inevitability and powerlessness, which represent a separate temporality of trauma.
and with untold destructive power. When this image is combined with the nature of time in the novel, clearly defined as a repeating ‘circle’, a cycle punctuated by inevitable, recurring destruction, an allegorical representation of the ‘insistent return’ of traumatic events emerges. As such, Bond’s tale reflects contemporary cultural trauma relating to the coming war. World War II prompted memories and reflections of the supposed ‘war to end all wars’ (Neal). The “inevitable” crisis of another war, one that threatened “Armageddon” (Neal 64; Washington Jr 4), is reproduced in the story’s wholly destructive loop. It is the novel’s use of time travel that highlights this notion of recurring destruction. It provides the protagonists with the perspective needed to surmise both the cyclical nature of time (and destruction) in their fictional universe. The narrative device allows Bond to depict an empirical cycle of insistent, repeating destruction, mirroring the temporality of contemporary cultural trauma; world-shattering destruction will return again and again, much like traumatic memories’ “literality and insistent return” (Caruth “Trauma” 5). As such, time travel in the novel is a combination of Burling’s ‘temporal dislocation’ and ‘temporal contrast’ forms. It provides a meditation on the nature of time and its paradoxes, but this mediation also allegorises aspects of the trauma surrounding its composition. Both the protagonists of the novel and the contemporary American public faced a returning, destructive crisis that mirrored a past trauma. This is the allegorical mode of time travel fiction: its paradoxes and philosophical preoccupations often belie a reflection of contemporary fears and anxieties.

A similar representation of what seemed to be a repeating crisis of impending war facing early 1940s USA is evident in Asimov’s classic short story ‘Nightfall’ (1941). ‘Nightfall’ is not a time travel story, but its model of cyclical apocalypse provides another example of the allegorical mode of time models in time travel fiction. The story’s prominent ‘cycle of doom’ is also further evidence of the motif as a cultural preoccupation in the early 1940s. As in Exiles of Time, ‘Nightfall’s returning cataclysm reproduces anxiety regarding the coming World War. This apparently literal return of the traumatic memory of the Great War draws its aura of doom by presenting an inevitable crisis that is said to have engulfed humanity periodically throughout history. Theorists such as Elms have argued that the cyclical time model in ‘Nightfall’ is an “ironic answer” to
Emerson’s famous rhetorical question regarding the periodic appearance of the stars\(^\text{23}\) (Elms 133); connections between the destruction of Lagash in ‘Nightfall’ and the spread of war across Europe have remained unexamined. However, considering the context within which the story was produced, the destructive cycle in the narrative can be considered to be representative of a contemporary preoccupation with the incessant return of the trauma of war. Lagash is a world with six suns, one that never sees darkness. Every 2,049 years, an eclipse occurs and night falls over the planet. Upon nightfall, the sublime image of the night sky, with its thirty thousand visible stars, expands and shatters the population’s perception of the size of the universe, destroying their minds and plunging the world into madness. The inhabitants of Lagash then raze their entire planet, with the few survivors left to rebuild, until the return of the eclipse renews the cycle of madness and destruction 2,049 years later. It is the description of the eclipse, as a shadow creeping across the face of Beta, the last remaining sun in the sky, which parallels the spectre of Nazism spreading across Europe. Asimov describes the creeping eclipse as an “encroaching blackness”, a spreading shadow that threatens to engulf the “light of the world” and leave “only stark, universal fear” (“Nightfall” 78, 92). This imagery foreshadows propagandistic newsreel representations of the advancement of the Axis forces across Europe, such as the famous creeping, shadowy arrows covering Europe in the film *The Big Lie* (1951). Descriptions such as “the last ruby-red drop of flame, flicker(ing) feebly over...humanity” (“Nightfall” 92) can be seen to represent fears that freedom was close to being ‘snuffed out’. As such, the fictional cycle of destruction is linked to the coming war, and the story’s time model becomes a reproduction of the temporality of cultural trauma: the incessant intrusion of the traumatic event into the present. As in *Exiles of Time*, it is the generic features of time travel fiction that allow for this allegorical mode, despite Asimov’s story not depicting any characters journeying in time. The revelations regarding the destructive cycle, communicated by the astronomers in the story, provide both the protagonists and the reader with the same insights into the narrative world’s model of time as is usually provided by actual time travel. The dual focus of the story’s action, on both the coming doom facing Lagash and the destruction that came before, enhances the sense of pointlessness and regret at

\(^{23}\) “If the stars should appear one night in a thousand years, how would men believe and adore, and preserve for many generations the remembrance of the city of God ... (?)” (Emerson)
the protagonists’ current situation. This motif recalls the remembrance of the ‘trench warfare’ of WWI, as outlined by Neal. As he and Clifford and Spencer suggest, these memories of the previous war heightened (the country’s 96.4%) opposition to the coming conflict, but didn’t dull its apparent inevitability\(^\text{24}\) (Clifford and Spencer 8). In ‘Nightfall’, the revelation of the loop of destruction similarly prompts opposition from characters such as the cultist Latimer, but also marks the coming conflict as inescapable. Thus, ‘Nightfall’ is another example of ‘recurring doom’ SF allegorising the trauma of the war via the depiction of a specific model of time. It is the cyclical model of time that Asimov presents that marks a key point of intersection between the text and contemporary anxieties surrounding the inevitable return of global conflict. This temporality of cultural trauma, the incessant return of the traumatic event, was also reproduced in non-loop\(^\text{25}\) SF of the period, including A.E. van Vogt’s ‘Recruiting Station’ (1942).

The notion that warfare is a trauma that repeatedly intrudes on the present is also analogised in the novella ‘Recruiting Station’. Written as the US was entering World War Two, the story has clear parallels with conscription. It depicts a recruiting station in 1942 that is used as ‘bait’ for potential soldiers. The men who enter the station are shipped to the far future, where their personalities are wiped. The recruits are then sent, seemingly pointlessly, to their deaths in an ongoing war. Van Vogt’s narrative also contains numerous allusions to the contemporary cultural trauma of recurrent warfare. The protagonist Garson, having been transported to the battlefront, recognises that in this unimaginably far away future, the “same old story” is being enacted in the form of war (van Vogt). Unsurprised that planet-wide warfare between factions of humans “seems to have happened again”, he says that the cycle of fighting again and again is “human nature”. These allusions enhance the story’s connection to the cultural context to which they respond, and represent the analogic model of SF described by Suvin. Yet, the story also contains an allegorical reproduction of this symptom of trauma in the model of time it uses to justify time travel. In this narrative it is

\[^{24}\] "Five out of eight Americans expected the country to go to war eventually [...]" (Clifford and Spencer 13)

\[^{25}\] I include analysis of this ‘non-loop’ story in this chapter for one key reason, which is not its explicit connection to the draft and the war. The story’s depiction of time simulates the effect of a time loop, with its focus on each moment being the repetition of “the same pattern” that came before (van Vogt).
not a time loop or a cycle that reproduces the cultural trauma of returning warfare. Time travel in ‘Recruiting Station’ is primarily depicted as a doorway between the present and the far future, with little focus on paradox. However, the nature of time in this fictional universe is outlined in detail, and it is this description that connects time to trauma’s insistent return. Garson’s letter to Norma recounts the villainous Dr Lell’s description of time. For Dr. Lell, a visitor from the future:

> Time ... is the all, the only reality. Every unfolding instant the Earth and its life, the universe and all its galaxies are re-created by the titanic energy that is time. And always it is essentially the same pattern that is re-formed, because that is the easiest course”.
> (van Vogt)

Time, Lell claims, involves the continued recreation of the universe. Each moment of time, each microsecond, sees the creation of a new universe that resembles the previous present moment almost exactly. The minute variations that exist in the new universe are what create humanity’s perception of the passage of time, of change. As such, the future war that hosts much of the story’s action is reproduced almost exactly “[s]ix hundred billion [times] every minute”. By presenting time in this way, the story recreates the sense of an endless cycle of war that came with the traumatic events of the early 1940s. It provides a literalised reproduction of Neal’s assertion that a culture in the midst of trauma sees the event “replayed over and over in our minds” (12). The trauma of returning war, seemingly never-ending, is analogised without the depiction of time loops: here time itself is the allegorical mode, a cycle, repeating billions of times each and every minute. Every minute sees an ‘insistent return’ of events, an image of time which is highlighted by van Vogt’s use of repetition and rhythm when describing the soldiers lining up to fight (“tramp, tramp”, “on and on”, and “forty feet” are all repeated). The nature of time in this universe means that these soldiers are lining up again and again to fight in “the deadly, mechanical routine” of warfare: a war far removed from everyday USA, one that requires the drafting of countless “dispirited-looking” men (van Vogt). As such, the story presents the senseless destruction of a far-off war through the image of a repetitive cycle. Both the narrative’s model of time, along with its depiction of the repetitive nature of warfare, reproduce the effect of a repeating, intrusive trauma.
This is the allegorical mode of time travel and time-centred SF. The models of time and time travel depicted by these authors involve cyclical time, cycles of destruction, and a suggestion that periods of time consist of the near-endless, near-exact recreation of the same instant. These depictions of loops and time cycles are not just narrative and philosophical experimentation, as others, including Burling and Slusser and Chatelain have claimed. As I’ve demonstrated, these generic features serve as allegories for aspects of contemporary preoccupations. In this case, the onset of the Second World War seemed, for many in the US, like the literal return of the previous war. This feeling of repetition was a symptom of cultural trauma, essentially a ‘waking’ traumatic dream embodying the insistent, “literal” return of the traumatic event described by Freud and others. This symptom played out in time travel and time-centred SF including *Exiles of Time*, ‘Nightfall’, and ‘Recruiting Station’. The traumatic intrusions that these narratives reproduce are uncontrollable and seemingly inevitable for those who experience them. This powerlessness and inevitability is another time-centric aspect of trauma, one that the same stories allegorise through time models and time travel.

**Inevitability**

Another temporality of cultural trauma that was prominent during the formative years of World War Two, and one that wartime time travel fiction’s allegorical mode reproduced, is a sense of ‘inevitability’. By inevitability I mean a lack of agency for the trauma victim, a powerlessness that marks the intrusion and influence of the traumatic event as unavoidable. Such a definition skirts the borders of determinism, which I will touch on here and discuss at length in the following chapter. Along with the repeated return of the traumatic event, which was literalised by the return of global warfare in the 1940s, this temporality of trauma was allegorised in *Exiles of Time* and ‘Nightfall’. Freud’s assessment of traumatic dreams is marked by a lack of agency, and thus inevitability regarding the return of the traumatic event; such dreams intrude “against the will” of the trauma sufferer (Freud). In Caruth’s prominent studies of trauma, explicit examinations of its deterministic, agency-defying elements are primarily
peripheral. However, her descriptions still connote a deep sense of inevitability on the part of the victim. Caruth discusses the trauma victim’s inability to consciously “recall and control” the images associated with the traumatic event they have experienced (Caruth “Recapturing” 151). There is an implied lack of agency and helplessness in such an absence of control. This image of a passive, agency-less victim is enhanced when the traumatic event is described as determining the actions and thoughts of the sufferer. Caruth argues that the traumatic event is “not available to consciousness until it imposes itself again, repeatedly, in the nightmares and repetitive actions of the survivor” (Caruth Unclaimed 4). What’s most striking about this description of trauma is the passivity of the subject. The dreams and actions of the trauma victim are controlled by a marauding event from past ‘imposing itself’ on the present. As such, the inevitability of trauma is a temporality; with a lack of control over her/his actions, the trauma victim is following a ‘script’ composed by the traumatic event, implying a lack of agency and a ‘prewritten’ impression of time.

Here, trauma is the dominating force that has written the future of the subject. Similarly Judith Herman argues that trauma “robs the victim of a sense of power and control” (S145). Hartman reminds us to be wary of such homogenising or “monolithic” views, arguing that there is a tendency to neglect the “disparate” determinants of trauma, which can include “the variability of human sensitiveness, and the diversity of cultural contexts influencing what is traumatic” (Hartman “Trauma” 260). However, he too presents—without criticism—a description of trauma, drawn from Freud, which heavily implies powerlessness on the part of the victim:

Trauma results from an experience that lodges in a person without having been experienced, that is, without having fully passed into consciousness or stayed there. It is a ‘foreign body’ (Fremdkörper) in the psyche, or as Ruth Klüger writes of the memory of Auschwitz, an inoperable bullet. (257)

Here, the traumatic event is again dominant as it is the active force that “lodges” itself in the passive subject. The lack of control or power of the trauma victim is amplified by the borrowed analogy of a bullet; a shooting victim is one whose

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26 The most significant link between ‘an inevitable future’ and time are the concept’s connections to determinism and the ‘block’ model of the universe. This connection is discussed at length in the following chapter.
future is defined by a past event that was outside their control. Moreover, the fact that the wound from this bullet is “inoperable” further removes power from the trauma victim, making their continued suffering seem to be inevitable—again implying a ‘fixed’ sense of time for the victim. A sense of powerlessness and ‘waiting’ for the inevitable, analogous to this temporality of cultural trauma, is similarly evident in American responses to WW2.

The sense of inevitability and powerlessness that accompanied the onset of the war was akin to a symptom of cultural trauma. There was a prominent fear that war was coming, whether the US wanted it or not:

...the Gallup polls of early June [1940], (indicated that) fully 65 percent of the American populace believed that if Britain and France were to surrender, Germany would eventually attack the United States. Five out of eight Americans expected the country to go to war eventually. (Clifford 13)

War was coming; it seemed to be unavoidable. Despite this sense of inevitability, Americans simultaneously expressed a lack of agency regarding their country’s ability to affect this imposing future: in 1940 “…only one citizen in fourteen advocated that war be declared against Hitler” (13). Whether due to fear, or a desire to avoid what seemed to be unavoidable, such opposition certainly belies the notion that the US had the power to swiftly and positively affect the outcome of the conflict. As such, the war seemed like a future inevitability, and a source of powerlessness in the present: symptoms of cultural trauma that are both explicitly linked to time, and prominently reproduced in the wartime stories under examination.

Exiles of Time’s use of time travel allegorises the inevitability imbedded in US culture at the onset of the Second World War. In the novel, the deterministic nature of the twin conflagrations, like the insistent return of traumatic events, marks them as inevitable. As Hartman, Herman and others describe, the trauma victim is powerless to halt the intrusions of traumatic recollection. They exist in what amounts to a deterministic system defined and punctuated by the past traumatic event. In Exiles of Time the trauma of warfare and destruction is similarly deterministic. Akin to attitudes toward the coming war with Hitler, the destructive war that will occur in the novel’s “twentieth century” is inevitable. It is etched in time; humanity is fated to destroy itself again and again. The prospect of
global warfare is described by the protagonist, the contemporary archaeologist Lance Vidor, as an “ever-present threat” (Bond ch. 13). This image of a crisis that is ‘ever-present’ takes on a more literal meaning in a time travel story involving a “vicious cycle” that has “trapped” humankind (Bond ch. 19). For time travel to exist as a physical possibility, time must exist a priori; Lance bemoans that the era of impending war always exists, like a chapter of a book, whether one is currently ‘reading’ it or not. Both crises are thus inescapable, with the protagonists powerless to stop their ceaseless incursions. Once again this depiction of time travel in the novel, and the description of time this travelling prompts, serves an allegorical purpose. It reproduces contemporary tensions, in this case a temporal symptom of trauma. The ceaseless, unavoidable “vicious cycle” of destruction in the novel recalls the mood of inevitability regarding the war experienced by a large proportion of the US population in 1940, the year of its publication.

Asimov’s ‘Nightfall’ also reproduces the sense of inevitability that accompanied the cultural trauma of WW2. As in *Exiles in Time*, the “long night” of doom that comes to Lagash is unavoidable and celestially derived (“Nightfall” 95). While in this case the prompt for destruction is an eclipse rather than a comet, both events hold the power of vast forces far beyond human control, a cyclical or returning nature, and inevitability. Both comets and eclipses follow ever-repeating cycles, and belong to a domain far beyond the power of humanity. They will return, inevitably, and in both stories, generic features highlight this inevitability. While *Exiles in Time* used time travel for this allegorical purpose, to depict a solid, unchanging cycle of time, ‘Nightfall’ focuses on revelations about the distant past to produce the same effect. The cycle of destruction is shown to be inevitable as the story’s protagonists reveal the ‘truth’ about ancient Lagash in a very firm, direct manner; destruction has been repeating for countless cycles, and it will continue: being celestial in origin, no one can stop an eclipse. These revelations regarding time have the same narrative impact as time travel in *Exiles in Time*, with the unavoidability of coming destruction highlighted. As such, the text reproduces the same temporally focused elements that were prominent in the cultural psyche at the time of the story’s composition. For most in the US, war’s return, and the destruction that it connoted, seemed inevitable (Clifford 13). While not time travel, the narrative is a clear example of what Burling calls ‘temporal
dislocation: its revelation has heady philosophical implications, which could be suggested to be the story’s only use. For Ketterer, this is would be an example of the ‘apocalyptic imagination’ of SF. It also recalls Suvin’s ‘novum’, which I discuss in depth in chapter 3. However, the effect here is not only ludic, as Burling may attest; the parallels between the implications of the story’s cyclical model of time and traumatic symptoms evident in US culture highlight its allegorical mode.

In the following section I conclude this examination of cultural trauma and SF’s role in allegorising its temporalities. I do so by elucidating what I consider to be the ‘ultimate’ temporality of cultural trauma, a symptom I’m calling ‘temporal isolation’. This is a sense of being isolated in a present moment that is dictated by an intrusive, untouchable past, while facing an inevitable, predetermined future. It is a symptom of trauma that is described by theorists including Van der Kolk and Van der Hart, and Caruth, though not using this term. It is also a temporality that is analogised in the three stories under examination in this chapter. ‘Temporal isolation’ is a significant feature of my argument in the following chapters, and trauma theory, with its focus on an intrusive past and an inevitable future, provides a useful theoretical basis its definition. This is another reason for beginning this thesis with a focus on cultural trauma, before moving on to a generalised sense of ‘crisis’ in the following chapter.

**Temporal isolation**

Temporal isolation is a symptom of trauma that can be considered a consequence of the two temporalities examined so far in this chapter. The idea that the future is inevitable is combined with the ever-returning traumatic event to highlight a sense that the subject is ‘isolated’ in a powerless present moment. This temporality is reproduced in ‘Recruiting Station’ s description of extreme causality. As I discussed earlier in this chapter, the narrative depicts the present moment as a near-perfect reproduction of the (immediate) past. As such, each present moment experienced by the characters is defined by the insistent return of the past, as for trauma victims. In combination with the intrusive past, the future is inevitable and predetermined, as ‘proven’ by the time travelling of Dr Lell and his
agents. This amounts to ‘temporal isolation’, which has been similarly described by trauma theorists:

As the trauma is fixed at a certain moment in a person’s life, people live out their existences in two different stages of the life cycle, the traumatic past, and the bleached present. The traumatized, fixated, inflexible part of the personality has stopped developing... (Van der Kolk and Van der Hart 177)

Here trauma is described as the conflation of the past event and the present, but as Caruth argues there remains an “impossibility” of truly knowing the traumatic event (“Trauma” 10). As such the “traumatic past” that intrudes and becomes ‘simultaneous’ with the present is a representation; the actual past remains inaccessible and unknowable (Van der Kolk and Van der Hart: 177). This is commensurate with Dr Lell’s description of the present as the reformation of “essentially the same pattern” that existed in the past (van Vogt). The impact of trauma’s incursion into the present is to create an analogue of the past, a repetition that will inevitably continue. Thus, all the future holds is the continued replication of this ‘same pattern’, denying the possibility of change, and therefore agency, in the future. The terms used by Van der Kolk and Van der Hart to describe the ‘bleached present’ of the trauma victim create a similar image of stagnation: “fixated”, “inflexible”, and ‘lacking development’. There is no ‘movement’ here, and no chance for change. With change being the altering of a state with respect to time, this stagnant image amounts to a denial of any power to affect the future; the trauma victim is ‘fixed’ in time. This completes the picture of temporal isolation, with the subject isolated in the present by both their powerlessness regarding the future and their inability to access the past that resulted in their present.

The image of temporal isolation is enhanced by the inaccessibility of the past for trauma victims. As with the ‘pattern’ of the past that is ‘essentially’ reproduced to form the present in ‘Recruiting Station’, for trauma victims the actual past event is inaccessible and unknowable, while directly affecting the present. Despite Freud’s insistence that traumatic dreams represent the ‘literal’ return of the traumatic past, these dreams remain a representation. The empirical event only exists in the past, and is unreachable. The ‘unknowable’ nature of the traumatic event is highlighted by Caruth:
...trauma is not experienced as a mere repression or defence but as a temporal delay that carries the individual beyond the shock of the first moment. The trauma is a repeated suffering of the event, but it is also a continual leaving of its site. The traumatic reexperiencing of the event thus carries with it what Dori Laub calls the “collapse of witnessing,” the impossibility of knowing that first constituted it. And by carrying that impossibility of knowing out of the empirical event itself, trauma opens up and challenges us to a new kind of listening, the witnessing, precisely, of impossibility. (“Trauma” 10)

Thus, according to Caruth, trauma is not integrated into the consciousness when the event first occurs. Only later does it surface and become knowable for the victim. However, as a result of this ‘temporal delay’, the victim cannot access the actual site of the event; it exists only in the past and thus cannot be experienced directly. This notion heightens the temporally isolating effect of trauma, as the past is reproduced in the present moment, and informs the present, but remains out of reach. As such, we have an inaccessible past that paradoxically insistently returns to define the present, and a stagnant inability to affect the future, which remains inevitable. Forter’s ‘retrodetermination’ has similar implications:

... systems of domination can inflict themselves on the psyche as traumatogenic potentialities. These potentialities are retrodetermined as traumas ... if and when a given society reinforces their traumatic character, encouraging the congealing of identities around those traumatogenic events. (280)

Here the past trauma remains a ‘potentiality’, and thus similarly inaccessible, until it imposes itself on the ‘identity’ of a society. As with the assessments of Caruth and Van der Kolk and Van der Hart regarding trauma’s impact, the result for Forter is a ‘congealing of identities’—or stagnation in the present—again implying a denial of change in the future. This is ‘temporal isolation’, a symptom of trauma that is allegorised in the time-centred SF of the early 1940s. Its reproduction in multiple narratives published at the same time suggests a cultural preoccupation with this symptom of trauma (and ‘crisis’ in general) —a lack of agency defined by the ‘traumatogenic’ event of the past (the Great War) and its ‘reinforcement’ in the present (the onset of World War Two). While time travel in SF allows protagonists to visit such an ‘inaccessible’ past, stories such as *Exiles of Time* and
'Nightfall' are dominated by a strict causality. The incursion into the past in *Exiles of Time*, and the proposed model of time in 'Nightfall', magnify the impression that the present is defined completely by a destructive event in the past. Such an allegorical use of time models is an unexamined role of time-centric pulp SF. These fictions have long been dismissed by critics such as Jameson, who claims these “sub-literary” texts “cannot be read as Literature” and are “unassimilable to high culture” (*Archaeologies* 316). I disagree, as these pulp short stories’ allegorical function marks them, like many ‘significant’ literary works, as important sites of ‘working through’ contemporary crises. Their allegorical use of time and time travel is able to reproduce the anxieties surrounding such crises, as argued here, and to simulate processes that can alleviate said anxieties, as I shall argue in the second half of my thesis.

*Exiles of Time’s* depiction of time travel reproduces temporal isolation—the notion that the present is dominated by the past, and that the future is unchangeable. The story conflates the twentieth-century USA with the lost civilisation Mu, with the two shown to be “high ... culture-peaks” of the same civilisation, separated on the wheel of time by dual conflagration (Bond ch. 13). This pairing elevates the US to the advanced cultural and technological standing of the legendary lost civilisation, presenting twentieth-century America as the peak of human achievement. Not only does the time loop express the sense of unavoidable, cyclical destruction that accompanied the onset of World War II, but it also expresses the fear that only degeneration awaits humankind. The time travellers discover that war in their time leads only to “an age of bestiality” that will ensue for tens of thousands of years (Bond ch. 13). With such debasement lying both ahead and behind on the wheel of time, the mid-twentieth century is effectively a temporal island, an isolated peak of civilisation. While humanity will rise again in the form of Mu, it is destroyed before reaching greater heights. Both the past traumatic event, and the coming destruction in the twentieth century are empirically accessible to the time travellers, yet are shown to be completely fixed.

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27 Other stories from the period that involve the past dominating the present, despite the existence of time travel include Heinlein’s ’By His Bootstraps’ (1941), Lester del Ray’s ’My Name is Legion’ (1942), and Henry Kuttner’s (writing as Lewis Padgett) ’Time Locker’ (1943).

28 See Milner and Savage, page 32, for other dismissals of, or limitations to the examination of, pulp SF by critics such as Carl Freedman, Tom Moylan, and even Darko Suvin.
and unavoidable. This cycle of destruction, abjection, an attempt to rebuild, and another conflagration mirrors contemporary US history: the destruction of World War I, the following Great Depression, the beginnings of economic recovery under Franklin D. Roosevelt, and the onset of the Second World War. Such parallels again suggest that the novel’s depiction of time travel allegorically engages with contemporary cultural concerns. *Exiles of Time* also reproduces temporal isolation through time travel’s ability to transport its protagonists from one apocalypse to another. Though separated by over 30,000 years, Lance and his entourage experience the intrusion of past trauma—the fall of Mu—before returning to their own time to face the inevitable coming apocalypse of world-wide warfare. As such they exist in two places on the ‘wheel of time’, representing Van der Kolk and Van der Hart’s description of the isolating aspect of trauma: “people live out their existences in two different stages of the life cycle, the traumatic past, and the bleached present” (17). Thus, for the protagonists, the global trauma that they experience is both perpetual and unavoidable. Their experiences and return conflate the past trauma with the present, yet leave them powerless to change the future. With the cyclical model of time depicted in the novel, there is ‘no future’, no temporal continuity, only a journey from one traumatic event to another that is similarly “inevitable” (Neal 64).

‘Nightfall’s generic features and narrative focus also allegorises the temporal isolation of trauma. As is Asimov’s style in many of his short narratives, the action in ‘Nightfall’ takes place in a very short period of narrative time—a few hours—with revelations coming via dialogue, particularly summations and deductions by Chief Astronomer Aton 77. It is through this present-focussed, dialogue-driven narrative style that the philosophical implications of the story’s conceit are highlighted. In ‘Nightfall’, the revelations experienced by the characters involve the cycle of time, which has apparently continued for countless years. The isolated present moment of the narrative, the tension experienced by the characters, is completely informed by the cycle of destruction from the distant past. The narrative tension focuses on Aton 77’s efforts to prepare records for the people of “the next cycle”, abandoning hope for the present which, he says, “can go hang” (“Nightfall” 60). This hope for far-future generations demonstrates that the story avoids the depiction of a strictly deterministic looping of time. However,
the hopelessness associated with the ever-intruding trauma of destruction remains, as a result of the isolating narrative focus on the present. This hopeful future is a full cycle—249 years—away and, given that the reader is exposed to mere hours of time on Lagash, it remains amorphous and uncertain. In the interim, Lagash was to “[enter] a huge cave, so that all the suns disappeared, and there came total darkness all over the world”, which is portrayed as strictly inevitable (“Nightfall” 63, emphasis in original). During these few hours of turmoil depicted in the narrative, the immediate future remains certain and doomed, not hopeful. Nothing can stop the current threat of “the light of the world” being extinguished by the relentless, creeping “Cold and the Doom” that has returned to crush humanity. This aspect of the narrative allegorises the temporally isolating aspect of trauma, with the present informed by a destructive event in the past, and the future depicted as inevitable. Neal approaches a description of the temporal isolation of trauma:

While our language separates time into past, present, and future, our experiences tend to unify them as we reflect on the character of symbolic events. The realities of the past take on special meanings through our current perceptions of them, and the future becomes a mixture of present fears and aspirations. ... There were certain events that happened in the past, can still happen today, and can happen again in the future. The time dimension becomes blurred, a form of eternal dream time.... (212-13)

While Neal’s focus here is on television’s ability to depict past traumas, and the confused temporality that results, his description is a useful approximation of the temporal isolation reproduced in ‘Nightfall’. The story’s narrative structure highlights the same breakdown between past, present and immediate future as described by Neal. Only a few hours in ‘the present’ are depicted, but traumatic events in both the distant past and the distant future are “blurred” and ‘unified’ with the present. The ‘events that happened in the past’ are literally ‘happening today’, and will ‘happen again in the future’. This unification creates a sense of single, isolating, immanent crisis—the ever-returning eclipse and subsequent destruction—that is a product of that past: one that also exists in the inescapable

29 The role of television Neal examines recalls another SF subgenre, the 'time viewing' narrative. A number of these stories emerged in the 1950s to 70s, including Asimov’s 'The Dead Past' (1956), Dick’s ‘Paycheck’ (1953) and ‘The Minority Report’ (1956), Bob Shaw’s Other Days, Other Eyes (1972), and ‘I See You’ by Damon Knight (1976). A deleted chapter from this thesis examined the connection between these texts and the technology and atmosphere of Cold War surveillance in the US.
future. Therefore, this story’s ‘cyclical time’ narrative device structurally reproduces the temporally isolating effect of the traumatic impact of the Second World War.

‘Nightfall’’s model of cyclical time, along with the causal loops, recurring apocalypses, and ‘repeating’ present moments of *Exiles of Time* and ‘Recruiting Station’, are examples of time travel fiction’s allegorical mode. They reproduce a traumatic sense of repeating doom, inevitability, and the temporal isolation that can result from trauma. This sub-type of SF emerged and became prominent as the Second World War built momentum, at a time when these temporalities became embedded in US culture: when the trauma of war, recurring once again, resulted in “ordinary time seem(ing) to stop” and “the tragic occurrence (replaying) over and over in our minds” (Neal 12). As such, the allegorical mode intersects ‘text’ and ‘event’: it provides insight into contemporary preoccupations with the coming war, the temporal nature of the impact of trauma, and suggests that the utility of such texts is more significant than the ludic ‘temporal dislocation’ ascribed by Burling’s assessment of the subgenre. As with Blake’s examination of the horror genre, “[these texts are] an extremely useful means of exploring the relation of cultural artefacts to the milieux in which they circulate” (Blake 6)—a notion I will continue to demonstrate throughout my thesis.

In the following chapters I shift my focus from the temporalities of trauma to the ‘temporalities of crisis’. As I have established, the cultural trauma prompted by the onset of World War Two was time-centric: it disrupted preconceptions of the notion of ‘change’, of relational constraints between past and present (Le Poidevin and MacBeath 4). In this case, a past event apparently returned to the present in a manner that mirrors theorists’ descriptions of trauma. However cultural trauma is an example of what I am describing in this thesis as ‘crisis’: periods of socio-cultural or personal upheaval and change, such as World War Two and the onset of the nuclear age. Such crises are deeply temporal, as I will demonstrate. I chose to begin with an examination of cultural trauma as its symptom of the ‘insistent return’ of the traumatic event provides a solid example of the temporality of such crises. Also, this symptom of trauma, as represented by the US public’s reception of ‘another’ European war, has not previously been connected to the period’s time travel fiction. As such, my delineation of time
travel’s allegorical mode in this preliminary chapter represents an addition to existing scholarship. Following my examination of the temporalities of crisis, and time travel fiction’s role in allegorically reproducing them, my thesis shifts to an examination of ‘modes of alleviation’. The focus of the second half of the thesis, ‘modes of alleviation’ is a term I am using to describe phenomena that perform psychological ‘repair work’ during periods of crisis; they can ‘counter’ the anxiety-inducing temporalities of crisis, such as trauma’s problematizing of time. Such a role, I will demonstrate, is a feature of utopia (particularly utopian anti-utopianism), propaganda, and apocalypse. All present temporal ‘solutions’ to socio-historical crises’ temporally prompted fears and anxieties. However, before this exploration of the mid-twentieth century’s modes of alleviation, I will continue with an analysis of temporal aspects of crisis—the elements that create unease, anxiety, and fear. In the following chapter I examine the temporalities of both the Second World War (separated from the cultural trauma it represented) and a notion of generalised ‘crisis’.

There are differences between fears and anxieties, which Bourke outlines: fears have an identifiable cause, such as fire, while anxiety is a generalized state that does not necessary involve a conscious recognition of a ‘dangerous object’ (189). However, Ellul contends that the key distinction is rationality: “an essential difference between fear and anxiety is that anxiety is a reaction disproportionate to the actual danger or a reaction to an imaginary danger” (154). While I occasionally conflate the two terms, in general I adhere to Bourke’s distinction and use ‘anxiety’ to refer to a generalised sense of tension. For example, I use ‘nuclear anxiety’ to reference the sense of nuclear-age unease that combined fears of the bomb, the Communist threat, and the rapidly approaching future.
Chapter 2 - The Temporalities of Crisis in Heinlein’s ‘By His Bootstraps’

In this chapter I argue that the structure of the ‘causal loop’ time travel narrative reproduces the time-related anxieties that arise during moments of socio-historical turmoil. In order to establish a foundation for this argument I turn to the first literary example to fully explore the connotations of the causal loop, Robert Heinlein’s short story ‘By His Bootstraps’ (1941). In the first section of this chapter I locate the story’s dystopian elements, in order to establish its reflection of contemporary historical turmoil. Written a few months before Pearl Harbor and America’s entry into World War Two, Heinlein’s narrative engages with the threat of fascism. Briefly drawing on studies of utopia by Fredric Jameson and Darko Suvin, among others, I argue that that the story’s depiction of the far future represents a dystopian vision that comments on the crisis surrounding the narrative’s composition. This connection between the story and the growing worldwide conflict sets the stage for an exploration of the allegorical role played by the narrative’s causal loop.

In the second section, I unpack the temporal aspects of the causal loop narrative, and argue that they allegorically reproduce those embedded in contemporary crises. I delineate the causal loop, the ‘block universe’ model of time upon which it relies, and the impact of World War Two on the perception of time. My examination of this prominent type of time travel fiction leads me to claim that the loop’s features reproduce time-centric anxieties connected to the story’s socio-historical context. In other words, the loop is shown to be a deterministic system that involves an infinite circling of time. Therefore, I demonstrate that the narrative causal loop is a reproduction of the sense of ‘temporal isolation’ that marks periods of turmoil such as the Second World War. The temporalities that I examine here are manifest in both contemporary socio-cultural turmoil, and in cultural responses to developments in science. Yet, the same chrono-centric symptoms are also evident in personal, generalised experiences of crisis.

In the final section of this chapter, I argue that the causal loop narrative device allegorises the temporal elements of a ‘general’, personal sense of crisis. Here, I expand my argument using Frank Kermode’s theory of apocalyptic fictions.
The parallels between Kermode’s arguments and the causal loop suggest that it represents a generalised transitional turmoil, one that Kermode claims is central to the human condition. This sense of turmoil, Kermode says, is a universal tendency to consider ourselves within the end times, within a period of transition that will lead to a new beginning. Once I establish my argument that the causal loop structure reproduces this sense of transition, I draw out the time-related features of the loop in order to delineate its allegorical function. This type of time travel demands a certain model of time and this model has particular philosophical consequences. These consequences or ‘temporalities’ as I refer to them, include trenchant determinism and a perpetual denial of an ‘ending’. I argue that the similarities between Kermode’s generalised crisis and the loop structure marks these temporalities as central to moments of social or personal upheaval. Dubbed the ‘temporalities of crisis’, I identify these features in Heinlein’s personal responses to the attack on Pearl Harbour. In both his letters and in other writing from the same period, Heinlein expressed an inner turmoil surrounding his inability to affect the War. As such, I demonstrate that the causal loop plays a complex socio-cultural role; it is at once a response to cultural anxieties (stemming from the war and from scientific advances) and also to a generalised, personal sense of crisis. This famous time travel narrative device engages with the temporalities of its contemporary crises and provides a means for their allegorical expression.

‘By His Bootstraps’, dystopia, and the fascist threat

The most prominent feature of Robert Heinlein’s short story ‘By His Bootstraps’ (1941) is the time loop, which results in protagonist Bob Wilson meeting different versions of himself. My argument in this chapter is that the story’s loop allegorically reproduces both the temporalities central to the Second World War and those associated with a generalised sense of crisis. As these ‘temporalities of crisis’ emerge from the culture within which they are produced, it is important to first place the story in its historical context. Heinlein wrote ‘By His Bootstraps’ in the months leading up to Pearl Harbour and America’s entry into World War II. While at first glance the story is thematically distinct from the war, it does hold a
significant allusion to the conflict. The future that Bob creates for himself, and the way he goes about this (manipulating the emotions of the people), recalls the rise of Hitler and thus the spectre of fascist dictatorship. When this image of a dystopian future is considered alongside the implications of the story’s time loop, it highlights the temporal anxieties that accompanied the threat of fascism in the early 1940s. Much like the ‘cyclical destruction’ stories analysed in the previous chapter, the loop reproduces the sense of a deterministic and inescapable crisis that was present in much of American culture during the onset of the Second World War. This crisis was ‘temporal’ inasmuch as determinism demands a specific model of time, and an inescapable crisis is effectively the absence of temporal progression—the denial of a future. It is these temporalities that are simulated by the structure and function of fictional causal loops. Once this allegorical mode is established, I extend my argument to illustrate that the story’s loop structure allegorises a ‘generalised’ sense of crisis—similar to that which Kermode claims to be a pervasive cultural phenomenon.

The dystopian future of ‘By His Bootstraps’ allegorises the socio-political preoccupations of the US in the early 1940s. In Lowenstein’s examination of genre fiction as allegory for trauma, his focus is on past trauma “bleed(ing) through” time and impacting the present (1). Unlike the examples in the previous chapter, which I argued reproduced the return of a past trauma (America’s involvement in the Great War), Heinlein’s story engages not with the past, but directly with the crisis that surrounded its composition, in the historical ‘present’. However, this engagement with a present crisis does not alter the allegorical mode of the narrative. It still, as Lowenstein describes his ‘allegorical moment’, “conforms to neither the naïve verisimilitude of realism, nor to the self-conscious distantiation of modernism” but instead provides an idiomatic representation of the crisis prompted by the onset of World War Two (4).

This focus on reproducing the present and its turmoil is one of the key functions of SF. Jameson argues that the genre is a “narrative movement in which the groups of a given collectivity at a certain historical conjuncture anxiously interrogate their fate, and explore it with hope or dread” (“Progress” 148). According to Jameson, the representations of the future in stories such as ’By His
Bootstraps\textsuperscript{31} serve to “defamiliarize and restructure our experience of our own present” (“Progress” 151, emphasis in original). One of the key narrative forms, through which SF acts as a mediation on the present, is dystopia. The prominent view amongst SF theorists is that utopias and anti-utopias (dystopias) form a critique or reflection of the author’s society as much as they propose ‘alternatives’. This is the view of Darko Suvin, who famously dubbed utopia (and therefore dystopia) the “socio-political subgenre of science fiction” (\textit{Metamorphoses} 61). Here, Suvin’s contention is that the utopian imagination is focused on the possibility of change in the here-and-now—in the present. Milner, who draws extensively on Suvin in his examinations of utopia and dystopia, supports this basic view of SF’s focus on the present\textsuperscript{32}. Similarly, McNeill states that “[u]topias are not concerned with imagining the future so much as with sketching out the present and our ways out of it” (63). While Jameson’s meditations on utopia are extensive and dense, he too expresses this ‘redirection’ of utopia from being ‘imagination of the future’ to being ‘present-focused’. He refers to utopias as “diagnostic interventions” that “aim at the alleviation and elimination of the sources of exploitation and suffering, rather than at the composition of blueprints for bourgeois comfort” (Jameson \textit{Archaeologies} 12). ‘Blueprints’ imply a plan for the construction of something in the future, which is the assumed ‘traditional’ role of utopia. Jameson rejects this position, arguing that utopians aim to ‘intervene’ in the present, to relieve present sufferings\textsuperscript{33}. If, therefore, we take dystopias as interrogations of present concerns, in other words the tensions that coincide with their production, then the future presented in ‘By His Bootstraps’ can be reassessed. It can be considered an ‘intervention’ into the contemporary crisis represented by the Second World War, and in particular the threat of fascism.

\textsuperscript{31} Jameson would perhaps object to his work being applied to stories that originated in the mid-twentieth century pulps. Referring to the work of van Vogt, Jameson says that such texts: “emerge from the world of the pulps and of commercial culture. ... They cannot be read as Literature ... above all because their strongest effects are ... enabled only by precisely those sub-literary conventions of the genre which are unassimilable to high culture.” (Jameson \textit{Archaeologies} 316)

\textsuperscript{32} See, for example, “Framing Catastrophe: The Problem of Ending in Dystopian Fiction” and “Darker Cities Urban Dystopia and Science Fiction Cinema”.

\textsuperscript{33} In chapter four I examine utopia in more detail, and argue that the temporality of utopian ‘anticipation’ is a comforting. I go on to argue that time travel reproduces this ‘mode of alleviation’.
The future presented in ‘By His Bootstraps’ is dystopian, when not viewed from the perspective of the protagonist. While Bob Wilson personally considers his eventual fate to be “A great future!”, for its native inhabitants, the world he creates is wholly negative (Heinlein “Bootstraps” 276). ‘By His Bootstraps’ tells the story of Bob Wilson, and begins in a contemporary setting. A time gate transports Bob to the far future, a seemingly Edenic paradise. The future Bob’s experience begins with a luxurious open room “...a balcony hanging high over a green countryside. A soft, warm, summer breeze wafted through the place. ...”, where he is served “gorgeous” fruit by “gorgeous” girls (238-9). This idyllic paradise, Bob discovers, is ruled by a man named ‘Diktor’. Bob returns to his present, encounters various past and future versions of himself, and eventually discovers that Diktor is himself one of these future versions. The story resolves with Bob assuming the role of Diktor, and meeting his younger self for the first time. While Bob is subjectively happy with this outcome, this future is a dystopia. Diktor rules absolutely; he has enslaved the natives of this future, and treats them as commodities to be given as gifts (239). The centrality of the dictatorial nature of this future is highlighted by the word ‘Diktor’ itself. Meaning ‘chief’ in the language of the future-humans, the word ‘Diktor’ is said one of the few remaining linguistic links between this new language and ‘ancient’ English (267). This suggests a history of subjugation, with the concept of a ‘dictator’ being one of few continuous concerns throughout the preceding thousands of years. This dictatorial, slave-filled future is a dystopia that Williams would describe as characteristic of a particular ‘dystopian mode’—the “willed transformation” (205). In this type of dystopia “a new but less happy kind of life has been brought about by social degeneration, by the emergence or re-emergence of harmful kinds of social order, or by the unforeseen yet disastrous consequences of an effort at social improvement” (204). Here fascism, or at least an oppressive dictatorship, is the ‘harmful social order’ that has ‘re-emerged’. Evidence that this dystopia is an allegorical representation of Hitler’s fascism lies in the way Bob ‘conquers’ the future.

Bob’s suppression of the ‘forsaken ones’, the remnants of humanity that he encounters in the far future, reproduces Hitler’s use of propaganda to rise to power. As Cull notes, Hitler’s strategy on the road to dominance centred on his
claim “that the masses were influenced not by their brains but by their emotions” (318). Bob takes a similar route, and buys a copy of “Mein Kampf” before his trip to the future (Heinlein “Bootstraps” 260)34. He makes a conscious choice to use “highly emotional” music to gain a position of power amongst the ‘forsaken ones’ (261). Focussing on ‘emotions’ rather than ‘brains’, he plays “sensuous and compelling, rather that cerebral” music which causes “tears to stream down” their faces. Soon the people of the future “held their heads and moaned. They shouted their applause” (268). This victory is accompanied by a description that recalls the appeal Hitler held for the previously defeated German people:

Wilson’s rise to power was more in the nature of a triumphal progress than a struggle for supremacy ... Whatever it was that the High Ones had done to the human race it had left them with only physical resemblance and with temperament largely changed. ... The fight was gone out of them. It was not that they lacked intelligence, nor civilized arts; it was the competitive spirit that was gone, the will-to-power.

Wilson had a monopoly on that. (268)

The Forsaken Ones are enslaved by the mysterious High Ones, and this experience is depicted as devastating, leaving them submissive and lacking in will. Bob’s rousing appeal to their emotions sees them fall into line beneath him, despite their ‘intelligence’ and ‘civilized’ history. This is the standard view of Hitler’s influence on the German masses in the inter-war years (Cull 318). These parallels between fascism and the story’s objective dystopia suggest that it represents engagement with the contemporary threat posed by Hitler in World War II. It is a bleak assessment of the crisis—‘dictators’ and oppression are among the few constants in this depiction of humanity’s future—and it is one that is compounded by the time travel model used in the story.

Not only do Bob’s actions reproduce the crisis facing the US in the early 1940s, but the story’s use of time travel is itself an allegorical mode that enhances the negative temporalities of the period. It highlights the temporal aspects of this crisis, namely the sense of determinism and ‘temporal isolation’ that accompanied

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34 The image of this book being severed during Bob’s time travelling is worthy of further examination: “He set the suitcases down near the Gate to be ready for a quick departure. As he did so he noticed that a large chunk was missing from a corner of one case. Half a book showed through the Opening, sheared as neatly as with a printer’s trimmer. He identified it as ‘Mein Kampf.’ ” (Heinlein ‘Bootstraps’ 263)
the onset of the war. The dystopia of ‘By His Bootstraps’ is arrived at via Bob’s traversal of a ‘causal loop’. This type of time travel, as I will illustrate shortly, demands a specific model of time to remain logically coherent—one that is entirely deterministic, with ‘cause’ leading directly to ‘effect’, implying the impossibility of free will. At the same time, moving in time within such a universe centralises a notion of endless repetition. When these two features of causal loops are transferred to the contemporary crisis connoted by the story’s dystopia, they can be considered allegory for the ‘temporalities’ of this crisis: the sense of inalterability and endless repetition that preoccupied the US when the narrative was composed. However, as I will argue in the chapter’s final section, the causal loop also reproduces a generalised sense of personal crisis, one that was experienced by Heinlein during the 1940s, as is evidenced by his personal correspondence and also his other fictions.

The temporalities of WWII

In the previous chapter I argued that time-focused SF of the early 40s allegorised the ‘cultural trauma’ prompted by the return of global warfare. These stories created a sense of ‘temporal isolation’, with a repetitive crisis replacing linear progression towards the future. In examples such as Exiles in Time this cyclical structure was combined with a prominent lack of agency, with protagonists helpless to affect the crisis that surrounded them. Here I aim to show that such ‘block universe’ time travel, which can result in ‘causal loops’, is the ultimate expression of such temporal isolation. This narrative structure, dependant on the theories of Minkowski and Einstein, is a clear response to the early twentieth-century advances made by such scientists. However, causal loops also engage with the temporal features of greater socio-cultural concerns. Then, by tracing parallels between the causal loop structure and Kermode’s notion of ‘immanent’ crisis, I argue that Heinlein’s causal loop allegorises a generalised sense of turmoil. The loop reproduces the sense of determinism and denial of positive endings that can arise during moments of social, political, or personal crisis. These features, which

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35 In chapter six of my thesis, I demonstrate that these fictional loops also allow for the retention of individual free will, despite their deterministic structure. Here, I focus on the literary device’s primary narrative impact, which is the depiction of a time traveller’s failure to alter future events.
result from the model of time demanded by the causal loop, are examples of what I’m calling ‘temporalities of crisis’. These temporalities are the time-related concerns that emerge at moments of crisis and mark the period as a source of anxiety. However, before moving into a more generalised examination of the temporalities of crisis, I will first delineate the block universe model and causal loops, and how the loop in ‘By His Bootstraps’ allegorises key domestic, war-prompted anxieties that were contemporaneous with its composition.

The causal loop time travel device demands that the world of the narrative exists in a ‘block universe’. This model of time is the view that time is solid and unchangeable. In 1908 Herman Minkowski famously presented the notion that space and time are inseparable, and together form a four-dimensional construct called spacetime. An interpretation of Einstein’s Special Theory of Relativity, Minkowski’s spacetime dictates that the Universe is akin to a static block. If one were able to view all of space and time from ‘outside’, it would be solid and unmoving. Each individual’s personal timelines are etched into the block, and cannot change. What we regard as change is simply our perception of the present, moving along our personal timelines. A useful analogy is a movie. When we consider a (completed) movie, sitting in its canister or on a DVD, it is static and unchanging. The images that make up the film cannot be altered. This is like the block universe. Watching the movie for the first time is like our experience of time. A story unfolds, and we are unaware of what will happen next. However, no amount of willpower can change the course of the film; its outcome has been ‘prewritten’ by the filmmakers. Similarly, in a block universe each individual’s past and future is fixed in the static block. The change individuals perceive is simply an unfolding of an unknown, but already prescribed future (Minkowski). It is the unchanging nature of time that marks this model as ‘tenseless’. Considered objectively, spacetime is static and thus does not contain a past, present, or future. With no distinction between the tenses, the term ‘tenseless’ has been adopted to

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36 See: Minkowski, H. “Space and Time: A Translation of an Address Delivered At the 80th Assembly of German Natural Scientists and Physicians, at Cologne, 21 September, 1908.”

37 Nahin points out that the origin of the term ‘block universe’ predates Minkowski. He traces its source to the influence of 1883 and Oxford philosopher Francis Herbert Bradley (Nahin 104).

38 See Brooks Landon’s Aesthetics of Ambivalence (1992) for an argument that the film medium is a form of time travel.
describe the block universe (McTaggart; Smart). A key problem with this model, which has made it unacceptable to physicists such as Geach and philosophers of time including Smart and Black, is that it implies a deterministic universe that denies human agency (Nahin 106,07). This view of time has a long history, and SF engaged with it extensively before Heinlein wrote ‘By His Bootstraps’.

Since its proto-form of ‘Scientific Romance’ in the nineteenth century\(^{39}\), SF has speculated on the implications of emergent scientific concepts\(^{40}\), and the block universe and spacetime are no exceptions. This model of time was firmly established by the time Heinlein composed ‘By His Bootstraps’. While spacetime was first described mathematically by Minkowski in 1908, the concept of tenseless time has a long history in philosophy and theology, stretching at least back to Parmenides c510BC (Park 16-18). In time travel fiction, H.G. Wells famously described a fixed, block universe model in *The Time Machine* (1895). However, in the decades following Minkowski the idea of static spacetime, of the block universe, entered popular consciousness. Nahin provides a useful genealogy of the block universe in SF, tracing its use in pre-Wells fiction to its use in 20s and 30s SF, SF fan debates about its connotations, and even its use in the 1928 New York stage play “Berkeley Square” (Nahin 109-11). Heinlein’s interest in the block universe predates ‘By His Bootstraps’, and in fact his first published story (‘Life-Line’ [1939]) used Minkowski’s concept. The block universe model, and its deterministic, agency-denying consequences, were therefore well known by the time the Second World War began. Such engagement by the SF genre with this ground-breaking scientific theory—one with vast philosophical consequences—is not surprising. Csicsery-Ronay notes that the time travel fiction of the period was a direct response to the new sciences (relativity and quantum mechanics\(^{41}\)) (8). The primary consequence of the block universe that demanded exploration was the block universe’s deterministic connotations. Yet, as Cheng argues, in interwar time travel stories, while they drew extensively from relativity, did not examine such consequences. In this period’s fictions, “[t]ime travelers moved freely back

\(^{39}\) A term used to describe the work of, most famously, Jules Verne and H.G. Wells

\(^{40}\) The most famous example that is relevant to this thesis is Wells’ exploration of the consequences of Darwinism in *The Time Machine*.

\(^{41}\) The relationship between the consequences of quantum mechanics and time travel fiction is examined in chapter five.
and forth in time with no complication or caveat” (191). ‘Complications’, such as the paradox-inducing causal loop narrative device, were not added until the onset of the war, in fictions such as ‘By His Bootstraps’. While this development may be a result of the increasing sophistication and scientific literacy of such stories’ authors, it also suggests a connection with the socio-cultural milieu (Silverberg “Science Fiction”). As discussed in the previous chapter, the onset of War represented as eschatological crisis, one laden with temporalities including an ‘inevitable’ future, temporal isolation, and a denial of personal agency. These chrono-centric socio-cultural symptoms imply a preoccupation with feelings of determinism, and coincide with composition of time travel fictions that, for the first time, engage with the agency-denying consequences of Minkowski and Einstein’s theories. As such, Heinlein’s use of the concept was not just a science-fictional exercise in reproducing the science of the time, but in exploring the consequences of an element of the zeitgeist. SF, with Heinlein’s story being the exemplar, enacts this exploration via time travel’s allegorical mode; time travel in fictional block universes creates unending, inescapable ‘causal loops’, and this reproduces tensions surrounding determinism’s connotations.

In fiction, deterministic ‘causal loops’ can be formed when time travel occurs in a block- Universe. A time traveller attempting to change the past or future will fail, as all events have already been recorded on the unchanging block that is the universe. These attempts can occasionally interrupt the process of cause and effect and create what is known as a ‘causal loop’; a time traveller from the future can flip causality and actually cause a past event to occur. In Heinlein’s ‘By His Bootstraps’, Bob Wilson is initially knocked through the time gate by a future version of himself. This ‘future-self’ is actually trying to change the past by preventing ‘present-Bob’ from entering the time gate at all. Future Bob’s attempt to change the past causes that past event to occur just as he remembered it. The event—Bob entering the time gate—precedes the cause, in this case Future Bob’s attempt to stop his earlier self’s time jaunt. With timelines prewritten in a block universe, causal loops represent the embodiment of inevitability. No matter how hard he tries, Bob’s attempts to change the past simply lead to the pre-written events he is trying to change. As such, the causal loop narrative device highlights
the strict determinism inherent in the block universe\textsuperscript{42}. Its use in ‘By His Bootstraps’ significantly colours the dystopia that Bob creates. As Bob’s looping in time firmly establishes that the story is set in a Block universe, the degeneration and oppression awaiting humankind are completely inevitable. No amount of struggle can make this future avoidable, as it is ‘prewritten’ in the block of spacetime. On the surface it may seem that causal loops have a primarily ludic effect, that they are an example of Burling’s ‘temporal dislocation’ form of time travel fiction\textsuperscript{43}. However, it is my argument that the loop can be a reflective reproduction of tensions inherent in the context from which it emerged. As I will illustrate, it is the consequences of these loops that form the primary allegorical mode of stories such as ‘By His Bootstraps’: they mimic the inevitability, temporal isolation, and denial of free will associated with both the Block universe model, and the cultural moment within which they were produced. They reproduce the temporalities of crisis.

SF scholars David Ketterer (“Death”) and Gary Wesfahl have briefly suggested that causal loops reflect aspects of ‘personal’ crisis, and have thus hinted at time travel fiction’s allegorical mode. These theorists make this connection, yet no mention is made of the socio-cultural allegory I claim is often at play when the causal loop narrative device is used. For example, for Ketterer the looping of time in ‘By His Bootstraps’ is emblematic of an author who:

\ldots has been forced to come to terms with, allow for, or in some way deal with the fact of his own mortality. Heinlein’s solution, like that of most SF writers, has been, by a variety of strategies, to effectively deny the natural process of history. (“Death” 229)

The loop is thus, Ketterer claims, an allegorical reproduction of the author’s personal crisis, his struggle with mortality\textsuperscript{44}. I agree with Ketterer that the loop connotes a personal, generalised sense of ‘crisis’. As I’ll demonstrate in the next section of this chapter, this connection is evidenced by Heinlein’s personal correspondence from the time of the story’s composition. However, there is more to the loop’s allegorical mode than personal reflections on mortality. As I argue

\textsuperscript{42} Which, as noted, has led many philosophers and physicists to argue against the existence of the block universe. See Nahin (106-107)

\textsuperscript{43} See chapter one

\textsuperscript{44} Csicsery-Ronay similarly notes: “Time travel to the past may have one ultimate purpose: to find a way to prevent our own deaths”. (100)
throughout this chapter, causal loops reproduce numerous, complex temporalities
drawn from cultural and personal crises, and developments in science. In a similar
manner to Ketterer, Westfahl’s commentary on Philip K. Dick’s ‘A Little
Something for Us Tempunauts’ (1975) again points to causal loops’ ability to
reproduce aspects of a generalised sense of ‘crisis’. In the story, returned travellers
are stuck in a time loop, arriving a few days after their own deaths. They are
destined to experience the aftermath of their own deaths, and then to die, over and
over again. As Westfahl notes:

..., the situation (Dick) develops serves as a powerful metaphor for the ways that people
can trap themselves in repetitive cycles, making the same bad decisions over and over
again, creating the sense that they are constantly moving but getting nowhere. The
story begins with the adverb “Wearily” (259), ends with the phrase “The dreadful and
weary miracle of eternal life” (282), and conveys throughout an overwhelming feeling
of exhaustion and frustration (5)

This analysis recalls my argument from the preceding chapter, with trauma
sufferers experiencing the same sense of being ‘trapped in repetitive cycles’ as
described by Westfahl. Again, I agree that the eternal looping of time in Dick’s
story allegorises a general personal crisis. Yet, this analysis stops short of
connecting the story’s causal loop to the socio-historical climate within which it
was produced. While an in-depth examination of Dick’s story at this point would
prove too much of a digression, the basic connection between the story’s loop and
its context is clear. The story was written at the height of the Cold War and at the
beginnings of the space race, and depicts Russians and Americans working
together to push new technological frontiers. However their efforts are repeatedly
sabotaged by human failings, and a distrust of the process of collaboration. It is the
inability to collaborate and rely on others that traps the tempunauts, who
represent humanity’s potential, in an eternally repeating causal loop punctuated
by their own deaths. The story is thus an allegory for frustration at Cold War fears
and suspicions, and their impact on human progression. The text suggests that,
like its tempunauts, Cold War culture was ‘stuck’ as a result of perpetual mistrust.
I mention these studies at this point as they’re two of the few examinations of
time travel fiction to point to the allegorical mode of paradox-heavy time travel
devices such as causal loops. Most others, such as those by Burling and Slusser and
Chastain, suggest such devices’ primary purposes are philosophical and narrative
‘play’. Yet, these studies do not make mention of the ‘temporality’ of the crises they describe. Nor do they articulate the causal loop’s role in allegorising socio-historical crises’ temporalities. My aim in this chapter, and in this thesis, is to delineate this allegorical mode, and this is my primary contribution to the existing scholarship. Time travel of all forms can exhibit this mode. ‘By His Bootstraps’ is a central example as it allegorises both the temporalities of personal crisis, and those imbedded in cultural responses to the onset of the Second World War.

‘By His Bootstraps’ deterministic loop allegorises the sense of inevitability regarding the onset of war, which emerged in the USA following Hitler’s initial victories in Europe. The prominent determinism in ‘By His Bootstraps’ is articulated by its protagonist, Bob Wilson. Bob describes his looping journey through time as “inevitability”—a “damned repetitious treadmill” (Heinlein “Bootstraps” 256, 44). The image of a treadmill connotes a never-ending cycle that cannot be changed—the ‘path’ is fixed. As such, Bob’s future, the repetition of his conflict with the other versions of himself, is ‘inevitable’ and inescapable. During one of his encounters, Bob attempts to change the loop’s ‘pre-written’ nature by attempting to sing “Mary Had A Little Lamb”, which he knows did not happen the first time he witnessed the conflict. He finds this impossible, and the scene plays out exactly as before. An analogous sense of relentlessly encroaching, ‘inevitable’ conflict surrounded the threat of fascism in pre-war USA. While most of the country, 96.4%, opposed going to war with Germany, many (63%) expected that “that (would) war be declared against Hitler” (Clifford 13). Heinlein himself certainly seemed to feel that war was inevitable, as he repeatedly attempted to re-join the military during the lead up to Pearl Harbor (Heinlein Grumbles). ‘By His Bootstraps’ use of time travel allegorises this sense of inevitability regarding the fascist threat. The inescapable loop of time, imagery used to describe it such as that of the ‘treadmill’, plus the story’s depiction of the perpetual enslavement of humanity, all highlight a sense of helplessness and inevitability. This is an example of the allegorical mode of time travel fiction: it reproduces the temporalities of contemporary crises, in this case a sense that the future was unchangeable. Along with allegorising the prominent objective determinism of the period’s science and political concerns, the story’s ‘treadmill’-like causal loop also
reproduces a sense of ‘endless’ repetition, which pre-emptively reflects the ‘mechanised’ time that took over wartime USA.

The nature of time itself seemed to change for US society during the Second World War. It became a sort of mechanised cycle, much like the loop of time depicted in ‘By His Bootstraps’. Heinlein’s story was published shortly before America’s entry into the conflict, yet it pre-empts this alteration to time, this temporality of crisis, and allegorically reproduces it. During the war, people needed to increase their work hours, use public transport due to restrictions on driving, undertake household duties and civil defence exercises, and maintain victory gardens (Duis 17). As such, many families’ daily lives came to involve a ‘controlled’ “pace of events”, with the government “[c]oordinating or synchronizing people and their activities” (37). Strict public transport timetables and working hours were adhered to, forcing a repeating routine upon families. The government used “sirens that announced civil defense drills … rosters … Large thermometer-style signs, pie charts, and similar gauges” to keep families’ war contributions and “life rhythm” moving “in harmony” (37). As Duis notes, these “devices functioned in wartime society much as factory clocks and whistles had synchronized the lives of nearby workers during earlier decades” (37). This ‘rhythm’, involving as it did routine, ‘harmony’, ‘synchronicity’, and measurement, meant that time became similarly ordered and mechanical. Daily life became something that ran on a strict timetable, like a “factory”, and repeated day after day. With little time for leisure, peoples’ lives, and thus time, became mechanical, “synchronized”, and repetitive. This new, unchanging, and repeating form of time is much like Bob’s time loop, as I’ve previously described. His ‘treadmill’ involves a conflict in his office between three versions of himself, a scene that repeats, on cue, again and again. The new mechanised time of the Second World War thus evoked a sense that time was frozen in place, which is a form of ‘temporal isolation’.

Along with inevitability and mechanised time, causal loops also reproduce a sense of ‘temporal isolation’ that was prominent in wartime USA. In the previous chapter, I used ‘temporal isolation’ to mean an experience of being isolated in a present moment that is fully defined by past, and which has a predetermined future. Here I am modifying the concept slightly; ‘temporal
isolation’ still refers to a sense of being trapped in an isolated moment of ‘present’
time, but this loop narrative involves less focus on the impact of the past on this
frozen moment. To appreciate the isolating nature of fictional causal loops, the
reader must consider their structure from an ‘omniscient’ perspective. By
considering the structure of the loop not through the eyes of the story’s
protagonist, but from a position outside the linear narrative, causal loops appear to
be perpetual\textsuperscript{45}. As described in Isaac Asimov’s *The End of Eternity*\textsuperscript{46} (1955) a causal
loop considered from such a perspective involves a circle of “infinite turns ... [Y]ou
can draw a pencil round and round the circumference of a circle infinitely” (144).
Bob’s journey through the loop ends where it begins, with his earliest ‘self’
encountering the time gate, again recalling the “treadmill” image evoked by Bob
himself (Heinlein “Bootstraps” 244). Switching perspective back to youngest-Bob
at that point begins the cycle again. From such a viewpoint causal loops do not
result in a conclusion or transition to a new state, but in the beginning, once more,
of the same cycle. Hence ‘endings’, or the future, are denied. These loops can also
deny ‘beginnings’, as they can result in an ontological paradox. An example of this
paradox is the notebook that Bob uses to learn the language of the inhabitants of
the 301\textsuperscript{st} century. Bob finds the book of translations near the time machine, uses it
for years until it is worn out, copies its contents into a new book, and leaves this
new book near the time machine. His earlier self finds the book, uses it for years,
copies its contents, and so on. The book has no ‘beginning’; Bob only knows the
translations he writes in the book because he’s read them in the very same book,
just an ‘earlier’ version of the one he leaves behind. These two features of the
loop, the denial of ‘ends’ and ‘beginnings’, creates a similar sense of ‘temporal
isolation’ to that which I examined in the previous chapter. However despite the
similarities between Heinlein’s loop structure and the ‘temporal isolation’ created
by cultural trauma, there is a key difference. The ‘cyclical apocalypse’ stories from
the previous chapter involved the perpetual return of a traumatic event, such as
warfare. This, I argued, allegorised contemporary fears that the First World War
had ‘literally’ returned. When combined with an apparently deterministic future,
this returning past ‘isolated’ the trauma victim in the present. Here the causal loop

\textsuperscript{45} Following the protagonist’s perspective provides a different effect, and is explored in the final
chapter of this thesis.

\textsuperscript{46} See chapter three for a detailed analysis of this text in relation to the crisis of nuclear fear.
represents being trapped within a crisis, or a seemingly perpetual ‘present’ moment.

Heinlein’s causal loop reproduces the temporal isolation of World War II, or a sense of being ‘trapped’ in the present. The loop represents a deterministic, cyclical, perpetual ‘present’, with no beginning or end, past or future. The story’s motif of negative cycles, implied by the ‘High Ones’ oppression of the ‘Forsaken Ones’ and the continuity of the word ‘Diktor’ is magnified by the firmly inescapable, perpetual ‘present’ of the causal loop. In this chapter I am considering the loop solely from an objective, or ‘omniscient’ viewpoint; from this perspective ‘outside’ the narrative, the loop represents a temporally isolated ‘frozen’ moment, a record skipping, or a circle etched in the Block universe. Bob is stuck in the loop, struggling to create a future that is perpetually denied, and thus ‘isolated’. This notion is supported by Slusser, who argues that “...if in theory Heinlein and other American writers of SF are strongly committed to the future, in practice their work seems devoted to preventing that future from existing...” (“Fur Farm” 64). However, I would argue that Heinlein’s story is not so much ‘devoted’ to preventing the future, but that it was a reaction to its contemporary crisis, and particularly the temporalities of this crisis. In particular, this aspect of the loop is a reproduction of the idea of ‘frozen time’, of temporal isolation; Bob’s story seems to not reach a conclusion, but to start from the beginning once more. The endless and ‘beginning-less’ loop approximates the impact of the war’s mechanised time on the US public’s ‘private time’. In the years following the publication of ‘By His Bootstraps’, the ‘changed time’ of WWII, as outlined by Duis, came to hold connotations of a ‘perpetual present’: a static moment in time. With fighting men away and the rest of society focussed on the war effort, for years “personal lives had been, in effect, frozen in place” (37). In ‘By His Bootstraps’, Bob’s personal life is similarly ‘frozen’. He rejects Karen, a potential domestic partner, and replaces the possibility of a healthy, family-oriented future with a frozen moment of time, a perpetual conflict without beginning or end. This temporal isolation also reflects, in essence, what Jameson refers to as the failure of utopia. As “prisoners”, owing to “systemic, cultural, and ideological closure”, we are unable to imagine “otherness and radical difference” (Jameson “Progress” 153). In other words, we cannot imagine a future that isn’t a direct reflection of our present circumstances.
Essentially, this is a denial of the future, and a symbol of our ideological slavery or ‘imprisonment’ in the present. Bob too is imprisoned in his present, and the reader is invited to consider the impossibility of his ever escaping the loop that has ‘closed’ him off from the future.

Such temporalities are not exclusive to crises, such as the war, which affect an entire culture. Nor are causal loops solely an expression of the disturbing temporal consequences of contemporary scientific theory. These temporalities, and the fictions that allegorically reproduce them, are complex and multifaceted. Temporal isolation and a denial of agency are also features of a more generalised and personal feeling of being trapped within a crisis, as experienced by Heinlein himself. As I will argue in the following section, the affectless nature of Bob’s loop is perhaps a reflection of Heinlein’s ‘interventionist’ leanings; he wanted to contribute to the war\textsuperscript{47}, but found himself rejected from the armed forces, and ‘isolated’ in the present—surrounded by a country that showed less than 4\% support for joining the war effort (Heinlein \textit{Grumbles} 26-28; Clifford and Spencer 8). The ‘prevented’ future in ‘By His Bootstraps’ analogises a feeling of entrapment, of an immanent conflict that the subject is unable to alter, no matter how hard they try. The causal loop reproduces such a general, personal sense of crisis, and to help articulate this connection, a theoretical framework that similarly generalises is required. As such, in the following section I use Kermode’s examination of apocalyptic structures in \textit{A Sense of an Ending} (1965), as it defines a general “moment of crisis” which he claims is near universal in Western culture (46). This general crisis, I will demonstrate, has particular temporalities that are reproduced in causal loop time travel fiction. I will argue that at the time ‘By His Bootstraps’ was written, Heinlein was enmeshed in a ‘generalised crisis’, the temporalities of which are at play in the short story. This analysis furthers my primary claim in this chapter: that time travel narrative devices have an allegorical mode that often reflects the socio-historical context surrounding their composition.

\textsuperscript{47} Heinlein received a medical discharge from the navy in 1934, due to pulmonary tuberculosis. He attempted rejoin in the weeks following Pearl Harbor, but had "no luck". (Heinlein \textit{Grumbles} 28)
Generalised crisis in ‘By his Bootstraps’

In this section my argument is that the causal loop narrative device allegorises a generalised sense of crisis that is not necessarily tied to a particular period or its cultural events. Heinlein experienced such a sense of crisis at the time he wrote ‘By His Bootstraps’, in the months leading up to Pearl Harbor, and the story’s loop reproduces its temporalities. A key aspect of Kermode’s examination of apocalyptic fiction is useful at this point. His examination of apocalypse begins with a concept that is analogous to the loop structure—the notion of ‘immanent crisis’. This, he says, is a near-universal aspect of the human condition, and his model can be examined to reveal the temporalities of this ‘generalised’ crisis. As I will demonstrate, these temporalities are allegorised by the causal loop depicted in ‘By His Bootstraps’. This connection further illustrates the role of depictions of time travel in mid-twentieth-century SF; they engage with ‘crisis’, and reproduce its temporalities. In this case, ‘crisis’ is what Kermode describes as a near-universal sense of immanent turmoil, which is marked by both determinism and a denial of endings.

Frank Kermode’s theory of apocalyptic fictions in centred on the notion of ‘immanent’ crisis, which he claims is a prominent feature of the modern human condition. As described in his 1965 text A Sense of an Ending, Kermode argues that human kind is born in medias res and, being linear by nature, we long for the comfort and satisfaction of knowable origins and endings. Thus, we create fictive concords between our lives “in the middest”, and desired beginnings and endings (17). This, he argues, is the source of the appeal of apocalyptic traditions: they supply a beginning, and more importantly, an end. Narrative fiction is said to be ‘apocalyptic’ in that it provides such a consonance. This is a feature of apocalypticism that I will return to in the closing chapter of this thesis. It is important to reiterate that at this point I am engaging only with the initial contention of Kermode’s study of apocalyptic literature. Apocalypse, he states, is ultimately comforting as it provides a ‘fiction of transition’, a sense that a given crisis will give way to a new age. However, his starting point is something he claims is a particularly prominent cultural manifestation, one that creates the need for apocalyptic fictions. Human kind, he says, has a tendency to consider itself to be always within a crisis:
It seems to be a condition attaching to the exercise of thinking about the future that one should assume one’s own time to stand in an extraordinary relation to it. The time is not free, it is the slave of a mythical end. We think of our own crisis as pre-eminent, more worrying, more interesting than other crises. (94)

Here, Kermode explicitly links the notion of crisis and time. He suggests that crisis can be considered a sense of discontinuity, or an isolated point, in time. The moment of crisis is not connected to the future, and stands as a ‘hanging’ present, reliant on a ‘mythical’ end. Thus, this sense of crisis, said to be near universal in western culture, is punctuated by temporal elements. Considered independently, this generalised crisis is temporally isolating in that it denies beginnings and ends—hence the appeal of apocalyptic fictions—and involves a discontinuous, yet paradoxically continuing present moment. This temporality of generalised crisis is reproduced in causal loop time travel fiction. The traversal of a loop, like Asimov’s pencil tracing a circle, is akin to an immanent crisis. The ‘ending’ is desired, but it is perpetually postponed when the loop ‘resets’ to its beginning. Such a temporality of crisis is not a feature of any particular socio-historical period, Kermode argues, but an almost universally observable tendency.

The ‘myth of transition’, the generalised, immanent crisis that Kermode describes is said to be near-universal in Western culture. Much like causal loops, this temporal ‘crisis’ never ends. Kermode’s argument is that ‘our’ time stands out by virtue of its pre-eminent crisis. The desire is that such an ‘extraordinary’ time will pass, as the ‘crisis’ will give way to a ‘new age’. However this is not the case. Following Focillon, Kermode argues that fin-de-siècle phenomena, representative of our “existential anxieties”, are not confined to the century’s end (97). Instead, every age of human kind “chooses always to be at the end of an era” (97). Thus, every age lives within a transitional crisis. Kermode states that the “fiction of transition is our way of registering the conviction that the end is immanent rather than imminent” (101). In other words, the end is not ‘due’ sometime in the future, but is happening right now. This ‘immanent’ end allows for the resolution of the crisis to be anticipated and expected. If the ‘end’ is happening now, then a new beginning is sure to follow. This, Kermode says, creates the comforting consonance between the ‘middle’ and the ‘end’ that we require. While satisfying our need to be convinced that our lives have a story, and are not just a series of random events, this sense of transition is a ‘fiction’. It is an illusion that is
dissolved when considering ‘transition’ from a socio-historical perspective. It is clear that end-directed historical crises, such as the two World Wars, did not lead to a fabulous ‘new age’, but simply into another transitional crisis. The Great Depression followed the First World War, then came World War II, which itself gave way to the apocalyptic zeitgeist of the nuclear age. The various conflicts and turmoils of the Cold War period continued this pattern throughout the twentieth century. Supposedly transitional crises simply give way to further transitional crises. This phenomenon seems to be perpetual throughout history, thus a clear parallel with the causal loop model emerges. The temporal isolation represented by the immanent end, a moment of crisis that anticipates a future that will never come, repeats over and over again. Similarly, the causal loop is a moment of transition that ends only with the restarting of the same period of transition. Considering this parallel, it is possible to view the causal loop structure as an allegory for this general sense of immanent crisis. Heinlein’s loop, and Bob’s reaction to it, supports this contention.

Bob’s primary causal loop in ‘By His Bootstraps’ reproduces the temporality of just such a generalised transitional crisis. The loop in which Bob Wilson finds himself tangled is certainly a moment of crisis, of transition. Bob is a despondent student, working reluctantly on his thesis, before entering the time gate. At the end of the cycle he has assumed the role of Diktor, enslaver of humanity’s remnants. This transition is accompanied by the anxiety that characterises fin-de-siècle phenomena. Bob’s experience within the loop mirrors the “patterns of assumption” outlined by Kermode (98). Bob is promised a “great future” by his future self, who speaks from a position of privileged omniscient foreknowledge. This is reflective of the need for “prophetic confidence of renovation” during historical “moment(s) of supreme crisis” such as fin-de-siècle periods (Kermode 99). Also, much like the pessimism regarding the immediate future that arose during the nineteenth-century fin de siècle, Bob sees little positivity in humanity:

48 See Lapham and Struck for a comprehensive list of historical ‘ends of the world’ throughout Western history.

49 Kermode argues that these anxieties are “perpetual”, and reflected in any end-directed crisis. (98)
He walked over to the window and stared down into the dusty, noisy street. Half subconsciously he compared it with the green and placid countryside he had seen from the balcony where he and Diktor had breakfasted. This was a crummy world full of crummy people. (Heinlein "Bootstraps" 258)

This passage both highlights Bob’s misanthropy, and confirms his hope for renewal. His desire to return to the promised “green and placid” future, filled with delicious fruit and “gorgeous” women with “the right attitude” (239, 58), is in firm contrast with the “dusty, noisy” present, containing only “crummy people” and a girlfriend likened to “another problem he had failed to settle” (258, 57). These parallels mark Bob’s movement through the loop as a transitional crisis that is similar to the ingrained sense of turmoil that, according to Kermode, is a prominent feature of our lives ‘in the midst’. This general, transitional, yet perpetual crisis further delineates what I previously described as temporal isolation.

Temporal isolation can be described with the help of Kermode, and represents a failure of the comfort he ascribes to beginnings and endings. While we create a sense of transition within which to exist, says Kermode, we must believe that our immanent crisis can lead to a positive new ‘age’. This is where the comforting aspects of apocalypse enter, as its standard models provide a promise of such an ‘ending’. Another way Kermode discusses this reassuring ‘fiction’ of transition is through his concept of "kairos" (46). Kairos is a “point in time filled with significance, charged with a meaning derived from its relation to the end” (47). In other words, it is akin to the moment between the ‘tick’ and ‘tock’ of a clock, which would be meaningless without the ‘beginning’ and ‘end’ created by the sound of the timepiece. For Kermode, kairos is opposed to chronos, which is "passing time"—successive moments that give way to more passing moments (47). Kermode discusses kairos in a way that links it to my use of the term ‘crisis’ in this thesis. He draws on the work of Tillich, whom he says firmly associates kairos with a “moment of crisis” that is “poised between beginning and end … an epoch when ‘the foundations of life quake beneath our feet’” (46-47). Similarly, I refer to ‘crisis’ as a moment of socio-cultural (and in this case, personal) upheaval, such as World War II and the onset of the nuclear age—transitional moments ‘in the middle’, which were given meaning owing to their eschatological or teleological significance. Yet, during these crises the ‘end’ never comes; an historical overview
shows that these moments of transition simply give way to more kairoi. This process, in which the comfort of a promised end has failed, is akin to temporal isolation: a perpetuality with denied endings, like waiting for a ‘tock’ that never comes. Such a perceived lack of resolution during historical kairoi is partly the cause of the anxiety that is evident at such moments—as seen in the isolating ‘frozen time’ of WWII described by Duis, and, as I will demonstrate shortly, in Heinlein’s own response to the onset of the war. Kairo is comforting and given meaning because of beginnings and ends, yet can understandably evoke unease when such endings never arrive. This structure, the temporally isolating nature of kairos with a denied ending, is reproduced by Bob’s predetermined loop.

The causal loop in ‘By His Bootstraps’ reproduces the denial of kairos’ comforting end—the sense of temporal isolation that is central to Kermode’s concept of generalised, immanent crisis. From Bob’s personal perspective, his crisis does have a conclusion. His transitional crisis leads him inexorably towards a “great future” (Heinlein “Bootstraps” 276); following him linearly through the loop, via the narrative’s third-person, limited perspective, his ‘crisis’ results in an ending: he comes to accept his role as Diktor. However, keeping an omniscient perspective, the only way to view the loop as a whole, we see that the process of transition is reset just as it seems to be complete. From ‘above’ Bob’s timeline, like a circle drawn on a sheet of paper, has no beginning and no end. This viewpoint is privileged in the story. It opens with the line “BOB WILSON DID not see the circle grow” (“Bootstraps” 231), and neither, initially, does the reader. We follow Bob linearly as he meets his future, and then past, selves. At story’s end, Bob-as-Diktor experiences the first meeting between Diktor and young-Bob from the opposite perspective. He repeats the words that initially enticed Bob to follow Diktor’s instructions: “There is a great future in store for you and me, my boy—a great future!” (“Bootstraps” 276). With a repetition of that final phrase, “A great future!”, the story ends. Left with such repetition, the sense of never-ending crisis is amplified. The story ends with a literal return to the beginning of Bob’s crisis, creating a sense of a transition that can never be completed. It becomes apparent that when this ‘new’ young-Bob becomes Diktor, he will meet another young Bob, who will travel the loop and become another Diktor, and so on perpetually. This viewpoint leads to an infinite loop, a circle drawn over and over again. Every
Diktor is preceded by a Bob, who is preceded by a Diktor, and so on. Bob himself leaves questions of origins unanswered when pondering the ontological paradox of the notebook:

The physical process he had all straightened out in his mind, but the intellectual process it represented was completely circular. His older self had taught his younger self a language which the older self knew because the younger self, after being taught, grew up to be the older self and was, therefore, capable of teaching.

But where had it started? ... Who wrote the notebook? Who started the chain? ("Bootstraps" 275)

Such questions of origins must be left lingering, for within the loop there is no origin or ending, only transition. The crisis can never, from this perspective, result in an ‘ending’. As such, the loop can be considered an allegorical representation of the ubiquitous turmoil, the perpetual moment of crisis that Kermode claims is central to western culture. Without an ending (or a beginning), *kairos* is *chronos*, and becomes a ‘pointless’ series of moments, or “one damn thing after another” (Kermode 47). Similarly, the causal loop is seen to be “continuing forever without reason or beginning” (73). George Slusser makes a similar assessment of Bob’s predicament when he notes that: “He has neither personality nor future nor the possibility of spiritual adventure. He is Heinlein’s fallen man, who is chosen only to illustrate the ubiquity of damnation” (Slusser “Fallen”) 50. The phrase ‘ubiquity of damnation’ again suggests both a sense of endless transition and the universality of Kermode’s crisis. This temporality of crisis, reproduced in ‘By His Boostraps’ is also evidenced in Heinlein’s personal correspondence from the time he composed the story. The temporality that his fictional loop reproduces is similarly expressed in letters composed in the months leading up to Pearl Harbor and the US’s entry into World War II.

The sense of temporal isolation allegorised in ‘By His Boostraps’, akin to the ubiquitous ‘transitional crisis’ described by Kermode, is evident in Heinlein’s personal anxieties in the pre-Pearl Harbor period. Letters written in the days following the Pearl Harbor attack show that Heinlein, like Bob Wilson, found

50 However, where Slusser focusses on the problems of “perpetual motion” implied in Bob’s loop, my primary focus is the temporally isolating nature of the loop (Slusser “Fallen”; Slusser “Fur Farm”).
himself within a crisis with a deferred ‘end’. Heinlein was forcibly retired from active military duty in 1935 for health reasons. When the conflict that would become World War II began Heinlein, unlike most in the science-fiction community⁵¹, wished to serve his country. He strongly considered volunteering for active duty in the Pacific prior to the USA’s official entry into the war (Heinlein Grumbles 28). In a letter to his primary publisher and friend John W. Campbell, written two days after the Pearl Harbor attack, Heinlein describes the anxiety that had been with him in the months surrounding the composition of ‘By His Bootstraps’:

The matter has been quite acute to me. For the last eighteen months I have often been gay and frequently much interested in what I was doing, but I have not been happy. There has been with me, night and day, a gnawing doubt as to the course I was following. I felt that there was something that I ought to be doing. (Heinlein Grumbles 26)

The sense of perpetual ‘gnawing doubt’ described here by Heinlein, a feeling that repeated ‘night and day’, is identical to Bob’s dilemma: both reflect being stuck in a loop of uncertainty. Before Pearl Harbor, Heinlein’s crisis had no perceivable ‘end’: the U.S. was not officially involved in the war, and even if it had been, his status in the military was void. Heinlein had no ability to affect the outcome of a repeating moment of crisis, one that was immanent, but had no clear end, and he was thus ‘isolated’ within it. As such, ‘temporal isolation’ is evident in both Heinlein’s thoughts, the ‘immanent crisis’ he seemed to be experiencing, and allegorically reproduced in the story composed at the time. This suggests that time travel narrative devices such as the causal loop in ‘By His Bootstraps’, are not purely ludic or ‘denials of the future’, but expressions of the time-centric nature of moments of upheaval, of ‘crisis’.

⁵¹Only 17% of Americans supported America’s entry into the war prior to the Pearl Harbor attack (Galbreath: 132). Heinlein was also clearly atypical amongst the science-fiction community in his fervent support for the war. He fell out with publisher and friend John W. Campbell over the war (see Grumbles from the Grave pages 29-33). Heinlein also composed a fierce response to the anti-war sentiment in SF fandom (see fanzines such as Time Binder [issue 1] and Paradox [issue 4, p4]). In this letter, he labels SF fans with anti-war tendencies “bastards” and “slackers” (Heinlein “Letter to Forry” 1-2). He also claims that they (and other non-contributors to the war effort) are “collectively and individually personally responsible for the death” of soldiers, whose “blood is on their hands” (1-2).
The generalised moment of crisis that I am examining here is deeply temporal; it modifies ontological norms surrounding the nature of change and possibility. On the one hand, as I have just argued, it denies beginnings and endings and is thus temporally isolating. However, it also implies a fixed pattern of time akin to the Block universe—a ‘prewritten’ “deterministic pattern” (Kermode 29). The imminent crisis described by Kermode can be likened to the omniscient view of the block universe, where personal timelines are observable in full. Kermode explains that the beginnings and endings provided by fictions such as apocalypse, or the “tick tock” of the clock, assign a sense of purpose to the transitional crisis we all feel that we are within (Kermode 47). In other words, when a paradigmatic structure like the apocalyptic myth is accompanied by the perception of ‘change’, it provides a “satisfying consonance with the origins and with the middle” (17). However, the traditional apocalypse is itself an unshifting paradigm. Such a “deterministic pattern” can be a source of comfort, but only if it is combined with “subtle disconfirmation and elaborate peripeteia” that comes with the perception of change (30). In chapter six I will demonstrate that the causal loop narrative device approximates this combination of deterministic paradigm and change. However, this is only possible if an ‘omniscient’ perspective of the block universe model is combined with the ‘personal’ perspective of the individual. In general, the determinism inherent in both Kermode’s generalised crisis and the block universe model, is psychologically negative.

Strictly speaking, Minkowski’s block universe model denies the possibility of free will, which form many makes it unacceptable. As mentioned above, Nahin points out that many scientists and theorists reject the model, as “it appears to be fatalism disguised as physics” (Nahin 106). At around the time of the composition of ‘By His Bootstraps’, science fiction fans discussed determinism in the letters page of an issue of prominent fanzine Paradox (Spring 1944). The conclusion of one reader was that a deterministic universe would provide “the human race” with “one less reason” for continuing existence (Karden 19). Such a bleak, unacceptable outlook is reflected in other time travel stories that use such loops. Some narratives use the lack of free will in a block universe to impact the reader by

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52 As mentioned earlier, I examine apocalypse, and Kermode’s examination of the genre as a source of comfort, in more detail in chapter six.
creating a sense of tragedy, such as in Dick’s ‘A Little Something for Us Tempunauts’. Others highlight the devastating hopelessness that accompanies a deterministic existence. In Lester del Ray’s ‘My Name is Legion’ (1942) a scientist devises a punishment for Hitler, using a time machine to trap him in a time loop. Hitler is doomed to relive the same day again and again for twenty years. The dictator has no free will and is stuck in a predetermined loop. Doomed to experience “seven thousand days, each the same day, each one step closer to madness” (del Ray 80), the punishment only ends when he is shot dead. The lack of agency drives Hitler mad, with this end result highlighting the psychologically debilitating nature of determinism. Looping time is shown to be similarly devastating. Meyers, Hitler’s tormentor, explicitly outlines humanity’s need for linearity, beginnings, and endings. Using a two-dimensional piece of paper to represent a four-dimensional block universe, Meyers draws upon it a straight line and explains:

It starts here, follows here, ends here. That is like life, machines, and so forth. We begin, we continue, we end. Now I draw a circle—where does it begin or end? Yes, followed by a two-dimensional creature, it would be utter madness, continuing forever without reason or beginning (73)

The same “utter madness” is shown to follow in four dimensions, wherein the “circle” becomes a deterministic loop in time. It is this lack of “reason”, of endlessly following a prewritten path, which marks deterministic crises as psychologically unacceptable.

For Kermode’s ‘deterministic framework’ to be an effective source of comfort, ‘subtle disconfirmation and elaborate peripeteia’ is needed: kairos’ prescribed beginnings and endings, a deterministic framework, must include an individual’s apparent freedom to change and alter events. The perception of such change is only possible from an individual’s (limited) personal viewpoint. Ignorance of the future is required for peripeteia to ‘work’, to create the tension between credulity and scepticism. This is what allows the transitional crisis to function as a comforting surrogate ‘end’, as a ‘new beginning’ can be imagined. Time travel, and in particular ‘By His Bootstraps’ causal loop, disrupts this
process, and thus allegorises the deterministic connotations of such moments of crisis. The power of peripeteia is usually maintained, even in a block universe, by an individual’s ignorance of the future. This is nullified within the loop. Knowledge of the future removes the experience of the unexpected and denies the ‘illusion’ of choice. This is akin to knowing a story before it is read: narrative peripeteia is removed, leaving only a deterministic framework. Bob Wilson interacts with three other versions of himself in his office. When he returns to his office, following his first trip through the time gate, he realises with increasing certainty that this scenario is completely predetermined. No change, no peripeteia, is possible. During the first repetition of the office scene, when the reader is privy to the thoughts of ‘Joe’, Bob expresses his need for peripeteia:

> Hearing himself refer to himself as Joe slapped him in the face with the realization that this was not simply a similar scene, but the same scene he had lived through once before—save that he was living through it from a different viewpoint. ... Wait a minute now—he was under no compulsion. He was sure of that. Everything he did and said was the result of his own free will. Even if he couldn’t remember the script, there were some things he knew “Joe” hadn’t said. “Mary had a little lamb,” for example. He would recite a nursery rhyme and get off this damned repetitious treadmill. He opened his mouth—

(Heinlein “Bootstraps” 243-4)

The absence of change comes as a shock for Bob, as he attempts to manifest a differing scenario from the one he experienced earlier. However, every attempt to enact free will and to alter his (personal) future from the one already revealed to him results in failure. As such, Bob eventually becomes aware of the futility of his actions:

> “Don’t!” Wilson pleaded. “Maybe we can break the chain even now.” But the stubborn sulky look on the other’s face made him realize how futile it was. He was still enmeshed in inevitability; it had to happen. (256)

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53 The omniscient consideration of the causal loop structure, upon which the preceding argument relies, is a key feature of ‘By His Bootstraps’. However the perpetual crisis it represents is not how Bob Wilson ultimately views his predicament. As I demonstrate in chapter six, the story also simulates Kermode’s ‘complete’ apocalypse, and its ‘comforting’ effect. That said, as I mentioned previously, the first and last sentences of the story strongly evoke an infinite loop, and leave the reader with dizzying philosophical implications and a disrupted view of reality. This prominent imagery suggests that the complete, deterministic loop structure and its distressing implications are designed to be a key focus of the story. And, as I have argued, it is these features that allegorise the temporalities of crisis.
Realising that he is ‘enmeshed in inevitability’, the conflict between a deterministic pattern and the need for change and surprise is over. Determinism wins. Bob submits himself to uncontrollable destiny; his conclusion that “[e]vents would have to work out their weary way” privileges predetermined happenings and relegates him to the role passive observer (255). This consequence of the causal loop is an allegorical representation of the temporality of generalised crisis. ‘Chronos’ is denied by Bob’s travels through time. The desired ‘tick-tock’ of change does not lead to something new, but something already known—the repetition of the same scene in Bob’s office. Without chronos, all that is left is the moment of transitional crisis. Bob’s literal inability to affect change reproduced the determinism underlying ‘kairos’. It allegorises Kermode’s deterministic framework, without the ‘illusion’ of change. Thus, along with reproducing the temporal tensions of World War Two, as I argued earlier in this chapter, ‘By His Bootstraps’ similarly allegorises the deterministic temporality of Kermode’s generalised crisis. Other writing by Heinlein, from the time he was composing ‘By His Bootstraps’, similarly points to this temporality of crisis.

The lack of agency inherent in Heinlein’s ‘moment of crisis’ is articulated in another letter to Campbell, written two weeks after Pearl Harbour:

A long time ago I learned that it was necessary to my own mental health to insulate myself emotionally from everything I could not help and to restrict my worrying to things I could help. But wars have a tremendous emotional impact and I have a one-track mind. ... Emotional detachment is rather hard for me to achieve, so I cultivate it by various dodges whenever the situation is one over which I have no control. (Heinlein Grumbles 29)

With his involuntary retirement from the armed forces, coupled with the official non-involvement of the US in the escalating conflict, Heinlein had no ability to affect the war’s outcome—he had “no control”. This same situation is reflected by the causal loop in ‘By His Bootstraps’: Bob Wilson is confronted with a situation which he cannot control—an appreciation that within the loop he is “enmeshed in inevitability”, and he despondently “realize(s) how futile it was” to attempt to create change (256). Heinlein, with hindsight, expresses the vague regret that he “should have volunteered” many months ago (Heinlein Grumbles 28). However, his attempts to do so even after Pearl Harbor were met with rebuttal. He did not want
to leave the navy originally but was forced to do so as a consequence of ill health, and even in wartime the armed forces would not take him (Patterson Jr; Heinlein *Grumbles* 27-8). For someone so fiercely patriotic and with a desire to serve like Heinlein, the failings of his body would conceivably have prompted a sense of hopelessness and lack of agency. In the face of a crisis like World War Two, a crisis that seemed all-encompassing but with no apparent endpoint, such anxiety reflects the temporalities of crisis.

These same expressions of anxiety and hopelessness, when confronted with the crisis of war, are evident in Heinlein’s ‘Elsewhen’. This story was written concurrently with ‘By His Bootstraps’ and published just a few months before, in the months leading up to Pearl Harbor. While lacking a causal loop, the story contains identical expressions of hopelessness and anxiety to those expressed in Heinlein’s letters. This thematic correlation strengthens the argument that Heinlein’s reaction to the war was symptomatic of Kermode’s generalised crisis, and that ‘By His Bootstraps’s’s loop represents a allegorical reproduction of its temporalities. In ‘Elsewhen’, an academic finds himself in an alternate-reality war zone, and becomes despondent:

... he soon realized that for the job at hand he was useless, not even fit to act as an interpreter.

He was a harmless nuisance, a pensioner—and he knew it.

The war depressed him. He was not temperamentally cut out to stand up under the nervous tension of war. His helplessness to aid in the war effort, his lack of companionship, and his idleness all worked to increase the malaise. (171)

These repeating tensions, feelings of helplessness and malaise amidst an endless catastrophe all suggest a clear role for the causal loop in ‘By His Bootstraps’. The story reproduces the temporal aspects of these tensions; it supplies a structure that at once envelops the protagonist within a crisis, while removing the possibility that that crisis will reach a satisfying conclusion. The nature of the loop, its reliance on the block model of spacetime, means that the philosophical consequences of that model are inextricably caught up in the loop itself. These consequences are a lack of agency, and an inability to affect the surrounding crisis: analogous preoccupations to those that Heinlein expressed in his letters and other
short fiction. They are also reflective of the time-centric features of general ‘moments of crisis’, periods of time when an individual or a culture experienced “the foundations of life quake beneath our feet” (Kermode 46).

Utopia and dystopia represent explorations of the present rather than the future (McNeill; Jameson “Progress”). As such, Heinlein’s ‘By His Bootstraps’, with its dystopian future and fascist imagery, represents an examination of the tensions surrounding World War II. Composed in the months leading up to the Pearl Harbour attack, the story contains an undertone of anxiety regarding the threat of fascism. The structure of the story’s causal loop represents an expression of this anxiety. Instead of culminating in an ending, the loop resets and begins anew. This perpetual cycle marks the crisis it represents with a sense of repetition, endlessness, and a denial of free will. This is an example of what I have called ‘temporal isolation’: a temporality of crisis that suggests that no future awaits, despite the feeling that one is within a period of transition.

Seemingly endless, transitional crises such as the onset of the Second World War are not unique. Moments of socio-historical crisis repeat throughout history, and these often involve similar temporalities. Most prominent during fin de siècle periods, these tensions are general ‘moments of crisis’ that can be experienced by a culture or an individual. Their temporalities, for example determinism and a deferral of endings, are allegorically reproduced in causal loop time travel fiction. The parallels between the loop structure and Kermode’s study of apocalypse evidence the generality of such crises; generalised crisis and the causal loop narrative device share a deterministic framework and the perpetual deferral of endings. This connection further highlights the allegorical mode of time travel fiction; depictions of time manipulation and paradox reflect analogous concerns that were dominant in the socio-cultural context of their production. Moving on from ‘generalised’ crisis, in the following chapter I focus on the beginnings of the atomic age. This tumultuous period of US history brought with it new fears and anxieties. These concerns were again, like the crises prompted by the onset of the War, temporally laden. The temporalities of this crisis, I will argue, are also reproduced in the era’s SF via time travel’s allegorical mode.
Chapter 3 - The Temporalities of Nuclear Fear

In the previous two chapters I examined the connection between time travel fiction and the time-centred elements of both the traumatic crisis of World War Two, and a ‘generalised’ sense of crisis. This chapter sees my focus shift to arguably the greatest crisis of the twentieth century: the nuclear age and its accompanying anxieties. Mid-twentieth-century nuclear fear was deeply temporal, and time travel SF of the period reproduced these temporalities. Numerous excellent, in-depth studies of nuclear fear have been published, such as Spencer Weart’s Nuclear Fear (1988), Robert Jay Lifton’s The Future of Immortality (1987), and Paul Boyer’s by the Bomb’s Early Light (1985). While these studies point to the connection between time and nuclear fear, the temporal nature of the crisis remains somewhat in the background. The primary connection between time and nuclear fear made by these critics surrounds the issue of humanity’s continuity. The development of nuclear technology created the very real threat that time, at least for humanity, could come to a very final end in the near future. However, the fear that technology would bring about the end of time is entwined with another temporality: the contrary anticipation of a utopian future that was similarly prominent in the nuclear age. As a result of this entwined relationship, I touch on these temporalities here, but examine them in depth in the following chapter. I have delayed their discussion as the ‘anticipation’ that surrounded the bomb marks a shift from my examination of crises’ temporalities. It signals a shift to phenomena that served to mitigate or alleviate the negative impact of such crises. As I shall discuss, this is a secondary role of time travel fiction: along with reproducing the temporalities of crisis, fictional time travel devices provided allegorical representations of these crises’ ‘modes of alleviation’. So, with examination of the most prominent temporality of nuclear fear delayed, this chapter focuses on previously unexamined temporal aspects of this crisis.

In this chapter I use prominent studies by Boyer, Bourke, and Weart, and others to delineate two key time-centred features of nuclear fear: the contraction of the scale of time and the conflation of the future and the past. Both of these features problematise notions of causality, possibility, and change, and as I will

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54 This relationship is in some ways ‘contrary’ in a Blakean sense.
demonstrate, are reproduced in atomic-age time travel fiction. While focussing on *City at World’s End* by Edmond Moore Hamilton (1950) and Isaac Asimov’s *The End of Eternity* (1955), I extend my analysis to include numerous short stories from John W. Campbell’s *Astounding Science Fiction* and other pulp magazines. These texts, I argue, use representations of time travel to reproduce their contemporary nuclear anxieties. This hitherto-unexamined role of time travel fiction is another example of the ‘allegorical mode’ of the narrative device. Nuclear-age time travel fiction engaged with the crises of the period not simply by depicting a nuclear conflict, but by also simulating the temporal consequences of the new nuclear reality. The first section of the chapter locates my approach in terms of Nuclear Criticism’s debate regarding the nuclear referent, before later sections examine specific temporalities in detail. It has been argued that fictional depictions of an explicit nuclear referent are important cultural phenomena (Ruthven; Luckhurst). Conversely, it has been claimed that a ‘real’ nuclear referent is impossible, thus fictions that attempt to depict such a referent have no utility (Derrida, Porter and Lewis). It is my claim that time travel narrative devices play an allegorical role, and reproduce the temporal aspects of nuclear fear. Thus, they serve a useful purpose that bypasses the utility of any attempted depiction of the nuclear referent. It is not important whether the nuclear referent in these stories is ‘real’, fantastical, or absurd. The time travel elements of these stories reproduce the temporalities of nuclear fear and thus provide insight into contemporary reactions to this deeply temporal crisis.

**The temporalities of nuclear fear & the nuclear referent**

The onset of the atomic age brought with it an alteration of the time scale—a figurative ‘shrinking’ of time—along with a sense of conflation between the future and present. These temporalities of nuclear fear are represented in time travel narratives of the early atomic age. In later sections of this chapter I will explicate these temporalities, and time travel fiction’s reproduction of them, in detail. However, I will first outline the utility of this chapter’s argument. It serves a purpose in promoting these fictions—whether pulp (*City at World’s End*) or accepted as ‘literary’ (Bradbury’s ‘A Sound of Thunder’ [1952])—as having a
distinct and important social function. They add to a key debate in Nuclear Criticism about the usefulness of literary representations of the nuclear referent. My notion of an ‘allegorical mode’ of time travel fiction, of the narrative device’s role in reproducing the temporalities of the nuclear crisis, demonstrates that it is not important whether these texts contain or realistically depict the nuclear referent. The allegorical mode of time travel fiction functions as a reflection of contemporary nuclear anxiety whether the text is dependent upon, or independent of, the nuclear referent. As such they are interesting artefacts that provide insight into the temporal elements of nuclear fear.

This allegorical mode of time travel fiction is evident in both texts that contain and those that avoid explicit nuclear imagery. There was certainly a significant amount of nuclear-focused SF produced in, and before, the atomic age, yet it was not just these that engaged with the new nuclear reality. As Luckhurst notes: “H. Bruce Franklin opens a special [1986] issue of Science Fiction Studies on nuclear war with: ‘The dubious credit for inventing nuclear weapons and projecting nuclear war belongs indisputably to SF’” (91). However, in time travel stories from the period, the allegorical mode is evident in both stories that explicitly present a nuclear incident, such as Edmond Moore Hamilton’s City at World’s End (1950), and those that minimise nuclear imagery, including Asimov’s The End of Eternity (1955). As I will demonstrate in this and the following chapters, despite its dearth of nuclear representation Asimov’s story is still very clearly a reaction to the onset of nuclear age. As with chapter one’s examination of trauma, and chapter two’s consideration of ‘generalised crisis’, these stories’ reproductions of nuclear fear are located in their depictions of time travel.

The connection between the temporalities of nuclear fear and both nuclear and seemingly non-nuclear time travel narratives is important, as it bypasses a key debate surrounding such texts’ utility. Derrida would most likely contest the usefulness of texts such as City at World’s End, and similar stories that “offer direct and realistic descriptions of a ‘real’ nuclear catastrophe” (28). This is because, Derrida argues in his seminal contribution to nuclear criticism, “nuclear war has

55 While Nuclear Criticism is not a currently prominent field of study, meaningful additions to the project can still be made.
56 See Brians for a detailed examination of nuclear-themed SF.
no precedent. It has never occurred, itself; it is a non-event" (23). As such, the "terrifying reality of the nuclear conflict can only be the signified referent, never the real referent (present or past) of a discourse or a text" (23). On the other hand, theorists including Solomon and Ruthven have argued that it is imperative to "preserve the nuclear referent and to resist efforts to textualise it out of existence" (Ruthven 174). The merits of SF, and indeed pulp SF, in depicting the ‘nuclear referent’ remain highly debateable. However, my argument mediates this debate; the allegorical mode of time travel fiction’s engagement with nuclear fear can stem from both the signified referent and the ‘real’ referent. In other words, this role of the subgenre (its reproduction of the time-centred aspects of nuclear fear) is evident in both non-nuclear and nuclear-themed SF of the atomic age. As such, time travel fiction can be considered an important artefact of the period. My view parallels that of Luckhurst, who states that Nuclear Criticism should not (as Derrida wishes it to, indirectly) abandon SF: “Nuclear Criticism cannot afford to ignore or displace these texts, for to do so may be to collude in a structurally equivalent catastrophe that its project is decisively committed to averting” (96).

Whether or not the project of Nuclear Criticism is still relevant, and whether the depiction of the nuclear threat is overt or subtle, time travel fiction of the 1940s and 50s played a significant role in responding to the atomic crises within which they were produced. Particularly, these stories allegorise the time-centred aspects of nuclear fear. Nuclear fear has an under-examined temporal core. As with the other crises examined so far in this thesis, time travel is the perfect subgenre for the conscious or unconscious expression of this crisis’ temporalities.

Time travel narratives force cognitive dissonance as a result of confrontations with altered temporal scales, juxtaposed times, and the presentation of utopian or dystopian futures as literally ‘next door’ to the present. As I will argue, equivalent ‘temporalities’ were central to the ‘cognitive dissonance’ that was nuclear fear in the 1940s and 50s. Despite any attempts to depict “realistic descriptions” of the ‘real’ nuclear referent, these texts’ primary utility is their reproduction of these contemporary anxieties. It has been well

57 Campbell would disagree: he was of the opinion that “the first (atomic war) began on August 6th, and ended very shortly” (“Concerning” 5). However, here Derrida is ultimately arguing that there can be no referent for the ‘final’ nuclear end.
documented by Suvin, Jameson\textsuperscript{58}, McNeill, and others that SF’s primary aim is not the depiction of the future, but the use of such images to tease out the limits of the present. SF prompts re-assessment of one’s philosophical, ideological, or sociological position (Suvin \textit{On the Poetics} 375). As such it is the effect, and not the referent, that is most important when considering whether SF is worthy of study. Derrida is concerned with how texts “multiply their strategic maneuvers in order to assimilate that unassimilable wholly other” (28). Here, my focus is not on the arguably unknowable nuclear referent, but on the ‘maneuvers’ found in time travel fiction that engage with the swirling, complex reactions created by the potentiality of that referent. While these texts’ reproduction of the temporalities of nuclear fear may be largely unconscious, their presence in the period’s time travel SF provides these often-maligned texts with renewed importance. Nuclear fear was a reaction to the terrifying, sublime potential of the bomb. Time travel fiction of the 1940s and 1950s reproduces the temporalities of that fear.

The alteration of time

A key temporality of nuclear fear was the alteration of the time scale. Time can be perceived to change during moments of crisis or upheaval. Stephen Kern has detailed this process in terms of propagation of technology in the late-nineteenth century. Kern argues that “[t]echnological developments are temporally specific events that often affect great numbers of people” (6). He goes on to examine changes in perceptions of time prompted by technology, claiming that cultural phenomena imitate these changes. For example, the popularisation of both the electric light and cinema are said to have problematized the notions of night and day, and thus the ‘arrow of time’, during the Victorian \textit{fin de siècle}. In other words, technology during this period of crisis destabilised the idea of a single, universal public perception of time and made it more “private” or subjective. The nature of time was redefined “as heterogeneous, fluid, and reversible” (34) as accessible

\textsuperscript{58} Jameson’s Unknowability Thesis is similar to Derrida’s insistence on the unknowable nuclear referent. As Fitting paraphrases, for Jameson “utopia would require such radical change as to render it unknowable” (43). He also considered pulp SF “sub literary”, restricting his analyses to ‘literary’ SF such as Ursula LeGuin (Jameson \textit{Archaeologies} 316). Despite this bias he does acknowledge SF’s role in helping groups at various points in history to “interrogate” and “explore” their socio-historical juncture. (Jameson “Progress” 148)
artificial lights and projected images disrupted the solidity of the night/day duality. In this thesis’ introduction, I argued the same point to illustrate the basic allegorical mode of time travel fiction. I demonstrated that the eschatological crises of the mid-to-late nineteenth century were strongly correlated with the rapid expansion of the time scale. Developments in geology and thermodynamics expanded time in both directions. The age of the Earth was given an enormous new value, shattering the old 6,000 years ascribed by religious tradition. At the same time, Lord Kelvin’s developments in thermodynamics introduced the concept of the heat death of the sun. This unavoidable, physical end to life on earth, was situated an inconceivable tens of millions of years into the future, stretching time immeasurably. This expansion of time became entwined with the central apocalyptic social crises that arose during the Victorian fin de siècle. I demonstrated that the temporality of this crisis was analogised in ‘The Time Machine’ and other proto-science fiction representations of time travel. With the development of nuclear technology in the 1940s, time altered in a similar manner to the nineteenth-century changes identified by Kern.

In contrast with the expansion of time in the nineteenth century, the bomb significantly ‘shrank’, or contracted time. It demanded the appreciation of massive change occurring in an extremely small time frame. As Ken Ruthven points out:

The revelation that it took less than three seconds to destroy Hiroshima effects so profoundly a nuclearisation of temporality that those fifteen minutes of fame which Andy Warhol said everybody would experience in future seem by comparison an eternity. (82)

In an instant, the millions of years before the conflagration promised by Lord Kelvin were reduced to mere seconds. The unimaginably small time scales of nuclear reactions and the subsequent nuclear blast instantly altered the perception of time. As Andrew Feenberg states, nothing “has ever accelerated time like the atom bomb. ... In the early days there is a strong conviction that nuclear war is coming and with it the end of history” (10). The notion that a new technology could dramatically alter time, by ‘accelerating’ it and (as I discuss in depth in the following chapter) provide it with an imminent ‘end’, marks the development of

59 Actually, the time scale had been expanded even further in the near-century since the publication of Kelvin’s On the Age of the Sun’s Heat in 1862
nuclear technology as, using Kern’s terminology, a ‘temporally specific event’. Following Hiroshima, the timetable of the apocalypse was remade to encompass unimaginable brevity. This alteration to the time scale, the growing fear of time ‘accelerating’ towards an end, was analogised in Hamilton’s *City at World’s End*. In the novel, a nuclear blast leads instantly, from the protagonist’s perspective, to an apocalyptic wasteland and dying earth. In Wells’ novel, the time traveller witnesses the (accelerated) passage of millions of years, and describes the movement of the sun and stars across the sky with increasing rapidity. This imagery highlights the expanded scale of nineteenth-century time. Here, while the story’s characters visit a similarly distant future, the change from an idealised America to a dead planet is instantaneous, like the contracted time scale described by Ruthven and Feenberg. This brief example shows just one way that time travel fiction reproduces the nuclear age alterations to time. In the years following the bomb, each moment of time became one that potentially preceded the end of the world. This fear is literalised in Hamilton’s novel. However, there is more to this temporality than simply a ‘short time frame’. The contraction of the time scale during the nuclear age was entwined with an unbalancing of the notion of cause and effect.

With the altered time scale came an alteration of cause and effect. The scale of destruction seen at Hiroshima, in comparison with its cause, was without precedent. At one end of the “three seconds” was a single bomb, and at the other was the effect: the destruction of an entire city (Ruthven 82). So, accompanying the unimaginably small time scales of nuclear reactions was the image of a small cause creating a large effect. This is perhaps best represented by the later-atomic age “belief that the world could be ended by pressing a button” (Wojcik 103). The bomb was thus aligned with the “push-button efficiency of dishwashers, television sets, washing machines, and vacuum cleaners” (103). This image reflects the contraction of the time scale; with appliances the effect follows the cause, the pushing of the button, seemingly instantly. However, whereas the button on the washing machine starts a controllable cycle, ‘the Button’ could potentially end the

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60 And, of course, Nagasaki
world. As Kern outlines, electric lighting contributed to an alteration of the conception of time that favoured the heterogeneous and private, a fluid notion of time. The push-button technology of the 1940s and 50s had a similar impact, easing domestic pressures and providing more private time and autonomy. However, ‘the Button’ in a nuclear sense problematised this relationship between a small action and its effect by enormously altering the ‘effect’ part of the relationship. While the ‘cause’ was linked with the convenience of a ‘button’ and the completion of a domestic task, the feared ‘effect’ in the nuclear age was mass destruction. As such, this nuclear image is homogenising, rather than the heterogeneousness described by Kern. The connotations of the nuclear threat went far beyond the individual household, and promised uncontrollable, universal devastation. However, this effect still came from a ‘single’, domestically recognisable source (the button image). The combined temporality on display in this image, with enormous consequences coming very quickly from everyday actions, is central to one of time travel’s most famous tropes: the ‘butterfly effect’.

The altered perception of causality that accompanied the bomb is represented in time travel narratives by the butterfly effect. This is the idea that an event that entails an extremely brief moment of action or carelessness could apocalyptically alter the lives of billions and affect the entire future. The most famous example of this effect in time travel fiction is Ray Bradbury’s ‘A Sound of Thunder’ (1952). In Bradbury’s story, a time traveller’s apparently benign killing of a butterfly millions of years in the past radically transforms his present from a liberal democracy into a fascist state. Throughout the narrative the Time Safari’s leader, Travis, gives a number of examples of how a small action, such as “kill(ing) one mouse” could affect all of history (Bradbury “Thunder” 78). In a grim warning of the power of temporally brief actions, he says: “Step on a mouse and you crush the Pyramids. Step on a mouse and you leave your print, like a Grand Canyon, across Eternity ... [M]essing around in Time can make a big roar ... in history”

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61 As such it is an example of what Stanislaw Lem termed an ‘anti-ergodic’ hypothesis of history (Lem 147)

62 The source of the term ‘butterfly effect’ is connected to the development of chaos theory in 1963 to describe dynamic system’s sensitive dependence on initial conditions, 11 years after Bradbury’s story was first published. It was adopted to describe this time travel trope as both it and chaos involve a small change in the conditions of a system, which in both cases creates unforeseen and sometimes-drastic results.
Such an image, of a small change in time having a momentous impact—of a brief event causing massive, ‘roaring’ destruction, mirrors the temporality of nuclear fear. The day after Hiroshima, years before the hydrogen bomb would make nuclear obliteration a possibility, news reports expressed analogous fears. Boyer notes that a Milwaukee Journal editorial on August 7, 1945 speculated about “a self-perpetuating chain of atomic destruction” that, like “a forest fire sweeping before high winds,” could obliterate the entire planet (Boyer 5). Like the death of Bradbury’s butterfly, the birth of the atomic age, exemplified by the act of dropping a single bomb, prompted fears of sweeping, destructive change that would forever alter human history.

This alteration of the time scale, the rapid and apparently disproportionate changes caused by a ‘small’ event, is similarly reproduced in The End of Eternity. A prominent feature of the novel is the near-instantaneous alteration of the future via the Eternals’ ‘Reality Changes’. Here, desired futures are calculated, and time travellers alter events to bring these futures about. The most desirable of these changes are the ones that involve the most innocuous acts—such as moving a jar from one shelf to another, or adjusting the clutch on a vehicle—which can create wholly new timelines, avert wars, and erase or alter the existences of billions of people (Asimov Eternity 8, 33). The effects of the Reality Changes are presented as equivalent to the damage of the bomb itself. The worst-case scenario following the development of the bomb was nuclear annihilation, and the imagery surrounding the Reality Changes themselves similarly paints an apocalyptic picture. After an alteration in time, the resulting change happens almost “instantly” (60). One reality shifts out of existence, with a new one taking its place. The Changes are described as a chain reaction, a small event that “ripples” out, “spread(ing) wider” until all of Reality is affected (59). This depiction of the alteration of time recalls both the reality of nuclear fission and the destructive ‘self-perpetuating chain’ foretold by the Milwaukee Journal. A common form of nuclear fission involves the splitting of uranium-235 atoms via their interaction with a neutron, each of which produces three more neutrons (and a vast amount of energy) (Cottingham and Greenwood 118). These neutrons interact with more uranium atoms, which split and create nine neutrons, and so on. This exponentially growing chain reaction can be visualised as ‘ripples’ in a pond growing larger and larger, even though
they began with one pebble, much like Asimov’s imagery. Similarly, the story’s protagonist Andrew Harlan notes that a plotted Change, the movement of a single jar, has, as desired, “blasted” an old Reality out of existence (Asimov Eternity 59). Such a chain reaction, predicated on a small event and resulting in an all-consuming ‘blast’, is a precise description of the nuclear reaction that powers atomic weapons. Resultantly, suggestive of the possible effects of nuclear war, billions of lives are changed, with millions “so drastically affected as to be considered new individuals” (8). Reality Changes, and the butterfly effect of which they are an example, are representative of the alterations that time underwent in the nuclear age. They literalise the imbalance between cause and effect, and the rapidity of change, connoted by the detonation of a nuclear bomb.

This use of the butterfly effect to reproduce the shrunken time scale of nuclear causality is not its only allegorical mode. Another time travel story from the same period, William Tenn’s ‘Brooklyn Project’ (1948), uses the butterfly effect in a way that pre-empts the fear of radiation. While radiation’s ability to cause generational genetic mutations had been well known since 1927, it wasn’t until the late 1950s that its effects became prominent fears in the US (Bourke 262). Following the serious problems with fallout after nuclear tests in Nevada and the Bikini Atoll, it was widely believed that “continued (nuclear) testing jeopardised the health of future generations” (262). This aspect of nuclear fear again represents a lopsided cause and effect relationship, and is thus relevant to this examination of the phenomenon’s temporalities. Radiation is invisible to the naked eye, yet it can potentially severely impact innumerable generations. In Tenn’s story the butterfly effect analogises this process, with a minimal cause resulting in the mutation of human kind. Here a group of reporters is invited to witness the “first large-scale incursion into time” (240). A camera is sent far into the past, while the demonstrating official addresses the possibility of changes to the timeline: “one of the fears entertained about travel to the past was that the

63 I’m focusing here on nuclear fear/anxiety as a cultural phenomenon. However, Asimov’s novel also represents a response to the emergence of nuclear science/technology, and the fears it created, which I discuss in chapters four and six.

64 A pseudonym used by Philip Klass.

65 This narrative predates ‘A Sound of Thunder’ by four years, yet Bradbury’s tale remains the exemplar of the butterfly effect.

66 A ‘crisis’ analogised in 1950s SF cinema, including in The Thing from Another World (1951).
most innocent-seeming acts would cause cataclysmic changes in the present” (247). This depiction of the effects of time travel approximates the fear of radiation, wherein an invisible, innocuous phenomenon (and therefore one that is ‘innocent-seeming’) in the present would cause mutations and health problems for ‘future generations’. The story similarly evokes the ‘unknown’ nature of radiation. One can be affected by radiation, but cancer and other mutations may not show themselves for many years. This deferral of effect is evident when the official triumphantly dismisses the fear of easily changeable history:

“See,” cried the thing that had been the acting secretary to the executive assistant on press relations. “See, no matter how subtly! Those who billow were wrong: we haven’t changed.” He extended fifteen purple blobs triumphantly. “Nothing has changed!” (251)

Since the time probe has re-written history, the mutation of humanity remains unknown to the gathered crowd. In this instance, the butterfly effect represents the fact that genetic mutation remains unknown to those who are exposed to radiation. Also central to this example is the use of time travel to present both cause and effect within the same timeframe. With the ‘cause’, the time probe, sent far into the past, the effects of countless years of ‘mutation’, or changes to the timeline, are seemingly near-instant. It is just moments after sending the probe that the official and all reporters mutate beyond recognition. They become “bloated purple bodies” that liquefy and solidify at will (250). This use of time travel therefore conflates the minimal cause and massive effect that characterises the fear of radiation and nuclear fallout. As such it centralises the contracted time scale, parcelling the fear of imminent doom with the new, apparently unequal relationship between cause and effect that accompanied the atomic age.

The problem of radiation in the 1950s has parallels with the fin-de-siècle fear of degeneration. In the late nineteenth century it was hypothesised that Darwin’s evolutionary theory supported the possibility that species might evolve backwards into less complex, or degenerate forms. Proponents of ‘degeneration’ included Edwin Lankaster, who warned in 1880 that: “High states of civilisation have decayed and given place to low and degenerate states ... the most barbarous races, such as ... the Bushmen, and even the Australians ... exhibit evidence of being descended from ancestors more cultivated than themselves” (4). While the hypothesis saw little scientific support, and was at best an attempt to scientifically
justify imperialist attitudes, it became a highly influential social theory. It was also a key temporality of the period; popular nineteenth-century texts such as Max Nordau’s *Degeneration* (1892) integrated the idea into the *fin de siècle’s* preoccupation with humanity’s continuity. In terms of time, the notion of degeneration marks the history and future of such ‘barbarous races’ as a downward spiral as time continued. Just as Wells’ *The Time Machine* juxtaposes this temporality with contemporary social issues, nuclear age time travel allegorises the degenerative connotations of the anxiety surrounding radiation.

The fear of degeneration as a result of radiation was prominent during the atomic age. As Oakes and Grossman have outlined:

> ...[J]ust one day after the bombing of Hiroshima, Hanson Baldwin, the military correspondent of *The New York Times* ... concluded his article with the speculation that atomic energy might produce a world in which “we shall become—beneath the bomb and rockets—a world of troglodytes.” (372)

The quote that Oakes and Grossman highlight here suggests a link between this new fear and the contraction of the time scale. Baldwin’s concern mirrors that of Edwin Lankaster, yet while evolutionary change only occurs over vast tracts of time, Baldwin infers change in the near future. Continuity exists between his ‘we’ and the ‘world of troglodytes’ that he predicts. The only interjection between the two is contemporary technology of ‘the bomb and rockets’. This implies that degeneration was feared to occur within his lifetime, rather than in the more distant future prescribed by Lankaster’s pseudo-Darwinism. The fear that Oakes describes and the *fin-de-siècle* concern with degeneration are linked by science. Booker points out that with both periods influenced by great scientific advances, Darwinism and nuclear technology respectively, it makes sense that degeneration saw a “remarkable resurgence in the 1950s” (9). The link between the re-emergence of this fear and radiation is also made clear:

> Vaguely aware that evolution was driven by mutation and that mutation could be caused by radiation, Americans in the 1950s put two and two together and concluded that radiation could cause evolution, or (more probably, given the negative resonances of radiation in the decade) degeneration. (9-10)

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Nordau was primarily concerned with moral degeneration, but he used Darwinism to provide his arguments with authority.
Again, this renewed fear of degeneration is connected to the contracted time scale of the nuclear age. The mutations that Darwin outlined were, generally, slow reactions to natural processes. The radiation that was a by-product of nuclear testing, on the other hand, was the result of human intervention into a natural process. This contrast, coupled with reports of the very real effects of radiation on Japanese fishermen and Native Americans, suggests a reason for the contraction of the Darwinian time scale. The immediacy of destruction that the bomb represented, and the huge amount of radiation it unleashed, led to the fear that mutation could cause humanity to degenerate sooner rather than later. It is this fear that is expressed in a young Jonathan Rosenbaum’s ‘Now and Then’ (1957).

‘Now and Then’ is a very short story that neatly reproduces the nuclear-age fear of degeneration. Most SF of the period depicted radiation-induced mutation as evolutionary, rather than a prompt for degeneration (Brians). However, time travel was also used to express fears of degeneracy. Rosenbaum’s ‘Now and Then’ aligns with the fear expressed by Hanson Baldwin shortly after Hiroshima. In the story, a time traveller journeys to an unknown point in time. There he finds:

Not towering buildings, blotting out the sky with artificial majesty. No machines – only nature, undistorted by man.

I saw, in the distance, a brawny man in a cave, clothed in animal skins. He was rubbing two sticks together to build a fire to cook what he had just killed. This must be around 100,000 B.C., I thought. Man has discovered fire. (Rosenbaum)

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68 The Japanese addressed this crisis in SF such as Godzilla, King of the Monsters! (Honda 1956). The depiction of the effects of radiation and other nuclear effects in such films, and in American creature features such as Them! (Douglas 1954) marks a contrast between SF film and literature of the period. In general, SF stories and novels were much more positive regarding science than SF film. While such films’ use of monsters/aliens/giant creatures warned of the consequences of man meddling with science, SF literature, and especially pulp SF, was largely pro science. I return to this point when addressing utopia and the bomb in the following chapter.

69 As such it is an example of the ‘anticipation’ of a superior future that many felt awaited humanity due to nuclear technology. The connections and contrasts between such anticipation and nuclear fear is the focus of the following chapter.

70 Brians points out that “By far the most common mutation to be induced by radiation in SF is not blindness or limblessness; it is telepathy”. (256)

71 Rosenbaum wrote the story when he was thirteen years old. As Wojcik points out, teenagers were especially prone to nuclear fear. (129)
This vision of prehistoric times is put into context when the traveller returns to his present. There he is informed that he did not travel into the past, but to fourteen years in the future. In just fourteen years human kind has reversed a hundred thousand years of evolution. This abbreviated time scale, depicted literally via the protagonist’s venture through time, reproduces the “nuclearisation of temporality” in which “the end of history” was expected at any moment (Ruthven 82, Feenberg 10)—the new time scale of the atomic age, wherein vast, destructive change was thought to be possible at any time.

Along with thematic resonances with radiation and mutation, these stories illustrate a basic consonance between time travel and the disruption of temporal norms in the nuclear age. The simple ability of time travel to conflate two time periods allows for the signification of the central, time-prompted aspect of nuclear fears. The title of Rosenbaum’s story, ‘Now and Then’, summarises this conflation. This particular temporality of nuclear fear is about ‘now’ and ‘then’: the questions of what will be different ‘then’, and of exactly how soon ‘then’ will be. In the nuclear age, and in these stories, the ‘then’ was feared to be immensely different, and it was thought to be very close indeed. The central aspect of time travel fiction is the ability to visit, or describe, or interact with both ‘now’ and ‘then’. This may suggest that the genre therefore involves a built-in preoccupation with a desire to do just that. However the correlations between these stories and nuclear fear suggest that it would be better, as Jameson says of SF generally, “to register this generic emergence as the symptom of a mutation in our relationship to historical time itself” (Jameson “Progress” 149). It should also be noted that in all these examples it is not the ‘real’ nuclear referent that is important. Neither ‘A Sound of Thunder’, ‘Brooklyn Project’, nor ‘Now and Then’ contains any overt representation of nuclear technology. The End of Eternity has at its core strong nuclear themes, but they remain in the background for most of the novel. Derrida finds that the impossibility of a ‘real’ nuclear referent means that the nuclear epoch is best elucidated in classic literature, by writers such as Joyce, Mallarmé, and Kafka (27-28). However these ‘low-culture’ texts similarly sum up a central

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72 ‘A Sound of Thunder’ was an exception, with its first publication in the mainstream magazine Collier’s. However, ‘Brooklyn Project’ was rejected by “all of the better-paying markets”, including the prominent pulps, before eventually finding a publisher. (Malzberg 237)
aspect of the new nuclear reality. The bomb changed time, and changed the notion of cause and effect. This tension finds expression in a subgenre that allows for the literal contraction of time, and for the alteration of reality via minor actions.

The novum and the problem of SF

A second prominent anxiety that arose during the early atomic era was the perception that the world was changing too quickly. The breakthrough in nuclear technology brought with it a sense that anything was possible. Effectively, what was thought to be the domain of the ‘future’ was seen as possible ‘today’. Boyer highlights the public anxiety that accompanies this increased rate of change, noting that in post-Hiroshima “letters-to-the-editor in the nation’s newspapers ... ‘Science a Menace’ and ‘Science Moving Too Fast’ were typical captions” (269). While there is some overlap with the ‘altered time scale’ I discussed previously, this particular temporality of nuclear fear is different. The primary anxiety at play here is not the shrinking of time; it is not centred on a reduction in the time it takes for world-changing destruction to occur, nor is it about cause and effect. Instead, this fear amounts to an inability to cope with the future. It is a sense that the future is happening ‘now’, and that the world isn’t ready for it. As such, this temporality of nuclear fear is an inversion of the ‘hope’ projected at the 1939 World’s Fair. Here, the “World of Tomorrow”, of the Futurama, was said to be just 20 years hence (Kihlstedt 106). In the Futurama exhibit, patron’s chairs were referred to as “time machines”. They took visitors on a 15-minute conveyor belt ride touring the “City of 1960”; the public was told that America has the “men, money, materials and skills” to create such a future “if they will” (106). Even the exhibit’s commentary evoked time travel:

In a moment we will arrive on this very street intersection--to become part of this selfsame scene in the World of Tomorrow--in the wonder world of 1960–1939 is twenty years ago! ALL EYES TO THE FUTURE. (107)

In a similar manner, Lowenstein describes the role of ‘low culture’ horror films, which are considered ‘unworthy’ by many critics. He claims, as I do, that such texts are socially significant due to their allegorical function. (9)

See the following section for an examination of the fear of science and technology itself.
Following the bomb, such astonishment at the amount of change that could occur in such little time shifted from hope to fear. As I will show, like the period’s other temporalities, this aspect of nuclear fear was reproduced in the time travel stories of the period. However to first solidify the point that the changing world of the atomic age was a deeply temporal concern, I shall examine the problems that this aspect of nuclear fear posed for the SF community itself.

The technological breakthrough represented by the bomb suggested a problem with the function of SF. SF is about change, as Darko Suvin implies in his seminal study of the genre, *Metamorphoses of Science Fiction*, in which his notion of the ‘novum’ is central. The fictional novum “(novelty, innovation)” is complex, but at its core the term “refers to a historically unprecedented and unpredicted ‘new thing’ that intervenes in the routine course of social life and changes the trajectory of history” (Suvin *Metamorphoses* 63; Csicsery-Ronay 5-6). This fictive ‘new thing’ must be a possible extrapolation of present technology and society. As such it is essentially the representation of change. The role of the novum is to create cognitive dissonance, to prompt the reader to reassess reality (Suvin *Metamorphoses* 61). It is also the second of Csicsery-Ronay’s ‘Seven Beauties’ of science fiction; its prominence in the work of these two eminent SF critics marks the novum as central to SF. The novum also indicates the primary problem that the bomb posed for the SF community. For SF to ‘work’ in the ways described by Suvin and Csicsery-Ronay, the fictive novum needs to be “historically unprecedented and unpredicted” (Csicsery-Ronay 5). The bomb brought the future rushing towards the present and made it seem like anything was possible. Essentially, the novum momentarily seemed to be an impossibility as the future was ‘now’. Momentarily, it seemed that the SF project was ‘complete’.

For the SF community the problem of the bomb stemmed from its effect of conflating the future and the present. This effect is described by Ken Ruthven in *Nuclear Criticism*:

> Although instruments can measure the various stages of a nuclear reaction in intervals of milliseconds, human beings experience such an event only as instantaneousness. As

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75 The role of the novum is therefore analogous to the ‘apocalyptic imagination’ of Ketterer, as discussed in the previous chapter. See his excellent *New World’s For Old: The Apocalyptic Imagination, Science Fiction, And American Literature* for more.
such it destroys that slowmotion time-sense which our language mimes in the tense-

system of its verbs, which separate out a past that was from a present that is and a
future that will be (81).

The ‘instantaneousness’ that Ruthven describes here is likened to the nuclear
reaction itself. However a similar destruction of time, with the simultaneity of
present and future, was prompted by the possibilities that came with nuclear
technology. The shrinking gap between portents and reality was central to
wartime SF, and especially to Campbell’s Astounding. The magazine published
numerous stories that predicted the destructive potential of nuclear technology76.

As mentioned in my introduction, in 1943 the Astounding office was raided by the
FBI, following the publication of ‘Deadline’ by Cleve Cartmill (Clute 107). The
similarities between the story and the Manhattan Project were deemed by the
authorities to be so close as to be suspicious. Such a conflation of the future and
the present is similarly evident in comments by regular Astounding contributor
Chandler Davis. In a recent interview, Davis articulated the SF community’s initial
response to the bomb: “... it was a reaction that [writer Theodore] Sturgeon had.
And which I had, too, for a couple of days ... my first response was, ‘Heyyy, we
did it!’” (Lukin). What Davis is expressing here is the idea that the future had been
‘met’. The novums77 that were just months, or even days, before ‘historically
unprecedented’ were no longer novums. The predicted future had come to pass,
and for a moment it seemed like all of SF would soon become science-fact.

With the ‘future’ becoming ‘present’, the SF community found itself
momentarily questioning its purpose. While both Suvin and Csicsery-Ronay’s
assessment of the novum emphasise the need for it to be ‘believable’, its effect is
removed if it becomes a simple reflection of the present. This apparent ‘problem’
with SF was discussed in fanzines and at conventions during the early atomic
age78. In particular, the June 1946 issue of Sam Moskowitz’s self-published Fantasy

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76 These stories included Heinlein’s ‘Blowups Happen’ from the September 1940 issue and ‘Solution
Unsatisfactory’, published in May 1941, and Lester del Ray’s ‘Nerves’ from September 1942.

77 The correct plural form of ‘novum’ is a point of some debate. I have chosen to use ‘novums’
following a (forwarded) email from Professor Suvin, who says: “the correct plural of ‘novum’ in
Latin is nova. see the great medieval motto, ‘non nova sed nove’[...]. but early on i [...] settled for
[...] novums. [...]” (Erlich).

78 Archival research undertaken at the J. Lloyd Eaton Collection of Science Fiction and Fantasy at
the University of California, Riverside, with the assistance of the 2011 R.D. Mullen Fellowship,
Times focuses on this concern. Reporting on a debate from the ‘first post-war science fiction convention’ Moskowitz writes:

What with atom bombs, rocket planes, radar, the reconversion of energy into matter it seemed that science was pell mell overtaking the most fantastic concoctions of fiction. After all, there wasn’t much point being a science-fiction fan if science was to render impotent essential tenants of fiction faster than the imagination could create new ones. (3)

Moskowitz’s use of “pell mell” and “impotent” coats his description of the issue with a lack of control and a sense of uselessness. For members of the community such as Moskowitz, the realisation of their genre’s future visions destabilised their sense of identity as ‘science-fiction fans’. In the same issue of Fantasy Times, the overlap between science fiction’s prognostications and reality is discussed in a more measured manner. A feature by ‘A. Langley Searles, PhD’ titled ‘Is Science Overtaking Science-Fiction?’ the conflation of future and present is again expressed:

The process of factualising fiction has become so rapid that there are cases on record where an invention mentioned in a story as something yet to be produced has already come into existence before the story was printed. (7-8)

The belief that their ‘fiction’ would become ‘fact’ was a highly desirable aspect of SF, as evidenced by Chandler Davis’ initial reaction to the bomb. What is disturbing for Searles and Moskowitz is the ‘rapidity’ of this process. Anything the imagination could ‘concoct’ may have ‘already come into existence’. The role of SF was questioned, and its potential ‘impotence’ was considered “a valid and important (point) and one that shouted for debate” (Moskowitz 3). This questioning of the purpose of SF by its community conveys the prevalent belief that there was no more ‘future’. If fiction becomes reality, if the future is the present, then there is no novelty. As Suvin’s concept requires the presence of both “novelty” and “innovation”, without the former there can be no novum (Suvin Metamorphoses 66). With the threatened novum “the necessary condition of SF”, the genre was, very briefly, questioned by its community (65). With SF often associated with themes such as space travel and colonisation, contact with alien races, and wondrous technological utopias, it is highly significant that the genre’s

helped to contextualise the SF community’s reaction to the bomb. The Eaton’s extensive collection of fanzines and pulp magazines was central to the development of this chapter.
usefulness was questioned following the development of the bomb. It speaks to the extreme temporal impact of nuclear technology that such ‘futures’ were (if momentarily) considered immanent.

The primary importance of this problem, of the questioned utility of SF by its community, is that it highlights the rate of technological development as a temporal concern. It was not simply an aversion to an increased ‘rate of change’ but, figuratively, the coexistence of the future and the present. While this conflation of the future and the present was an ideological problem for SF, it was also a cause of anxiety for the general population. However, instead of questioning a literary genre, this temporality emerged as an inability to face the idea of a radically changed world. Campbell signposted this rapid emergence of the future as a potential issue for those that had not been ‘initiated’ by SF. As early as 1941 he editorialised regarding the coming atomic age. In the October ‘41 issue of Astounding he outlined the need for propaganda to safely integrate citizens, to allow them to accept the radical change that nuclear power would bring (“Optical Instruments”). It was not just the dangers of the coming nuclear age that Campbell predicted would cause anxiety, but also the technological wonders that it would herald. This amounts to the same anxiety expressed by Moskowitz, a fear of the future becoming reality. Once the bomb dropped, Campbell repeated his concerns regarding the general population’s ability to cope with the immanent future. In the November 1946 issue of Astounding he noted the role played by science fiction fans in integrating those around them, stating that they “were suddenly recognised by their neighbours … and in many soul-satisfying cases became neighbourhood experts” (“Atomic Age” 5). Their ‘expert’ role was one of helping to provide “the people near them, who had no intellectual forewarning of what was coming, some idea of what it means” (5). It is implied by Campbell that those not lucky enough to have a ‘neighbourhood expert’ to explain the bomb and its

79 It is interesting that at the same time that there was discussion as to whether SF still ‘worked’, time travel narratives were able to express anxiety. This may be due to time travel’s problematic straddling of the SF and fantasy genres. Suvin’s definition of the novum, as Milner points out, actively limits the SF genre: “There was clear prescriptive intent here: to exclude myth, folktale and fantasy” (Milner “Darker Cities” 260). Time travel often breaks from Suvin’s prerequisite that the novum be an unprecedented, but believable extrapolation of contemporary science. For example in Hamilton’s The City at World’s End (1951) (and similarly in Heinlein’s Farnham’s Freehold [1962]), a nuclear blast sends a town, undamaged, into the future. It is questionable whether Suvin would accept this novel as SF.
connotations would be lost and overwhelmed. This is a view that Joanna Bourke echoes, in a generalised and expanded manner. She explains that the nuclear reality “operate[s] in us in the same manner as the fear of magic power operated in primitive societies. Such fear paralyzes the human mind, hypnotizes it, makes it passive” (266). The overwhelming scientific leap heralded by the bomb was so great as to seem like magic.80 This shocking conflation of future and present created a sense of hypnotic paralysis, an inability to face the dawning future. This temporal aspect of nuclear fear finds expression in numerous time travel narratives published in the early 1950s.

Conflation of the future and the present

In the two years between July 1950 and March 1952 three stories appeared that both mimicked the conflation of future and present and engaged with a fear of facing the future. Jack Finney’s ‘I’m Scared’ (1951), Wayland Hilton-Young’s ‘The Choice’ (1952), and Edmund Moore Hamilton’s novel City at World’s End (1950) all analogue this temporality of nuclear fear. In ‘I’m Scared’, the narrator describes his investigation into what appear to be ‘time slips’. He identifies numerous, yet isolated cases of the future, present, and past collapsing on one another. For example, radio broadcasts from many years before are heard in the present, and an adult dog appears to its owner two years before she first received it as a puppy. The story’s narrator surmises that this literal conflation of time is owing to:

> a growing rebellion against the present … an increasing longing for the past … Never before in all my long life have I heard so many people wish that they lived “at the turn of the century” or “when life was simpler” or “worth living” or “when you could bring children into the world and count on the future” or simply “in the good old days.” … For the first time in man’s history, man is desperate to escape the present. … there is a craving in the world like a thirst, a terrible mass pressure that you can almost feel, of millions of minds struggling against the barriers of time. I am utterly convinced that this terrible mass pressure of millions of minds is already, slightly but definitely, affecting time itself … Man is disturbing the clock of time, and I am afraid it will break (71)

Here, humanity is rejecting the present because of an unwillingness to face the future. This nostalgic longing for ‘simpler’ times can be read as an inability to

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80 As Arthur C. Clarke’s ‘third law’ states: “Any sufficiently advanced technology is indistinguishable from magic” (Profiles 21)
integrate the ‘complexity’ and pace of the present into existing ideology, just as Campbell warned. Finney’s story states that this ‘desperation’ to escape the present will lead to the ‘breaking’ of time, the conflation of past, present, and future via time slips. However, I view the rejection of the present he describes as itself a symptom of the conflation of time. It was the bomb that ‘broke’ time, bringing the future to the present and making reality so overwhelming that people longed for ‘the turn of the century ... when life was simpler’. Despite this inversion, ‘I’m Scared’ remains representative of the temporality of nuclear fear. The ‘millions of minds’ struggling against the new world of the atomic age recalls Joanna Bourke’s warning of the paralysing power of the technological advancement that marked the period. As such, the story reproduces this temporal aspect of nuclear fear; it allegorises contemporary anxieties of a disturbingly advanced future that seemed to be encroaching on the present.

A similar narrative depiction of the conflation of the future and the present, and the cultural fear it produced, is evident in the very short story ‘The Choice’. In this tale a time traveller visits the future with notepads, cameras, and recorders. He comes back with no memory of his visit, and with all recording equipment blank. The only thing he can remember is that:

“I was shown everything, and I was given the choice whether I should remember it or not after I got back.”

“And you chose not to? But what an extraordinary thing to—”

“Isn’t it?” he said. “One can’t help wondering why.” (124)

This one-page story contains little description of the nature of time travel, taking instead what Lem calls a “‘ludic’ or playful position of writers; they go for an effect as a tank goes for an obstacle: without regard for anything incidental” (149). However, the ‘effect’ that is the focus here is a literal representation of this temporality of the nuclear fear: a mind recoiling at the thought of future becoming present. This simple type of time travel story involves, as I have said, a character’s ‘present’ literally overlapping with the future. In this case this conflation has caused the time traveller’s mind to recoil, and reject the future that was brought to his present. This straightforward expression of the temporality of nuclear fear
finds more detailed expression in *City at World’s End*, Edmond Moore Hamilton’s 1950 novel.

*City at World’s End* contains numerous representations of the anxiety caused by the conflation of the present and the future. The story’s premise involves a violent confrontation between small-town America and a technological future. The town’s inhabitants’ inability to face this change is plainly described. The story begins with a nuclear bomb detonating over a small American city. Instead of causing mass destruction, the bomb literally “shatter[s] space and time”.

The narrator explains that the space-time continuum:

...is curved, and a great enough force could hurl matter from one part of the curve to
the other ... the first super-atomic bomb did it. It blew this town into another part of the
space-time curve, into another age millions of years in the future, into this dying, future
Earth! (Hamilton ch. 1)

Nuclear technology quite literally brings the present and the future together. Middletown is transplanted neatly into the future, completely intact. Twentieth-century America is exposed to the far future in a way that signals death for the present. The townsfolk cannot survive in this future; the sun has cooled and there is not enough fuel to keep the town warm. They must ‘adapt’ to the future and live in one of its deserted cities. This enforced interaction with the future is a physical manifestation of the figurative merging of the present and the future that surfaced in the nuclear age. Just like this temporality, the bomb’s ‘shattering’ of time creates intense anxiety.

Many of the regular people living in Middletown cannot face the new future that is forced upon them. Akin to Campbell’s description of those with no ‘intellectual forewarning’ of the bomb’s consequences, it is stated that “a people to whom the automobile was still quite recent were not psychologically capable” of dealing with the overwhelming nature of the future (ch. 12). On the first night after the bomb there are “—deaths from shock, (a) scattering of suicides ... looting... A dozen people, mostly drunks, had died of cold” (ch. 5). This inability to deal with the change that is brought by the bomb manifests as physical symptoms for the protagonist’s love interest, Carol. Looking at a visiting starship she “shivered and turned away. ‘I don’t want to look at it,’ she said. ‘Let’s go back’ “ (ch. 12). It is explained that all future technology is extrapolated from nuclear
technology, making the starship a manifestation of the change that was thought to be coming in the early atomic age. Again Carol expresses the inability to face this new future, turning away from it and refusing to look. Her desire to ‘go back’ can be read figuratively and mirrors the longing expressed in Finney’s ‘I’m Scared’. This parallel is later solidified when the protagonist experiences:

An aching nostalgia ... that haunting homesickness for an Earth lost forever, for the smell of leaves... blue skies and green hills ... snowy mountains and sleepy villages ... for all that was gone and could never be again. (Hamilton ch. 15)

This description of the pre-nuclear past as ‘lost forever’ again recalls Campbell’s assessment of the bomb’s impact on non-science-fictioneers. In his November 1946 editorial he notes with his usual colour: “People do not realize civilization ... died on July 16, 1945, and that the Death Notice was published to the world on August 6, 1945” (Campbell “Atomic Age” 5). This death of civilisation is represented by Middletown’s shunt to the future by an atomic explosion. It is cut off from the past forever; pre-nuclear civilisation “was gone and could never be again”. Of these three stories, each of which expresses an inability to face the future, City at World’s End is the most explicit representation of this temporality of nuclear fear. A nuclear explosion creates a literal conflation of present and future, and this is unacceptable for the inhabitants of ‘middle America’, both in the novel and in the U.S. of the nuclear age.

The birth of the nuclear age brought with it changes to the perception of time. Its scale seemed to shrink, as it became possible to bring about enormous change rapidly and with increasing ease. Concurrently, the bomb seemed to draw the future out of the imagination and into the reality of the present. These two alterations to time were central to mid-twentieth century nuclear fear, and were thus ‘temporalities’ of this particular ‘crisis’. Both of these temporalities were reproduced in the time travel fiction that was published in the early nuclear age. In these texts, the time travel narrative device serves an allegorical purpose, reproducing the temporalities of crisis that were prominent at the time of their composition. The ‘butterfly effect’ allegorised the contraction of time scale and the

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81 In the letter column of the November 1945 issue of Astounding, Campbell claimed that “we should reach the moon by 1950” (“Brass Tacks” 171). He predicted in 1942 that “observatories” would be built on the moon by 1960 (“Sneak Invasion” 6).
‘new’ relationship between cause and effect. Similarly, narrative descriptions of depositing protagonists in the far future exemplify the fear that time was moving too quickly. Many of these texts use the bomb as a narrative tool, including *City at World’s End* and *The End of Eternity*. However, many stories that also play this allegorical role do not refer to the bomb or nuclear energy at all, with ‘I’m Scared’, ‘The Choice’, ‘A Sound of Thunder’, ‘Brooklyn Project’, and ‘Now & Then’ offering key examples. While these primarily pulp tales avoid any reference to the bomb, all were published in the nuclear age and all reproduce temporalities of nuclear fear. As such, these under-examined texts are products of their time; whether their engagement with the temporalities of their contemporary crisis was conscious or unconscious, they are important artefacts that highlight the significant role played by time travel fiction. They demonstrate that fictional time travel’s allegorical mode works independently of the nuclear referent to reproduce the temporalities of nuclear fear. In the following chapter I extend my analysis of nuclear age time travel fiction to another key temporality of the period’s anxieties. The fear of a coming end to time itself was perhaps the most prominent prompt for nuclear fear. This particular temporality of crisis is complex and multifaceted, and requires its own chapter to explore in sufficient detail. It is also inexorably entwined with nuclear age ‘anticipation’ of a coming, possibly utopian future. Such ‘anticipation’ provides a comforting counterpoint to the fear of the end of time, and as such it is an example of time travel fiction’s secondary allegorical mode. It reproduces the ‘temporalities of crisis’, which has been the focus of the first half of my thesis. However, it also allegorises the similarly temporal ‘modes of alleviation’ that assuage and alleviate anxieties prompted by those temporalities. As this aspect of the nuclear age, ‘the end of time’ (a temporality of crisis), is intimately connected with the ‘anticipation’ of a magnificent future (a mode of alleviation), the following chapter serves as a useful ‘pivot’ between the two halves of my thesis.
Section Two: Modes of Alleviation
Chapter 4 – Countering Nuclear Fear: the End of Time & the Anticipation of Utopia

The development of nuclear technology was a crisis that embodied numerous complex temporal aspects. As I argued in the previous chapter, the nuclear age brought with it anxieties stemming from the bomb’s temporal implications. Time seemed to have shrunk considerably, and the potential of the new technology seemed to bring the future into the reality of the present. However, the most prominent temporality of nuclear fear was the belief that time could very soon come to an end. For the first time in human history, nuclear weapons provided humanity with the means to bring about an end to all life, and thus, as I will argue shortly, historical time. That said, the ‘end’ in the nuclear age was not always negative. Along with the potential, destructive end of humanity, another stable state—and thus another ‘end’—was concurrently anticipated. Nuclear technology was also considered capable of bringing about a grand, utopian future for humanity. Such ‘anticipation’, as I am calling this temporal reaction to the nuclear age, points to a secondary function of the era’s time travel fiction. As I’ve demonstrated, time travel fiction was used to allegorically reproduce the temporalities of mid-twentieth century crises. I will reinforce this point in the first section of this chapter by arguing that the fear of the end of time was similarly reproduced by time travel’s allegorical mode. However, the subgenre also reproduced the temporal phenomena used (consciously or unconsciously) to alleviate anxieties prompted by the development of the bomb. I aim to demonstrate that time travel fiction similarly allegorises these ‘positive’ temporalities, which I call ‘modes of alleviation’. In this chapter I examine the ‘anticipation’ of a utopian future, and in the following chapters I examine propaganda and apocalypse as temporal processes that serve as modes of alleviation.

There were two primary utopias at play in nuclear age SF: the group of writers and thinkers known as the Futurians anticipated a technological utopia built on the development of nuclear technology. At the same time, John W. Campbell and his Astounding Science Fiction magazine, a cornerstone of the period’s SF, saw the potential for a muted utopian future that would come about only after great devastation. Despite their differences, both of these utopias
promised ‘temporal continuity’: humanity was predicted to persevere, despite the threat of a final end connoted by the bomb. The message provided by these utopian models serves as an assuaging counterpoint to the fear of the end of time. As such, these forms of ‘anticipation’ can be considered ‘modes of alleviation’. In the second half of this chapter I argue that nuclear age time travel fiction, along with reproducing the temporalities of nuclear fear, similarly allegorised the ‘anticipation’ of a utopian future. As such, this chapter functions as a ‘pivot’ in my thesis. It begins with an analysis of a key temporality of the nuclear crisis, the fear that time itself could come to an end. From there my argument shifts, and I argue that nuclear age time travel narratives also allegorise this temporality’s counterpoint: the ‘anticipation’ of utopia and the ‘temporal continuity’ of humanity.

The temporalities of nuclear technology

The temporality of technology was on grand display at the 1939 World’s Fair in New York. It promised its visitors a glimpse at “the world of tomorrow”, and the technology that would apparently make that vision a reality (Kihlstedt 98). The hope of future technological wonders, gleaming cities, and flying cars greeted the public. As Kihlstedt notes, “The Wellsian supercity” imitated in the fair’s design “would come to symbolise the twentieth-century urban vision of a future society altered by the beneficent powers of science, technology, and mechanisation” (101). In other words, the Fair represented a milestone of hope regarding the transformative, and thus temporal, powers of technology; it would apparently bring about a utopian future. The immensely popular Futurama exhibit strengthened this connection between technology and time. The chairs in which patrons travelled around the exhibit were referred to in a news release as “time machines” (106). They took visitors on a 15 minute conveyor belt ride, touring the amazing technological marvel that was the “City of 1960” (106). The commentary similarly evoked time travel, with patrons urged to direct “ALL EYES TO THE FUTURE” (07). The vision of the future promoted by the World’s Fair was not the scientific community’s ideal. Kuznick argues that, in the lead up to the fair, the hope of many in the scientific community was that it would help popularise the
social benefits of science (341). However, this goal was co-opted and subverted by the Fair’s corporate vision, and “corporate exhibitors, who narrowly defined science in terms of gadgets, commodities, and magic” (341). Despite this removal from ‘reality’, and scientists’ “apprehension that fair officials intended to devalue science’s contributions to social progress” (341), the fair was successful in bringing science and technology, and its intrinsic link to temporality, to the forefront of the cultural imagination⁸². Just six years later, the nuclear bomb introduced new temporalities to considerations of science and technology, and to the future that they represented. The crisis created by the birth of the nuclear age at once added to the World’s Fair’s utopian future vision, which suddenly seemed more feasible than ever, while simultaneously creating the possibility that there would be no future at all.

The attitude towards technology and science that arose during the atomic age was a multifaceted temporal problem. Following the bomb, technology represented both the fear that time would soon end, while also opening the door to a possible utopian future, reflective of the vision of the World’s Fair. The dawn of the nuclear age brought with it not only the fear of worldly conflagration, but also, paradoxically, the widespread hope that a remarkable future was within reach. Along with its destructive consequences, the development of nuclear technology was recognised as a startling achievement. The awe-inspiring nature of the power of an atomic blast provoked a complex dynamic. Conflicting responses to the bomb oscillated between anticipation and dread. An unimaginable, technologically wondrous future was seemingly immanent, but this was accompanied by the fear of near-instant, science-fuelled destruction. Commentators including Booker, Broderick (“Surviving”), and Boyer have focused heavily on this duality, and it is summed up succinctly by Robert Jacobs:

Human society was at a fork in the road: one path led to atomic holocaust; the other led to a future of peace and plenty. This was the nuclear dilemma, navigating past the danger and accomplishing the transformation to a new Eden. (2)

⁸² Over 44 million people visited the fair, although this number was below expectations. (Duranti 674)
This nuclear duality, the goal of reaching a “new Eden” despite the dangers of nuclear technology, was a time-centred problem that was central to nuclear technology, and one that the time travel fiction of the period allegorised.

Utopian SF during the Golden Age (1938-1960)\(^{83}\) did not simply reproduce the “undiluted Wow! Gosh!” visions of technology and the future popularised by the World’s Fair (Franklin 43), but rather reflected this dual temporality. While idealised visions may have been prominent in the Gernsback era, such stylised future cityscapes were largely absent from SF by the late 30s-early 40s (43). Hugo Gernsback’s influence saw SF of the 20s and 30s embrace pulp sensibilities, with the era’s tales prominently comprised of ‘space adventure’ stories. This focus changed when John W. Campbell took over as editor of Astounding Stories in 1937. The following year Campbell, a qualified engineer, changed the magazine’s name to Astounding Science-Fiction, and brought with this change an eponymous focus on scientific extrapolation and ‘realistic’ depictions of scientists and their craft (Silverberg “Science Fiction”). This change signalled a renewal of SF’s focus on contemporary science and technology. Following the development and use of atomic weaponry during the war, this focus began to reflect the possibilities implied by a future that was fuelled by nuclear capabilities. The dual nature of such a future, with either utopia or destruction awaiting, was a prominent concern. Campbell’s editorial in the February 1946 issue of Astounding structurally reflects this “fork in the road” (Jacobs 2). It comprised two columns, one headed “PLAN FOR SURVIVAL” and the other “PLAN FOR EXPANSION” (Campbell “Postwar” 5). The structure and content of the editorial suggested that awaiting humanity was either an expansive, technological future or a struggle to survive.

Anticipation and dread regarding the nuclear future, the two ‘forks’ described by Jacobs, were reproduced in the era’s time travel fiction, and often within the same text. The time travel narrative device’s allegorical mode allows for this dual representation. Hamilton’s City at World’s End (1951), Asimov’s The End of Eternity (1955) analogise both the notion that time could end, while at the same

\(^{83}\) The dates I provide reflect my agreement with Robert Silverberg’s assessment of the Golden Age. He calls the period bounded by 1938 and 1946, oft-cited as ‘the golden age’, the “Campbellian golden age”. The “real” golden age of SF, he convincingly argues, is the 1950s. The SF published in that decade, he claims, surpassed that which came earlier. (Silverberg “Science Fiction”)
time suggesting that nuclear technology was the key to a future utopia. This disruption of the unified vision of utopia popularised by the World’s Fair extended further in Campbell’s *Astounding*. The time travel stories Campbell published during the Golden Age were representative of his politics and depicted, as I will illustrate, a highly ‘muted’ form of utopia. In Henry Beam Piper’s ‘Time and Time Again’ (1947), Fredric Brown’s ‘Letter to a Phoenix’ (1949), and ‘The Figure’ (1949) by Edward Grendon, time travel is used to reproduce the notion that a great future may await, but it will most likely come via a period of destruction. Both of these temporalities of nuclear technology, the threat of the end of time and the ‘anticipation’ of utopia, are extensive enough to be examined separately, despite their “complexly interwoven” nature (Boyer 109). However, I have another reason to separate this examination. As I have mentioned, the temporality of crisis that I refer to as ‘anticipation’, the belief that nuclear technology will bring about a wondrous future, is also an example of a second key role of mid twentieth-century time travel fiction, a role that is the focus of the second half of this thesis. In addition to being a key temporal aspect of the upheaval represented by the onset of the nuclear age, a ‘temporality of crisis’, ‘anticipation’ is also an example of what I am calling ‘modes of alleviation’.

‘Modes of alleviation’ is a term that, in my opinion, is fitting to describe processes that create affirming, comforting messages in response to contemporary socio-historical crises. As I have argued in previous chapters, the crises of the mid-twentieth century were deeply temporal. The war represented a repeating cycle of destruction, a pre-written future, and a sense of temporal isolation. The bomb, similarly, brought with it a sense that time had been ‘shrunk’, and seemed to confl ate the future and the present. Such temporal problems need temporal ‘solutions’. As Neal comments in reference to cultural trauma, disruptive events that threaten a culture’s view of the future create the need for “repair work ... to promote the continuity of social life” (7). Such repair work can take the form of temporally laden—that is, concerned with reconfigurations of time—modes of alleviation. In this chapter I argue that anticipation is an example of such a mode. In the following chapters, I make a case for propaganda and apocalypse to be similarly classified as modes of alleviation. To further clarify this concept of alleviatory modes, I will focus again on the duality surrounding nuclear
technology’s temporalities. The development of nuclear capabilities brought forth the very real possibility of the end of all life on Earth. If, as Kant contends, time has no “absolute reality” but instead exists “solely in the subject (or mind)” (Reason 32, 33), this end of life on Earth would, in all practicality, also be the end of time itself. The threat of the end of time is a temporality of crisis: it is an unsettling notion regarding time that emerges from the connotations of nuclear technology. The ‘anticipation’ of a utopian future, on the other hand, is not only a temporality in and of itself, but also works in opposition to the notion of time coming to an end. It ‘counters’ the threat of the end of time. If a technological utopia awaits, then time, and thus human existence, will surely continue. The stories examined in the following two sections of this chapter, *The End of Eternity* and *City at World’s End*, reproduce this duality in a way that highlights ‘anticipation’ as a mode of alleviation. The narratives engage with the anxiety created by the notion of the end of time, but ultimately highlight the vast benefits of nuclear technology. As I will argue, the ‘comforting’ nature of this message—that nuclear technology will lead to a utopian future despite its dangers—is what makes ‘anticipation’ a mode of alleviation. However, before ‘pivoting’ this thesis in this secondary direction, I shall first conclude my examination of ‘the temporalities of crisis’. The following section details time travel fiction’s role in allegorising the most prominent temporality emerging from the development of nuclear technology: the fear that it would lead to the end of time.

**Nuclear technology & the end of time**

The fear of technology that arose in the 1940s and 50s was an example of the ‘Frankenstein complex’. This was the fear “that our own technologies can not only dehumanize and enslave us but finally destroy us as well” (Dewey 6). Even some of the first news reports following Hiroshima used the Frankenstein analogy. Boyer points out that “NBC news commentator H.V. Kaltenborn, on Aug

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84. The term was coined by Issac Asimov, and was used prominently in his essays, including ‘The Machine and the Robot’ (1978). It has since been appropriated and deployed by theorists including Warren Wagar and Joseph Dewey.

85. These reports often misused the term, using ‘Frankenstein’ instead of referring to the monster, his creation.
nightly news report, said “For all we know, we have created a Frankenstein! We must assume that with the passage of only a little time, an improved form of the new weapon we use today can be turned against us” (5). The destructive potential of the new technology, and the science that created it, was also mentioned in the St Louis Post-Dispatch the following day, which warned that science may have “signed the mammalian world’s death warrant” (cited in Boyer 5). Boyer also describes prominent pastor Harry Emerson Fosdick’s reaction to Hiroshima:

Normally a cheerful preacher, Fosdick on this subject was deeply pessimistic. “We are Franksteins, who have created a technological civilization that in the hands of sin can literally exterminate us,” he declared. “Unless great ethical religion can catch up . . . our science will be used to destroy us.” (Boyer 271)

These news reports and public comments centre on the potential for nuclear technology to be turned against its creators. The engineered ‘monster’, it was feared, would lead to the end of the human race. The rhetoric used in these examples, for example ‘death warrant’, ‘exterminate’, and ‘destroy us’ hold an inherent finality. The end of the human race is, effectively, the end of time.

The fear that nuclear technology could lead to the end of time was a temporality that grew stronger in the 1950s, with the development of the hydrogen bomb. In 1955 the public were advised by the Atomic Energy Commission that these bombs, potentially 500 times more powerful that those used on Hiroshima and Nagasaki, could “render the earth uninhabitable to man”, that the human race could be exterminated (Weart [1988] 215; Bourke 260). The destructive potential of the H-bomb, its ability to ‘end’ time, was pre-empted by the potent symbolism of the Doomsday Clock. With its message that “as a result of the atomic bomb, ‘time is running out’ “ the Doomsday Clock appeared on the cover of each issue of the Bulletin of the Atomic Scientists from 1947 onwards (Oakes and Grossman 372; Weart [1988] 217). The hands of the clock would move closer to ‘midnight’ during periods of heightened nuclear tension, and back away when hostilities eased. If the clock were to strike midnight, it would mean nuclear war and the symbolic, and seemingly literal, end of time. Contrasting with the slow degenerative end represented by Wells in The Time Machine, the threat of the end of time in the atomic age was ever-present. The possibility of nuclear midnight became the threat of literal nothingness, which, Lifton argues, is the
source of a great deal of nuclear fear. A lack of “the symbolization of immortality” via social or genetic continuance, Lifton says, was a major psychological cause of anxiety during the Cold War period (The Future 23). If all life were to end, then there would be no children to carry on our legacy, and no fellow humans to build upon our accomplishments. Our actions would be pointless, as real or symbolic continuity would be denied by the end of time.

Without the redeeming post-time qualities of Christian transcendence or other faith-based comforts such as Buddhist ‘nothingness’, the end of time in the nuclear Age was psychologically destructive (Lifton The Future 157). As Lifton argues, the “mind not only rebels against such a stark image but has no experience with which to conjure it up” (Lifton The Future 157). As such, the end of time connoted by nuclear technology is inherently strange and unknowable, perhaps partly as a result of the reversal of causality it implied. Its manifestation in the present was, as Luckhurst articulates, “the paradox of an anticipatory mourning of the present that the future may eradicate: the tense of the future anterior” (93). In other words this temporality of nuclear fear, the fear of the end of time, was the expectation that at some future moment, the present would ‘die’. This ‘anticipatory mourning’ represents a reversal of usual process, as one is called to mourn the death of the ‘now’, before such a death actually occurs. It is this aspect of this temporality that is reproduced in City at World’s End.

City at World’s End uses time travel to provide an allegorised reproduction of the ‘anticipatory mourning’ for the present at the hands of the future. While ultimately critical of the fear of technology, this representation of the threatened end of humanity, and thus of time, is a prominent aspect of the story’s opening. The story’s setting, ‘Middletown’, represents an idealised middle-American community. In 1929 Robert and Helen Lynd published a study of American culture that strove to identify the characteristics of the average small American city. The Lynds famously used ‘Middletown’ as the name of their city, and Hamilton’s description of his Middletown attests to this association. Descriptions of Hamilton’s city are punctuated by images of happy, middle-American life such as “starched white curtains, the polished furniture, the pictures on the wall and the bits of fine china that were so lovingly placed”, housewives busying themselves with brooms, and American cars including “Plymouths and Nashes and Chevrolets
and Fords” (ch. 7). The story depicts this ‘perfect’ town being transported, intact and undamaged, into the far future following the detonation of a nuclear bomb. Following this transportation, all of these elements of the ‘present’—the cars, the people, and their beautiful, simple homes—are threatened by the dead Earth of the future. The threat to Middletown reproduces Luckhurst’s assertion that nuclear technology creates “an anticipatory mourning of the present” (93). Without fuel and heat, the future Earth will “eradicate” the town, which is a preserved representation of the “present” (93). This idealised representation of the small middle American city will literally die in the future. The text makes it clear that science and technology created this threat. Not only does it use a nuclear explosion as the impetus for time travel, but the scientist-protagonist’s girlfriend, Carol, directly implicates science as the cause of the town’s crisis: “We had (shelter and warmth). We had them for generations, until we had to have scientific progress too” (ch. 6). She goes on to state that if scientists “hadn’t come to Middletown with that secret laboratory, fifty thousand people wouldn’t have had to suffer for it” (ch. 6). The lack of shelter and warmth Carol bemoans is a consequence of science and nuclear technology literally bringing the present into the future. Time travel is used to analogue the nuclear age fear that the future may, using Luckhurst’s terminology, “eradicate” the present and thus bring about the end of time (93).

In Asimov’s The End of Eternity, time travel’s allegorical mode similarly reproduces the fear of both technology and the end of time. In the novel, the fear that drives the Eternals’ tinkering with reality stems from a Frankenstein complex. The Eternals believe that, if left alone, humanity’s “technological advances (would make) racial suicide inevitable” (Asimov Eternity 123). Such a belief mirrors the fear of technology that was revived following Hiroshima, when it was commonly thought that scientific advances represented by the bomb would “finally destroy us” (Dewey 6). The Eternals embody this key element of atomic age apprehension. They use time travel to alter the course of human history to stop the development of nuclear technology, and are primarily motivated by the fear that such technology would lead to the end of time. The Eternals believe that, left to travel a path of “maximum probability”, the human race would proceed inexorably towards “atomic warfare and the end of man” (Asimov Eternity 159). The Eternals
face the idea of a final end of historical time with the same fear described by Weart (1988), Bourke, Lifton, and others. The sublime incomprehensibility regarding the end of time, as described by Lifton, is experienced by Senior Computer Twissel. His blank terror at the thought of a barrier over the kettle shafts, of a literal ‘end’ to time, represents the contemplation of nuclear midnight on the Doomsday Clock. This apparently “impossible” breach in the continuity of time prompts “abject fear” in Twissel (Asimov Eternity 161), marking his journey through time, via the kettle, as a literalised reproduction of contemporary fears. As head of the Eternals, Twissel embodies the fear of nuclear technology. His group’s mission is to erase the development of nuclear technology from all of time. This moment, when he reaches a symbolic ‘end’ of time, sees his usually composed demeanour give way to extreme anxiety. His fear is similar to that expressed by NBC news, the St Louis Post Dispatch, and Fosdick in the days following Hiroshima. While Asimov represents this temporality of nuclear fear in The End of Eternity, the primary message in the novel is a criticism of the nuclear age backlash against science.

The City at World’s End and The End of Eternity both use time travel to reproduce a key temporality of the atomic age. They analogise the fear of technology, and particularly the notion that it could lead to the end of time. As such, the texts engage with the crisis within which they were produced, using the time travel narrative device to articulate the temporal aspects of its anxieties. This role of time travel fiction, which I have similarly articulated in the first three chapters of this thesis, is a key, previously unacknowledged aspect of the subgenre. At the same time, these two stories also embody the second key role of mid twentieth-century time travel fiction. Despite their representations of nuclear fear and the end of time, the two novels, along with most atomic age SF, were ultimately critical of the Frankenstein Complex. Hamilton and Asimov’s stories present a positive, comforting message, that nuclear technology will ‘save’ humanity, and lead to a great future. This sense of ‘anticipation’ is both a

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86 In terms of time travel fiction, Harlan Ellison’s ‘Soldier’ (1957) was a key exception, presenting a highly critical view of technology (especially in relation to warfare). Brians notes a number of other SF (rather than specifically time travel) stories with negative nuclear connotations, but argues that many “of these authors were not really reacting to the bomb at all: they were glibly assimilating it to SF’s long-established conventions. Nearly every aspect of nuclear doom was trivialized in some form or other” (258). As noted earlier, SF film of the period often shared Ellison’s negative depiction of science. See Booker for more on SF film and the fear of the bomb.
temporality related to nuclear technology and a ‘mode of alleviation’. It is a
reaction to nuclear fear, a direct ‘counter’ to the fear of the end of time.
‘Anticipation’ is the promise of temporal continuity via technology, which is a
comforting message, given the threat of nuclear annihilation at the time the texts
were published.

Anticipation of technological utopia

Up to this point of the chapter I have focussed on one half of the ‘dual’ temporality
of nuclear technology: the fear that it would lead to the end of time. However,
equally prominent in the nuclear age was the simultaneous anticipation of a
wondrous, atomic-powered future. The image of a potentially grand nuclear future
was prominently reproduced in nuclear-age SF. As Brians notes, “a common first
reaction [by SF writers] was to proclaim the wonders which awaited the public in
the bright new Atomic Age” (253). However, it was not just members of the SF
community who promoted such ‘wonders’. Predictions of a wondrous future also
featured in the government-endorsed productions such as the film The Beginning
or the End (1947). Here the Truman character, in a script altered and approved by
the White House, claims that “in peacetime, atomic energy can be used to bring
about a golden age—such an age of prosperity and well-being as the world has
never known” (Broderick “The Buck Stops” 147). Among the promised
developments in this coming ‘Golden Age’ were atomic powered cars that would
never need refuelling, and the eradication of cancer and heart disease (Boyer 118,
19). Even military experts published prognostications including a future with “a
force-field screen around the US, robot battle machines, and other Buck Rogers
gimmickry” (Brians 254). Despite the prominence of such ‘space age’ predictions,
even from the US government, the temporality that I call ‘anticipation’ is not
simply a traditional utopian vision of futuristic cities and wonderfully happy
people. Instead it offers visions of a wondrous future, enacted by nuclear
technology, which directly ‘trump’ the threat of the final end.

In SF, and particularly in time travel narratives, nuclear-age utopian
visions were often direct reactions to the fear of technology. These fictions
contained two key responses to the temporality of this crisis. The first was
political messages, the depiction of wonderful future benefits of nuclear technology that can be seen as direct counters to contemporary calls to ban nuclear research. A significant amount of SF of the early atomic age reacted strongly against the fear of technology, including numerous time travel stories. Both *City at World’s End* and *The End of Eternity*, despite using time travel to allegorise temporal aspects of nuclear fear, also serve as responses to calls for the banning of nuclear research. As Boyer points out, “Despite scientists’ efforts to reverse the trend, the reaction against ‘science’ intensified as the 1940s wore on. In its most extreme form, it involved proposals for a moratorium on atomic-energy research” (Asimov *A Choice* 273). As I will demonstrate, the two novels use time travel to punctuate the role of nuclear technology in creating a wonderful future for humanity, despite its dangers. The second, entwined response to nuclear fear in such texts is a more direct reproduction of its temporalities. These two texts in particular present a utopian end for humanity as a direct counterpoint to the fear that nuclear development would end the human race. I call this particular temporality ‘anticipation’, since it involves the assumption that a grand future awaits. However, its role as a mode of alleviation is more active than simply presenting a vision for which one must wait. It involves the creation of a sense of temporal continuity. By this I mean that anticipation is a figurative ‘repairing’ of the ‘damage’ done to time by nuclear technology; a counterpoint to its time-ending connotations. Where science, news media, and social commentators popularised the idea that the bomb could “literally exterminate us” (Boyer 271), time travel fiction of the early atomic age reproduces an ‘alleviation’ of this fear. These texts transplant the fear of the final end of time with a comforting message of nuclear ‘rejuvenation’, and thus promise temporal continuity. Both of these counterpoints to nuclear fear—the opposition to calls for a moratorium on research and temporal ‘repair’—are aspects of what I call ‘anticipation’. As they both temporally work to ‘alleviate’ nuclear fear, anticipation is a useful introductory example of a mode of alleviation.

Before delineating this mode of alleviation, and its role in counteracting nuclear fear, I should note that ‘anticipation’ is not always completely positive. It can be overwhelming, as Hamilton suggests in *City at World’s End*. For most of the novel Kenniston, the head scientist, is a voice of reason when it comes to the fears
of technology harboured by the people of Middletown. However, even he recoils at the thought of space travel:

Just the realization of it gave him a feeling of vertigo, a shuddering recoil, and he knew that he had to keep his mind away from what it would be like in that ship, in space—he had to avoid anticipation or the impact of it would be too much for him. (ch. 4)

Such a rebellion of the mind, given anticipated technological possibilities, represents the “technoscientific sublime” (Csicsery-Ronay 7, emphasis in original). As Csicsery-Ronay describes it, the technoscientific sublime is “most characteristic of post-World War II sf” (7). An evolution of the Kantian sublime, via Nye’s technological sublime, it “entails a sense of awe and dread in response to human technological projects that exceed the power of their human creators” (6-7). While the novel is ultimately complementary to technology, it acknowledges its post-war ability to provoke ‘awe and dread’. Such reactions to ‘positive’ technological possibilities were similarly noted by John W. Campbell in the months following Hiroshima. In the November 1946 issue of *Astounding* he wrote of difficulties facing the general public, given the vast potential of the nuclear age, warning that “it is a basic characteristic of people that they refuse to accept change when it arrives” (Campbell “Atomic Age” 5). Despite this acknowledgement of the sublimity of nuclear age technology, *City at World’s End* ultimately presents a positive, comforting message regarding nuclear technology and offers a clear example of ‘anticipation’ acting as a mode of alleviation.

Hamilton’s novel reproduces the comforting notion that the potential benefits of nuclear technology outweigh its risks. While he uses time travel to analogise the threat posed by the bomb, Hamilton also presents technology as the key to humanity’s continuance. Throughout the novel, those who are scared of the new technological future are described as “idiots” and “hysterical” women (ch. 2, 4, 5, 7, 13). Conversely, the story concludes with nuclear technicians re-igniting the Earth’s core and saving the planet. While nuclear technology threatens the present, as represented by Middletown, it also saves Earth from extinction. This use of nuclear weapons allows some humans from the past to move back to

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87 The Kantian sublime involves, put extremely simply, a sense of the superiority of one’s reason over nature (Kant "Judgment"). Nye’s American technological sublime focuses on a similarly positive, sublime reaction to American techno-industrial achievements, such as the Empire State Building and the Hoover Dam.
Middletown, while the younger citizens choose to move forward and occupy the deserted cities of the future (ch. 21). Again, this story presents both the fear of technology and a criticism of it. As argued in the previous section and in the last chapter, the novel uses time travel to reproduce nuclear age fears of the conflation of the future and the present, and of the end of time. However, its resolution presents the notion that a balance can be achieved. Middletown is literally brought into the future via time travel, an allegory for the temporal impact of nuclear technology. Aligning with the cautious optimism of pro-technology advocates such as Campbell, while the explosion of an atomic bomb initially threatens ‘middle America’, such technology also guarantees its continuance. Without nuclear technology to warm the Earth, the novel suggests, there will be no ‘perfect’ town, and no America. Middletown lives on, so while nuclear weapons have the potential to break time, they can also provide a future for American culture and values. This allegorical representation of nuclear technology’s benefits is an example of ‘anticipation’ as a mode of alleviation. It is a comforting message that counters a prominent anxiety-laden temporality of crisis.

The message that time will continue, despite the threat posed by the bomb, is reproduced in the novel through the depiction of time travel. This narrative device allows Hamilton’s story to begin in the contemporary USA, and then skip eons. Thus, the characters who witness the far future, and the grand benefits of nuclear technology, are those who embody ‘ordinary’ Americans. The inhabitants of Middletown, especially the civilians like Carol who fear science, recall the public calls for moratoria on atomic research, and those who would question a policy of nuclear deterrence. By conflating this ‘present’ with the far future, time travel allows these same ‘ordinary Americans’ to be depicted using nuclear technology to rejuvenate a dying planet Earth. These everyday folk accept the benefits of such technology despite being exposed to its greatest risks. This is a deeply political message that parallels contemporary propaganda.\textsuperscript{88} Such a positive image, one that suggests that nuclear technology will combine old-fashioned American values and the far future, aligns with the situation at the end of the story. As such, Hamilton’s use of time travel in the novel is an example of the secondary allegorical mode of the SF subgenre. It not only allows for the reproduction of the

\textsuperscript{88} Propaganda as a ‘mode of alleviation’ is discussed in detail in the following chapter.
temporalities of particular crises, but also allegorises their assuaging counterpoints.

This same mode of alleviation, an allegorical message of the bomb’s potentiality, is central to *The End of Eternity*. Brunner notes that Asimov’s novel “on a deeper level discusses science’s relationship to society: can one make moral judgments about science?” (390). Brunner doesn’t elaborate on this statement, which is understandable as his article’s primary focus in on the use of SF in education, rather than literary analysis. However, his point here is central to *The End of Eternity* and deserves detailed examination. Where *City at World’s End* suggests that nuclear technology should not be feared, as it will, at worst, keep time moving forward, Asimov’s novel goes a step further and promotes the idea that it will, at best, create a transcendent future.

*The End of Eternity* uses time travel to present a message of anticipation by inverting the contemporary fear of technology. This is despite overt nuclear imagery only appearing in the book’s concluding chapters. The novel’s inversion of the Frankenstein complex is most clearly evidenced in the motivations of the Eternals themselves, and the effect that their actions have on the ultimate fate of humanity. Their unwavering belief that technology, particularly nuclear, will mean the final end for the human race results in their ceaseless ‘patching’ of time. The Eternals feel that they must interfere in time, to remove the development of “nucleonics” because “atomic wars ... just can’t be allowed” (Asimov *Eternity* 88). They literally suppress nuclear technology by wiping it out of existence, physically changing reality whenever their calculations suggest that the development of atomic power may arise. This revising of history is, just like calls for the suppression of nuclear technology in the 1950s, an attempt to ensure a safe continuity for humanity. However, the Eternals’ plan for human continuity fails, representing a harsh critique of the Frankenstein complex and nuclear fear in general. Asimov depicts the creation of Eternity itself, with its neurotic, technophobic administration, as the very event that leads to the end of time. The ‘doom’ feared by the Eternals prompts their Reality Changes, in which they erase dangerous technology and nuclear science from existence with key policies of “Safety and security. Moderation. Nothing in excess. No risks without overwhelming certainty of an adequate return” (183). These policies, in turn,
pacify the human race to the extent that it simply dies out\textsuperscript{89}. As Noÿs, a time traveller with an omniscient perspective on human history, explains to Harlan that:

... mankind died out! ... [T]here was a loss of purpose, a sense of futility, a feeling of hopelessness that could not be overcome. Eventually there was one last decline of the birth rate and finally, extinction. Your Eternity did that. (183)

Eternity’s creation is explicitly stated to be the cataclysmic event that “destroyed” the “Basic State” of the universe, and that “...the cessation of human evolution seems to coincide with the development of Eternity” (185, 165). The “mere fact of its existence” creates an unnatural future in which the human race is finally, irrevocably, extinct (185). In other words, if human kind were to submit to a “moratorium on atomic-energy research”, it would be the end of its development (Bourke 273). The novel therefore pins the destruction of the human race, the symbolic end of time that was so feared in the nuclear age, on the effective ‘banning’ of nuclear technology\textsuperscript{90}. As such, it represents ‘alleviation’ by reversal. Asimov presents the message that the end of time will not come via nuclear technology, as contemporary society feared. Instead, it will only come if such technology is not allowed to develop.\textsuperscript{91}

The future that Noÿs describes at the novel’s end, with humanity spread throughout the galaxy\textsuperscript{92}, is a technological utopia predicated on the development of the bomb. As such it again allegorises anticipation’s role as a mode of alleviation. It works to counter nuclear fear by presenting a message that the risks posed by nuclear technology are completely worthwhile. Again, this scenario

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\textsuperscript{89} The propagandistic elements of this message are explored in chapter five of this thesis.

\textsuperscript{90} The Eternals’ ongoing meddling in time, their erasure of technological development, is said to lead to humanity’s extinction, but the disastrous final ‘End’ is traced back to a single event: the initial creation of Eternity. (Asimov \textit{Eternity} 185)

\textsuperscript{91} The link between Eternity’s creation and the 1950s fear of a nuclear end of all life is clear here: Both the creation of Eternity and potential nuclear destruction (as envisioned in the 1950s) are single ‘events’, taking a short amount of physical time to occur; both are precipitated by human technology, and both would similarly lead to the extinction of the entire race. Also, just like in both Middle Ages apocalyptic fears, and the new secular apocalypse of the 50s (as I described earlier), a sense of futile hopelessness, a lack of a purposeful future, is said to be a key factor in the downfall of human kind. Noÿs’ description of an apathetic human race waiting only for extinction precisely mirrors the nuclear age (and Middle Ages) despondency surrounding the lack of the possibility of transcendence—the idea that a final End of time was all the future offered. (Reeves 41)

\textsuperscript{92} Linking the story to Asimov’s \textit{Foundation} series.
provides a counterpoint to the fear of the end of time. Here it is not just survival, but a grand utopian future that awaits. By travelling in time, Noës is able to bring the ‘truth’ to Harlan. She has seen the future that will arise if nuclear technology is allowed to develop, and argues that its dangers are a positive: “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” (Asimov Eternity 184). Therefore the message is that the wondrous heights to which atomic energy can take humanity, the anticipated ‘golden age’ promoted by the Truman government, will never be reached if science and technology are feared or suppressed (Broderick “The Buck Stops” 147). This role of ‘anticipation’ is neatly summed up in a quote from secular journalist and critic Dwight Macdonald. Writing in 1945, Macdonald commented that focusing on the anticipation of future benefits of nuclear technology “blunts our reaction to the present horror by reducing it to an episode in an historical schema which will ‘come out all right’ in the end” (172). This quote highlights the assuaging aspects of anticipation, and its role in alleviating contemporary fears. Focussing on the future benefits, Macdonald says, dulls the negative impact of the bomb’s destructive elements. Macdonald’s use of the term ‘schema’ implies a structure or framework: a solid, pre-written ‘history’ and, by implication, future. While ‘history’ may be filled with ‘horror’, it is simply an ‘episode’ that will invariably end and lead to the promised, and positive, future. It is this alleviatory process, in which a focus on technological benefits reduces contemporary fears, that time travel fiction such as The End of Eternity reproduces. It allegorises an ‘historical schema’ that will ‘come out all right’ by depicting the continuity of events from the ‘real world’ present of the reader to anticipated grand benefits of nuclear technology. Noës’ vision of the post-nuclear future, much like Macdonald’s assessment, amounts to the ‘repair’ of damage done to time by the notion that it could come to a sudden end. The reproduction of the promise of temporal continuity in Asimov’s novel inverts the fears associated with calls to ban nuclear research. The temporality of this fear, the end of time, is replaced with the comforting, and deeply political notion that temporal continuity can only come about via nuclear technology.
This reproduction of ‘anticipation’ in *The End of Eternity*, coming via Noës’ knowledge of the future, is central to the rest of my thesis. This is why I have used anticipation as an introduction to my concept of modes of alleviation. While I will discuss the following points in far more detail, this is an advantageous point to briefly outline how my argument will develop in the following chapters. Noës’ proselytising, made possible by her travels in time and her subsequent privileged vantage point regarding the future, mimics the function of propaganda. Considering propaganda a mode of alleviation is a key element to the following chapter of my thesis. Noës’ final plea to Harlan can be considered a propagandistic assertion that discounts the very real dangers of the nuclear threat. It functions, I will argue, in an allegorical fashion to the Truman government’s civil defence propaganda. Using *The End of Eternity* as a key example, I argue that time travel analogises the propagandistic process, highlighting its inherently temporal nature. Similarly, Noës’ argument provides a key example in chapter 6. The anticipation that she represents marks time travel fiction as an allegorical reproduction of traditional apocalyptic myths. It supports my assertion that this particular mode of alleviation, apocalypse, is also reproduced by nuclear age time travel narratives. As such, my examination of the text will continue in the following chapters. My aim at this point is to have introduced the notion that the anticipation of a technological utopia is a temporality of the nuclear age— one that is also a mode of alleviation, in that it works to counteract the threat of the end of time—and that time travel fiction of the period reproduces these functions.

In *City at World’s End* and *The End of Eternity*, time travel is used to reproduce nuclear age ‘anticipation’ as well as its opposing temporality, the fear that nuclear technology could cause time to come to an end. However, the magnificent future promised by Asimov’s novel was more than a promise of temporal continuity. It reflects one half of a ‘split’ in the utopian vision of the SF community in the Golden Age of SF. Asimov was a member of the Futurians, a highly prominent group of SF writers, editors, and fans in the late 1930s – mid-1940s, who saw technology, nuclear or otherwise, as the key to the future. While a politically diverse cohort, they were noted for the leftist views of well-known members such as Fredrik Pohl and Damon Knight. The vision of utopia promoted by the Futurians was technological, while avoiding technocracy. While many
science fiction writers of the period aimed to “technologize politics”, the Futurians believed that technology would bring about a democratised utopia (Milner and Savage 38). Following the bomb, nuclear technology became a source of this utopia in many stories, such as *The End of Eternity* and Asimov’s *Foundation* series, which was set in the same fictional universe. The opposing half of the utopian vision centred on Campbell’s *Astounding Science Fiction* magazine. Campbell and his writers had a different, darker vision of ‘anticipation’. However, as I will demonstrate, despite this key difference between the two forms of utopia, time travel stories published in *Astounding* also reproduced this mode of alleviation; they played the same role of creating a sense of temporal continuity, and thus presented allegorical messages of comfort in the face of nuclear fear. While Campbell’s utopia was ‘muted’, and did more to highlight the dangers of the bomb, it still ultimately presented the message that life—and thus time—would continue, despite the nuclear threat.

**Muted utopianism: anticipating the future**

Campbell and his *Astounding Science Fiction* presented a bleaker vision of the future than that of Asimov, but one that still promised temporal continuity in opposition to nuclear fear and thus reproduced this mode of alleviation. Milner and Savage outline a contrast between utopia as envisioned by the Futurians, and that of Campbell and his *Astounding* writers. They describe this divided utopian vision (following Adorno) as the “torn halves of the utopian imagination” (43). Despite the differences between the two groups and their utopias, time travel fiction produced by both reproduces the temporalities to emerge from the development of nuclear technology. In the 1940s, Campbell effectively outlawed “overt utopianism” in his magazine, in favour of what Milner and Savage call ‘utopian anti-utopianism’94, which I will outline shortly. In particular, ‘Time and Time Again’ (1947), ‘Letter to a Phoenix’ (1949), and ‘The Figure’ (1949) reflect Campbell’s muted utopia while analogising temporal continuity. Whether hopeful

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93 Asimov straddled both groups: he published extensively in *Astounding*, though his ‘vision’ did not ultimately align with Campbell’s.

94 Not to be confused with Jameson’s ‘anti-anti-utopianism’, a negation of anti-utopianism. See *Archaeologies* (xvi) for more.
or overly bleak in their assessment of humanity’s chances, these fictional depictions of a post-nuclear future promised continuity in opposition to fears of the final end. Given the devastating potential of the bomb and the threat of extinction that faced humanity, the anticipation of any future at all worked in opposition to nuclear fear. Both of the ‘torn halves’ of utopia do this. As I have argued, the Futurian ‘half’ aligned nuclear development with a transcendent, technological utopia, as seen in Asimov’s novels. The Campbellian utopia represented the nuclear future in a less laudatory manner that maintained a firm commitment to humanity’s continued survival. In fictions by both groups, time travel fiction was a particularly prominent allegorical mode of representation.

Nuclear age time travel fiction published in John W. Campbell’s Astounding adhered to his muted vision of a technological utopia. He was pro-technology, but did not endorse a traditional view of a wonderland brought about by scientific developments. Brians claims that Campbell:

> ...was a tireless promoter of a flattering view of science and technology. His post-Hiroshima editorials constantly stressed that the bright atomic future, so long anticipated in the pages of Astounding, had dawned at last. Pessimistic stories did not really fit his editorial style”. (255)

However, this claim is highly disputable. While Campbell was a ‘tireless promoter’ of science, he and his magazine were not universally focused on a ‘bright atomic future’. His editorials in the post-Hiroshima issues of Astounding share a common theme. They warn of the destructive potential of nuclear weapons and the very real possibility of annihilation. For example, in the January 1946 issue he wrote:

> Unless we can produce an adequate defence against the atomic bomb within the next five years, there is a very real chance of an atomic war breaking out ... [if this happens] the nation born in 1776 will cease to exist before 1966, and quite probably before 1956. (Campbell “—But” 117)

Far from focussing on the dawn of the ‘bright atomic future’, editorials like this reflect Campbell’s pessimistic attitude towards utopia. As Milner and Savage point out, a strong dystopian tradition emerged in the magazine following the bomb (40). For Campbell and many of his writers, utopia represented sterile contentment

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95 See, for example, the Jan, Feb, and March 1946 issues.
that was better to be sought after than achieved. Freedom, rather than order, was the desired goal. The protagonists in post-war Astounding “were typically in revolt against the supposedly bovine contentments of Utopia, in the interests of life, liberty, and the pursuit of a happiness instantly rendered meaningless by its possession” (Milner and Savage 39). Milner & Savage’s contention, that Campbell was suspicious of ‘traditional’ utopia, is reflected in Campbell’s own fiction. In particular, his pre-war short story ‘Twilight’ (1934) presents a utopian vision in which human life has not only become meaningless, but has actually died out. In the story a time traveller, upon returning to the present, recounts his journey to the future. He tells of humanity’s attainment of a technological utopia, but also notes that this led to the loss of its drive, passion, and curiosity. The time traveller has seen humanity’s ‘twilight’, its final hours. With technology directly responsible for the extinction of the human race, ‘Twilight’s depiction of technology runs counter to Brians’ assertion that Campbell was a “tireless promoter” and ‘flatterer’ of technology (255). However, the story does hold out some hope for a final continuity of life, and perhaps a different form of utopia. During his visit to the future, the time traveller sparks the creation of intelligent machines, hoping that they will provide humanity with a grand legacy. What Campbell presents here, and what his editorial policy brought to post-war Astounding, was a muted utopia that comes about via a downfall. It is utopia via anti-utopia (dystopia), which is central to this version of the temporality of nuclear fear: the anticipation of a (great) future despite the reality of large-scale destruction.

Astounding’s prominent post-war utopian anti-utopianism represents the continuation of life following nuclear devastation. By depicting such continuity despite cataclysmic destruction, such utopias reflected the complex temporalities of the fear of nuclear technology. They both acknowledge the bomb’s world-destroying potential while promising that human ingenuity and will, responsible for such a miraculous technological breakthrough, would see life continue. As Milner and Savage argue, Campbell’s utopia “became an all-consuming inferno, which nonetheless held out the hope of redemption through fire” (42). This is a

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96 Campbell’s sequel to the story, ‘Night’ (1935), suggests that this fails: the AI created in ‘Twilight’ subsumes humanity and leave Earth lifeless.
useful, if colourful, description of the Campbellian utopia, and one that leads directly to my argument, later in this thesis, regarding time travel’s role as an apocalyptic fiction. While I shall develop this point in greater detail in chapter 6, this description suggests that, like apocalypse, which in its various forms offers temporal continuity following a cataclysm, Campbell’s ethos implies continuity following nuclear ‘fire’. This ‘hope of redemption’, despite cataclysm, can be considered a reaction to the damage done by the bomb to humanity’s ‘sense of immortality’. Robert Lifton argues convincingly that the bomb threatened the sense of “symbolic immortality” that allows humans to confront death (The Future 13). He sees “imaginative forms of transcending death” in the idea of ‘living on’ through one’s family, faith-based notions of life after death, the creation of individual works of art, and so on (14-15). This is a universal need “for a symbolic relationship toward that which has gone on before, and that which we know will go on after, what we realize to be our own finite individual lives” (13). This is the embodiment of what I have been calling temporal continuity, the sense that humanity will continue long after we, as individuals, are gone. The bomb endangers this ‘sense of immortality’, or temporal continuity, Lifton argues, by threatening to end all life on Earth. This threat of the ‘final end’ is overcome in Campbell’s utopias by representations of redemption despite a nuclear ‘end’.

This temporality of nuclear fear, the anticipation of continuity despite nuclear destruction, finds prototypical expression in the magazine’s post-war time travel fiction.

Campbell’s redemptive utopian anti-utopianism, and its sense of temporal continuity, is reproduced in both ‘Time and Time Again’ by Henry Beam Piper (1947) and Fredric Brown’s ‘Letter to a Phoenix’ (1949). First published in Astounding in April 1947, Piper’s story uses time travel to foreground the notion of continuity, despite the threat of the bomb. Protagonist Allan Hartley is on the verge of death following a nuclear explosion during World War III. He passes out, and awakens as a fourteen year old in 1945, a few days before the bombing of

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Lifton would be critical of this ‘softening’ of the nuclear threat. He derides belief systems and millenialist groups that applaud the idea of nuclear holocaust as a necessary facet of salvation (Lifton The Future of Immortality: 158). He believes it is important to acknowledge the potential ‘end’ to ensure it doesn’t come to pass: “Just as we know that we must imagine our own death in order to live more fully, so must we now imagine the end of the world in order to take steps to maintain human existence.” (159)
Hiroshima⁹⁸. He convinces his father that he has foreknowledge of the next thirty years, and simultaneously discovers that he can alter the future⁹⁹. Hartley plans to use his knowledge to amass wealth, install his father as President, and thus hopefully avoid the Third World War. The story sees time travel subvert the ‘end’ implied by both personal death and a devastating nuclear conflict. By returning to the past at a moment in which both he and humanity are dying, Hartley is provided with temporal continuity. The future he plans to create represents Campbell’s ‘muted’ anticipation. He notes that, despite his foreknowledge, the world situation will still be “crucial”. He hopes his plan can avoid the nuclear conflict that killed him, but is far from certain. Without his death, and the bomb that caused it, this ‘reborn’ future would not have been possible. Time travel allows for the text’s reproduction of prominent fears relating to nuclear technology: atomic war within the borders of America, and the death of the protagonist, are depicted explicitly. Despite this dystopian imagery, the time travel narrative device allows for the creation of a sense of hope. If Hartley’s plan succeeds, war will be averted and a potential utopia created. However, this hope remains muted in the narrative. It is proposed by the protagonists, but not depicted in the story’s timeline. It remains a possible future, unlike the galactic empire Noýs describes in The End of Eternity. She has used time travel technology to ‘see’ this future come to pass. As such, the story is an example of utopian anti-utopianism, one that uses time travel to reproduce a muted version of ‘anticipation’.

Brown’s ‘Letter to a Phoenix’, first published in Astounding’s August ’49 issue, is more hopeful regarding humanity’s continuity, but suggests that the cost will be devastating. The story presents the bomb as responsible for both the narrator’s and humanity’s continuity. The story’s unnamed narrator was present during the “first war ... in which both sides used nuclear weapons” (Brown). The radiation created during the conflict reacts with his rare genetic condition, making him age extremely slowly. In the following 180,000 years he ages only 11. In other words, a feature of the bomb that should have killed him instead made him

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⁹⁸ This type of ‘machineless’ time travel, via mind transference, is not of interest to scholars of the subgenre such as Nahin (1-10). However, Piper includes a lengthy pseudo-scientific explanation for the phenomena, which aligns it more closely with Campbell’s strict editorial policy.

⁹⁹ Alternate timelines are briefly postulated, which allows for the negation of potential paradoxes.
virtually immortal. While technically not a time travel story, its near-immortal narrator effectively travels in time. During these eons the narrator has witnessed countless cycles of destruction. Civilisations rise, develop nuclear weapons, and then fall. It is revealed that the eponymous ‘phoenix’ is humanity. It always rises from the nuclear ashes and rebuilds. Rather than admonish nuclear technology for its destructive potential, the narrator lauds the bomb and its regular razing of Earth as the key to the species’ “immortality”. The cycle of nuclear wars that the narrator observes over 180,000 years leads him to the conclusion that the “human race is the only immortal organism in the universe”. Even when nuclear destruction results in the death of “nine tenths or more” of the human race, humanity survives. The story’s twist, that the narrator is not composing his ‘letter’ 180,000 years in the future but in the years following Hiroshima, links it to contemporary fears regarding a potential nuclear end, and provides an allegorical representation of temporal continuity. The message is that the anticipated “World War III” will be a “mild atomic war”, just another part of the eons-long cycle and a key to humanity’s long-term survival. As such, the story is a direct counterpoint to the ‘sense of immortality’ that Lifton argues was damaged by the nuclear age’s secular apocalypse. Instead of nuclear destruction leading to the ‘death’ of immortality and the end of humanity, it is directly responsible for more than just a ‘sense’ of immortality, but its confirmation. Once again, destruction is seemingly inevitable in this story, but humanity is fated to survive. Both of these stories are examples of time-centred fiction reproducing the utopian anti-utopianism that Campbell promoted in post-war Astounding.

Narrative depictions of time travel in fictions such as ‘Time and Time Again’ and ‘Letter to a Phoenix’, therefore, present the ‘anticipation’ of a future in spite of the anxieties of the atomic age. Time travel is used to infuse descriptions of the destructive potential of nuclear technology with a morsel of hope and a sense of temporal continuity. The message is that there will be no ‘final end’, but that humanity will maintain “biological, cultural, and historical connectedness” and therefore symbolic immortality (Lifton The Future 13). As such, time travel narratives present the literal repair of the figurative temporal schism that was a feature of nuclear fear. For Campbell, the development of the bomb represented the ‘death and rebirth’ of civilisation (“Atomic Age”). This image is echoed in
numerous scholarly works. For example Bousquet argues that Hiroshima (and, he argues, 9/11) represent a “rupture our sense of continuity of time, thus forming a temporal break and omnipresent point of reference” (741). Similar descriptions of schisms in historical or cultural time are found in the work of Spencer Weart, Paul Boyer, and Bernard McGinn, who speak of the emergence of nuclear technology as a convulsion or discontinuity in historical time (McGinn, cited in Dewey 10; Weart [1988] 217; Boyer 279). Time travel allows for the literal presentation of such ‘discontinuities’ in time, while providing some ‘hope’, via their protagonists’ survival, that humanity will live on. Even in the bleakest representations of Campbellian ‘anticipation’, such as Edward Grendon’s ‘The Figure’ (Astounding, July 1947), some ‘hope’ for life, if not humanity, remains. Here, a team of scientists is investigating cockroach infestations at nuclear sites. The team uses time travel technology to pull an object from the future. It is a statue of an intelligent figure, an anthropomorphised cockroach. While primarily a reproduction of the fear of nuclear radiation, this story follows the path set by Campbell’s own ‘Twilight’: the flicker of hope is that while humanity may not survive, time will go on and life will evolve. While this ‘hope’ is extremely muted, it remains somewhat ‘positive’ in contrast with the end of all life on Earth (and thus the end of time), as was a contemporary possibility. Again time travel is the catalyst for a contrast between a contemporary setting and its fears of nuclear devastation, and a depicted future that confirms temporal continuity. The time travel subgenre also allows for the depiction of destruction, but then continuity by removing the protagonist to another time and providing hope for change, as in Piper’s story. The ‘time traveller’ in Brown’s story is able to provide a description of the ‘big picture’ of humanity, by occupying a position ‘outside’ time, much like Noës in Asimov’s novel. This viewpoint provides the promise that possible destruction is also the key to humanity’s continuity and immortality. Such messages, despite their anti-utopian elements, can be considered panaceas to the prominent fears regarding nuclear technology that surrounded the production of these narratives.

It is this role, the ability to allegorise messages of temporal continuity and hope, that marks a prominent secondary role of time travel fiction of the early atomic age. As I have argued, time travel fiction not only reproduced the temporalities of crisis, but also the modes of alleviation that provided relief and
comfort in the face of the period’s anxieties. This concept will be the focus of the rest of this thesis, and I examine it in greater detail in the coming chapters.

This particular temporality, the ‘anticipation’ of a (grand) future despite the bomb’s threat to humanity, was similarly represented by both “torn halves” of the “utopian imagination” (Milner and Savage 43). Campbell’s Utopia via dystopia stood in opposition to that of the Futurians\(^{100}\), who presented utopia as a unifying, desirable prospect. Despite the differences between utopian anti-utopianism and the Futurians’ “technological utopianism”, both groups’ time travel narratives presented a promise of temporal continuity in the face of the nuclear threat (Milner and Savage 38). Brians notes that after around 1955, writers treated the bomb not as “an apocalyptic horror, but a problem to be solved” (255). However, representatives of both utopian groups, including Asimov and Fredric Brown, do more than ‘go easy’ on the bomb. They present nuclear technology as the key to utopia, depicting a future that thrives, owing to, rather than in spite of, the dangers of the bomb. Such tempering of the impact of nuclear technology is a temporal solution to the similarly temporal problem of nuclear fear. In these stories the contemporary fear that the bomb would bring about the end of time is shown, via time travel, to be ill-founded. As such, this example of the allegorical mode of time travel fiction provides an introduction to the second key function of the subgenre. Nuclear age time travel fiction analogised the temporalities of the socio-historical crises contemporary with their composition. It also reproduced the (time-centric) comfort-making structures that worked to reduce fears and anxieties created by such crises. These modes of alleviation, as I have chosen to call them, include phenomena such as propaganda and apocalyptic fictions and are the focus of the remainder of my thesis. In the following chapter I draw parallels between the temporal manipulations in *The End of Eternity* and nuclear age civil defence propaganda. I argue that the text reproduces the same comfort-making process as the program designed by the US government to manage and control the population’s nuclear fear. As such, the chapter provides another key example of time travel fiction’s hitherto unexamined allegorical mode: it reproduces the

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\(^{100}\) As mentioned earlier, Asimov was a Futurian, yet he was also published in Campbell’s magazine, meaning that he bridged both of utopia’s “torn halves”. (Milner and Savage 43)
alleviatory function of propaganda, its ability to counteract the temporalities of the mid-twentieth century nuclear crisis.
Chapter 5 – Civil Defence Against Nuclear Fear: Propaganda and Asimov’s *The End of Eternity*

The temporalities surrounding a particular crisis, or their ‘modes of alleviation’, can have ‘directions’, or ‘tenses’. By this I mean that their primary focus or concern rests either in the past, present, or future. For example, the temporality examined in the previous chapter, ‘anticipation’, can be considered ‘future directed’. Its focus is on what ‘will be’, what the future—relative to the time of the crisis in question—holds. In the case of the crisis of nuclear technology, the temporality ‘anticipation’ provided a comforting message of temporal continuity. But during the same crisis there was a prominent ‘past-directed’ temporality, one that is similarly reproduced in time travel fiction, and in some of the same texts. The past—in particular scientific consensus regarding the destructive potential of nuclear weapons—needed to be ‘rewritten’ in order to contain the public’s nuclear fear. This temporality became more urgent when the Truman government advanced its policy of nuclear deterrence, which first “appeared in American military thought …a mere three weeks after the bombing of Hiroshima and Nagasaki” (Oakes and Grossman 362). For a nuclear future to be accepted by the public, and for the proposed policy of deterrence to be widely accepted as the ‘right’ one, the consequences of a potential nuclear war needed to be manipulated (Oakes and Grossman 363). For this purpose the US government turned to a particular form of propaganda. The civil defence program was designed to reduce public fears by, in part, refashioning past truths. Both scientific ‘truth’ regarding the destructive power of the bomb, and the Truman government’s role in Hiroshima, were effectively ‘rewritten’. This figurative rewriting of the past is an example of ‘integration propaganda’, a past-directed form of persuasion designed to create acceptance of a desired ‘present’.

In the initial sections of this chapter, the socio-historical example of civil defence propaganda provides insight into the role played by nuclear age time travel fiction. As I will argue, it reproduced the function of temporal ‘modes of alleviation’ such as integration propaganda. Through further analysis of *The End of Eternity*, I shall demonstrate that depictions of time travel provide an allegorical representation of key aspects of civil defence propaganda. This role of time travel fiction is significant for two primary reasons. Firstly, it is a sociological function of
the subgenre that has largely been neglected. Also, its literalisation of propaganda’s temporal elements reveals limitations of this mode of alleviation. Propaganda’s sub-categories, ‘vertical’ and ‘horizontal’ are reproduced in Asimov’s novel by two distinct types of time travel: ‘change the past’ and ‘branching time’. By drawing parallels between the two forms of propaganda and the corresponding model of time travel, I highlight problems with these modes of alleviation. In particular, I will demonstrate that vertical propaganda is effective, yet prone to creating renewed anxiety as a result of its manipulative connotations. Conversely, I will show that nuclear-age horizontal propaganda assuages nuclear anxieties without such negative implications.

The temporal nature of the nuclear age also involved society’s questioning of the recent past. Anti-nuclear rhetoric grew in the post-war years, spurred on by publications such as Hershey’s *Hiroshima* (1946) and *One World or None* (1946), which featured anti-nuclear essays by former Manhattan Project scientists. Doubts were raised regarding the moral and social correctness of building and using the bomb (Boyer 232-38). Such questioning of the past was another temporality surrounding nuclear fear and the development of nuclear technology in the early atomic age. The suggestion that past choices were highly immoral added to anxieties regarding the present and the future (Boyer 236-7). In the final section of this chapter, I argue that *The End of Eternity* is also an example of Cold War integration propaganda, designed to alleviate the fear created by such questioning of the past; I demonstrate that Asimov’s novel itself is a socio-historical artefact that acted as a ‘mode of alleviation’. It uses time travel’s allegorical mode to present a message that, not only did the US make the right choices in the past regarding the bomb, but that those past choices optimised the nature of the present. They created a present that was the ‘best of all worlds’, a propagandistic attempt to assuage the fears that accompanied the new nuclear reality.
Integration propaganda and ‘past-directed’ time travel

Integration propaganda is long-form propaganda that seeks an individual’s adherence to society’s dominant ‘truths’ and behavioural patterns (Ellul 75)\(^1\). In other words, integration propaganda’s goal is, as its name suggests, to ‘integrate’ individuals into a society. The propagandist using this form aims for the target population to accept and participate in an existing, dominant ideological framework. Integration propaganda is often used following a period of societal upheaval or turmoil (which may in turn have been enflamed by ‘classic’ propaganda), as it “[stabilises] the social body ... unifying and reinforcing it” (75). This stabilisation often involves the manipulation of facts regarding the recent past or present conditions. It is through such manipulations of scientific ‘truth’ that the individual is persuaded to accept the dominant social conventions and, as Ellul puts it, to become “an active participant in its economic, ethical, esthetic, and political doings” (75). The onset of the nuclear age and the subsequent Cold War saw the US government deploying integration propaganda to create acceptance and participation in a new, post-nuclear society. One key example that I examine shortly is the civil defence program of the 1950s, which involved various Government publications including the famous ‘duck and cover’ film series. This program marks a key difference between the integration and ‘classic’ forms:

Integration propaganda is promulgated not in pamphlets put out by small groups of subversives or in broadcasts made by foreign powers, but in the main channels of communication - newspapers, television, movies, textbooks, political speeches etc.- produced by some of the most influential, powerful, and respected people in a society (Silverstein 50)

In other words, this type of propaganda is practiced within a society with the aim of reducing fear and creating cohesion and unity, rather than on an external population with the goal of ‘agitating’ and prompting dissonance. This alternate aim is central to both the temporality of integration propaganda, and thus its role as a ‘mode of alleviation’. ‘Classic’ propaganda uses visions of the future to agitate power structures in the present. The integrative form, conversely, figuratively manipulates the past via a society’s communication channels, and does so in order

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\(^1\) I do not focus on sociological propaganda in this chapter, as it is said to emerge spontaneously—no one ‘sets out’ to practice it. (Ellul 64)
to create acceptance and thus reduce fears in the present. As a temporal process, designed to relieve fear, propaganda is a key example of my concept of ‘modes of alleviation’. Despite its agitative connotations, propaganda can be a highly comforting phenomenon. There are many definitions of propaganda, and innumerable studies of the subject. However, Jacques Ellul’s *Propaganda: The Formation of Men’s Attitudes* (1973), and in particular his taxonomy of the subject, remains among the most detailed and comprehensive. This text forms an ideal foundation for my discussion here, as Ellul clearly delineates the comforting aspects of propaganda—its ability to eliminate anxiety:

Finally, propaganda also eliminates anxieties stemming from irrational and disproportionate fears, for it gives man assurances equivalent to those formerly given him by religion. It offers him a simple and clear explanation of the world in which he lives—to be sure, a false explanation far removed from reality, but one that is obvious and satisfying. It hands him a key with which he can open all doors; there is no more mystery; everything can be explained, thanks to propaganda. It gives him special glasses through which he can look at present-day history and clearly understand what it means. It hands him a guide line with which he can recover the general line running through all incoherent events. Now the world ceases to be hostile and menacing. The propagandee experiences feelings of mastery over and lucidity toward this menacing and chaotic world, all the more because propaganda provides him with a solution for all threats and a posture to assume in the face of them. (159)

This lengthy quote is central to the notion of propaganda as a ‘mode of alleviation’. As I outlined in the previous chapter, modes of alleviation are temporally laden phenomena that serve an anxiety-reducing purpose. In terms of ‘tense’, classic propaganda is ‘future-directed’. By this I mean that it presents an image of the future to prompt action. Comparatively, integration propaganda can be considered ‘past-directed’, as it involves the reinterpretation, via “special glasses”, of past events in order to justify the dominant ideology of the present, or “present-day history”. Its aim is not to ‘agitate’ the present in order to install a new ideology sometime in the future like classic propaganda. Nor does it, like the concept of ‘anticipation’ that I examined in the previous chapter, involve the

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102 I am not alone in this view: in-depth studies of propaganda by theorists including Renz and Foulkes have based their analyses on the work of Ellul.
alleviation of fear via visions of the future. Integration propaganda is a mode of alleviation that reduces fear by solidifying, and thus providing “mastery over”, the present via a reinterpretation, or rewriting, of recent history. It is thus a mode of alleviation: a temporal process that acts to counter a contemporary fear. In the early cold war, the ‘fear’ that required controlling was nuclear fear, and the dominant form of domestic integration propaganda in the US was the civil defence program.

The socio-historical focus of this chapter, the example of integration propaganda that I will demonstrate is allegorically represented in nuclear age time travel fiction, is the US Government’s civil defence program. As I will demonstrate in detail, this program was an example of integration propaganda, and a practical example of what I mean by ‘modes of alleviation’. The goal of civil defence, the alleviation and control of nuclear fear, is described by Oakes and Grossman:

... civil defense specialists developed a plan for the administration and control of public emotions about nuclear war, and especially about the possibility of a nuclear attack on American cities. This plan included the design of a system of emotion management that would suppress an uncontrollable and dangerous terror of atomic weapons and foster in its stead a more benign and pliable nuclear fear. (361)

Much like Ellul’s description of integration propaganda’s pacifying function, this program was designed to control citizens’ fears, in order to create a sense of control over the “menacing and chaotic” nuclear reality (Ellul 150). What has not yet been examined in relation to this program or integration propaganda in general, and what makes the concept a mode of alleviation, is that this is a temporal process. As I shall argue, the function of civil defence propaganda was deeply temporal. By this I mean that its utility depended on a figurative alteration of the “ontological differences between the past and the future” (Le Poidevin and MacBeath 4). In particular, such propaganda attempted to reconfigure or ‘rewrite’ the usually inviolable past, assigning it a malleability usually associated only with the future. It is such time-centred aspects that link propaganda to the era’s time travel fiction. Integration propaganda is allegorically reproduced in ‘past-directed’ time travel fiction: both represent the manipulation of the past to create a desired vision of the present. By drawing parallels between integration propaganda and this sub-type of time travel fiction, I aim to detail the temporal aspects of this
persuasive technique. My intention is to highlight integration propaganda, such as the civil defence project, as a mode of alleviation, while delineating this hitherto-unacknowledged allegorical mode of time travel fiction.

Time travel fiction’s allegorical reproduction of integration propaganda helps to articulate the limitations and benefits of the phenomenon. While it can seem manipulative and negative, this form of propaganda can also be uplifting and affirming. Prominent studies of propaganda argue that this is a result of its ‘direction’ (Ellul 80). The methods used to integrate a population can be directed ‘vertically’ from a privileged authority, such as a government. Alternatively, they can propagate ‘horizontally’ throughout a society, via the media, schools, and other state apparatuses. These two types, I will argue, have different ‘temporalities’. While both are used to assuage fears, and thus serve as modes of alleviation, vertical propaganda runs the risk of being seen as manipulative and negative. Vertical integration propaganda is allegorised by a ‘change the past’ model of time travel, while ‘branching time’ narratives reproduce the horizontal form. These forms of time travel rely on different models of time that hold polarised connotations. They can be manipulative and destructive, or uplifting, just as propaganda can be subjugating or enabling, depending on its verticality or its horizontal nature (Ellul 80-82). I will outline the differences between these two forms of integration propaganda, their temporalities, and their roles as modes of alleviation via an analysis of Asimov’s The End of Eternity. Both forms of ‘past-directed’ time travel are represented in the novel, and both allegorise the processes involved in integration propaganda. Thus, my analysis in this chapter serves two main purposes. It demonstrates that civil defence propaganda was a ‘mode of alleviation’, while articulating time travel fiction’s role in reproducing such comfort-making processes. However, my first step is to make a case that time travel in The End of Eternity represents integration propaganda. As such, it is necessary to outline the two primary types of ‘past-directed’ time travel, and how they reproduce the key elements of propaganda of integration.

103 There is a clear parallel between Ellul’s ‘vertical propaganda’ and Althusser’s ‘repressive state apparatuses’ (RSAs). Both involve vertically directed power structures, with Althusser’s RSAs including ‘the Government, the Administration, the Army, the Police, the Courts, the Prisons’ (136). There is also significant overlap between ‘horizontal propaganda’ and Althusser’s ‘ideological state apparatuses (ISAs), with both involving the use of communication channels, various cultural forms including literature, and community influence as media of control (136-7).
Past-directed time travel allegorically reproduces key features of integration propaganda. I am defining ‘past-directed’ as time travel that is focussed on attempts to change or manipulate the past, relative to the character attempting the change. This narrative form comes in two primary types, with near-infinite variations. The first sub-type, ‘change-the-past’ time travel, involves the erasure of a time line. A time traveller changes recorded history and the effect is a drastically altered timeline, with the original reality destroyed. In terms of propaganda, this type of time travel simulates the technique of ‘revising’ what science deems ‘truth’. As part of the civil defence initiative, the Truman government systematically altered the public’s perception of the dangers of nuclear weapons (Oakes 67-68). As I will show, such a variation of ‘reality’ is reproduced in Asimov’s novel. This form of propaganda is presented in The End of Eternity as negative, and I will argue that this is because of the history-erasing connotations of the time travel model with which it is aligned. The second sub-type of time travel I focus on in this chapter is the ‘branching time’ variety. As the name suggests, this form involves an alternate model of time. Instead of a single time line, this type of time travel occurs in a universe that constantly bifurcates. Alternate timelines ‘branch off’, thus creating an infinite ‘stack’ of parallel worlds. Instead of destroying their timeline, the actions of a time traveller in such a universe simply create new branches. As I will detail later, ‘branching time’ stories depict a comforting sense of individual agency. Time travel in such a universe ‘collapses’ infinite possibility into a single experience, and this collapse is prompted by the choices and actions of the individual. Such a collapse recalls Ellul’s description of the role of integration propaganda: it “dissolves contradictions and restores to man a unitary world in which the demands are in accord with the facts. It gives man a clear and simple call to action that takes precedence over all else” (159). As such I will argue that ‘branching time’ time travel is representative of a positive form of integration propaganda. I will analyse these two forms of fictional time travel separately via their use in The End of Eternity, and demonstrate that both serve as ‘modes of alleviation’, as they diegetically represent the alleviation of nuclear anxieties. Following this

104 The End of Eternity is ideal for highlighting the connections between past-directed time travel and integration propaganda, as it contains both models of time. Both a variable timeline and a form of ‘branching time’ are central to the narrative. As such, it is able to provide insight into the temporal aspects of integration propaganda’s manipulation/agency dichotomy.
examination, I argue that Asimov’s text itself was a non-diegetic example of Cold War integration propaganda.

**The End of Eternity, ‘change the past’, and revisionist propaganda**

Time travel in *The End of Eternity* has significant parallels with a key example of integration propaganda. The US government’s civil defence program was concurrent with the novel’s 1955 publication. It comprised a “massive series of government publications and films, newspaper and magazine articles, radio and television scripts, interviews and speeches, and even novels”, the first of which appeared in January 1951 (Oakes and Grossman 378). Asimov’s novel is not a direct representation of civil defence—Heinlein’s *Farnham’s Freehold* (1964) would be a better example—as it more directly engages with the period’s prominent ‘anti-science’ rhetoric. However, there are clear parallels between the motivations and methods of Asimov’s Eternals and the US’s civil defence strategy. That said, the two have opposing goals. The civil defence program was deemed necessary as a result of the government’s adoption of a strategy of nuclear deterrence. This policy needed to be acceptable even considering the risk of failure. As such, it was necessary to limit public fear by convincing “the American people ... that a nuclear attack on the United States would not be too costly” (Oakes 68). This goal, to reduce fear by promoting nuclear weapons as a vital part of the US defence strategy, stands in opposition to that of the Eternals, who travel in time to erase nuclear technology from existence. Despite this difference, two key parallels exist between the Eternals and the civil defence program. Both aim to alleviate nuclear anxiety. The Eternals act through their own fear, and the agencies responsible for the program had a clear objective of minimising ‘nuclear terror’ (Oakes and Grossman 361). Most importantly, they share analogous methods. The civil defence program was conceived in “order to neutralize the horrifying aspects of nuclear weapons” (378). To achieve this, the program’s integration propaganda centred on the alteration of ‘facts’ regarding the dangers of nuclear weapons. It is such alteration of ‘facts’, of recent history and science, that marks integration

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105 I argued this point in chapter four of this thesis, and will return to it in the final section of this chapter.
propaganda as ‘past-directed’. It is also this feature of the government’s program that is allegorically reproduced in ‘change-the-past’ time travel; the Eternals literally ‘change the past’, altering reality in a way that recalls the whitewashing of nuclear dangers. These connections between integration propaganda and the novel’s use of time travel highlight the temporality of propaganda, and the narrative device’s role as a reproduction of this mode of alleviation.

As with the integration propaganda of the early Cold-War years, the Reality Changes in The End of Eternity are primarily designed to reduce nuclear fear. The Eternals believe that without their intervention, humanity would head down a path towards “atomic warfare and the end of man” (Asimov Eternity 159). This deep-seated fear of nuclear destruction motivates their tinkering with time, which mirrors the US’s approach to its own moderation of nuclear ‘reality’. Discussion of the bomb as “the ultimate deterrent in the American military arsenal” began just weeks after Hiroshima and Nagasaki (Oakes and Grossman 362). The plan that was formulated included “the design of a system of emotion management that would suppress an uncontrollable and dangerous terror of atomic weapons” (361). It was decided that to counter the “psychosis of fear” that was said to be gripping America, the public would be exposed to a systematic reformulation of the bomb’s dangers (Oakes and Grossman 370). Both the Eternals and the US government undertake very conscious efforts to mitigate the fear that nuclear technology could lead to the end of time. Commentators, such as Peter Middleton and Tim Woods, have noted a link between the Eternals’ “favour of scientific objectivity and an unanalysed appeal to vague ideals of human betterment copies the affectless functionalism of some government publications on nuclear history” (Middleton and Woods 267). This is an excellent point. The government’s official documentation of Hiroshima, as exemplified in the United States Department of Defense Report on The Effects of Nuclear Weapons to which Middleton and Woods refer, involves a systematic whitewashing of the human cost of the attacks on Japan, reducing it to dry statistics among images of an empty, bodiless ruined

106 Again, see chapter three for more details regarding the Eternals and ‘nuclear fear’.

107 See Robert J. Lifton’s Hiroshima in America: Fifty Years of Denial for a detailed account of this practice of revision and censorship.
city\textsuperscript{108}. It is an example of integration propaganda as ‘revisionism’, an attempt to ‘change the past’ in order to alleviate nuclear fear. Such ‘alterations’ made by the US government, and the Reality Changes of the Eternals, work to counter this particular temporality of crisis, making them analogous examples of a ‘mode of alleviation’.

Civil defence propaganda involved the use of ‘revisionism’ to alleviate nuclear-age anxieties. By ‘revisionism’ I mean the alteration of facts and the historical record by both the government and by sections of the public—a virtual ‘revision’ of history. A key example of this past-directed propaganda is the U.S. government’s claims that death estimates regarding possible nuclear attack were “exaggerated” (Ruthven 43). Ken Ruthven explains that the “strategy was to treat a nuclear attack as posing merely the same sort of logistical problems as a flood or an earthquake; in other words, [the government] aimed at normalising nuclear disaster by naturalising it” (43). Such a strategy, with the aim of equating the nuclear threat with a natural disaster, represents an attempt to ‘rewrite’ the ‘facts’, as asserted by the scientific community, regarding the bomb. Oakes and Grossman point out that the:

\begin{quote}
... first phase in the Cold War system of emotion management was to develop new cognitive standards governing the conception of nuclear weapons. These standards were designed to suppress nuclear terror by reconceptualizing nuclear arms as “normal” instruments of military policy. (376)
\end{quote}

This program of “conventionalisation” was designed to foster a belief that, following nuclear war, life would continue relatively unchanged, and to allow the government’s policy of deterrence to remain tolerable (Bourke 283; Oakes and Grossman 363). While the facts pointed to the total annihilation of all structures at ground zero of a nuclear blast, citizens were advised to simply reinforce their basements with extra bricks in order to survive (Bourke 270). In other “ludicrous” portrayals of the post-nuclear world, such as in the California Office of Civil Defense’s Panic Control and Prevention: Instructor’s Manual and Teaching Outline published in 1951, it was advised that shelters would be “places where people would sit around engaging in community singing, ... community dancing and

\textsuperscript{108} Today, such misrepresentation takes the form of, for example, the use of terminology such as ‘collateral damage’ to describe the loss of human life.
playing cards" (270-1). As such, revisionism involved a figurative refashioning of reality, a temporal process that, as I demonstrate shortly, is allegorised in The End of Eternity. However, this reformulation of reality was not limited to atomic explosions themselves, but also covered their more exotic effects.

Such changes to scientific and historical consensus included the representation of radiation. Presented as the only difference between nuclear and traditional explosives, the problem of radiation was countered with its own revisionism. Oakes and Grossman detail two instances of this type of integration propaganda:

Ralph Lapp—atomic physicist, member of the Manhattan Project, and early advocate of civil defense—attempted to demystify radiation and reduce the "numbing effect" that the mere mention of radioactivity had on the layman. According to Lapp, radioactivity is just another of the innumerable hazards of contemporary life. (379)

Also detailed is a CBS news broadcast that presented radioactive fallout as completely manageable. Using the example of peeling a banana and a lettuce, it was suggested that contamination could be countered simply by taking off outer layers of clothing and washing thoroughly (Oakes 79). The overall message was that “[r]adiation could be managed by a few simple techniques and the addition of a new kitchen appliance, the Geiger counter” (79). With the effects of radiation on mutation and tumour growth known since the early 1900s, such propaganda attempted to refashion ‘truth’ into a more palatable form. All of these examples of integration propaganda symbolise attempts to alter ‘reality’. The civil defence program hoped to integrate the public, to have them accept Cold War foreign policy, by changing what was ‘true’. A synonymous method of integration propaganda is reproduced in The End of Eternity in the form of change-the-past time travel.

The changes to time made by the Eternals are, I would argue, akin to the process of civil defence revisionism. As I have noted, the ‘Reality Changes’ are employed in the novel as a reaction to extreme nuclear fear. The Eternals’ Reality

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109 There is no dominant ‘present’ in The End of Eternity, as much of its action takes place in Eternity, which exists outside of time. As such, ‘change the past’ is not 100% accurate when referring to the novel’s Reality Changes. However, the effect of these changes is the same as in others that depict a variable timeline, such as Bradbury’s ‘A Sound of Thunder’.
Changes involve making an alteration to the historical record, which results in a causal ripple effect that alters time. Reality is changed, with the desired result being the increased integration of the Timers, the inhabitants of ‘regular’ time, into the Eternals’ desired ideological model. Using temporal manipulation, the Eternals change history, literally, to minimise the possibility that nuclear technology will result in the end of human existence. The consequences of scientific advancement that frightened the Eternals, such as space stations and other derivatives of nuclear technology, are ‘written out’ of existence. Such alterations recall official government strategy such as the information booklets, news broadcasts, and the ‘Duck and Cover’ propaganda campaign\textsuperscript{110}, which similarly re-wrote the scientific consensus regarding the likely outcome of a nuclear attack. The effect of such propaganda was a rewriting of what was ‘truth’ for the public-at-large, an effect replicated by the Eternals’ changes in time. Once the Eternals make a Change, all Timers are themselves ‘rewritten’: they have new memories, new personalities, and have no memory of the previous reality (Asimov \textit{Eternity} 8). For them there is only one ‘truth’: the new, safe, edited version that has had the consequences of technology deemed dangerous by the Eternals removed. The Eternals’ use of change-the-past time travel is therefore a literalisation of this key example of integration propaganda. It represents an exaggerated form of the civil defence program’s reformulation of scientific and historical ‘truth’, and depicts the literal alteration of reality.

The allegorical representation of integration propaganda in \textit{The End of Eternity} is also evident in the Eternals’ secondary ‘motivation’. The Eternals, and the US government of the early Cold War period, used revisionism to maintain their public image as ‘protectors’. Changes to reality are made when the Timers begin to question whether the Eternals are the benevolent overseers they claim to be. Just as the US administration worked to maintain its positive image following Hiroshima, Reality Changes are enacted to breed out undesirable beliefs about Eternity and the Eternals. Assistant Computer Finge, Harlan’s primary antagonist in the novel’s early stages, states that the Eternals must be able to supply a “father

\textsuperscript{110} This campaign involved the proliferation amongst school children, via government-produced films, of the idea that ducking under one’s school desk, or diving into the gutter, would allow survival in the event of a nuclear attack. \textit{The Atomic Café} (1982) details a number of these propaganda films. (Loader)
image and a certain feeling of security” for the Timers (Asimov *Eternity* 46). Any undesirable or unfavourable beliefs regarding Eternity are physically removed from reality. This policy of the Eternals is reminiscent of the widespread revisionism of the Truman government, which was designed to allow it to retain the moral high ground and to maintain its image as a secure protector of the American people. The secret of Reality Changes is carefully guarded from Timers, who instead are led to believe that the Eternals’ “chief function” is to “supervise intertemporal trade” (46). Thus, while the Eternals are responsible for repeatedly erasing and rewriting the lives of all human beings, they present themselves as benign overseers, importing and exporting required goods and medicines from one century to another.

The Truman government, following World War II, practiced this same process of revisionism. Both groups ‘revise’ history with the purpose of guarding a destructive fact and maintaining an image as protectors. While responsible for bringing the bomb into the world, and for the subsequent damage to the continuity of time, the US Government worked to alter the historical record in order to retain its benevolent image. A key example of this form of revisionism is evident in the details surrounding the production of *The Beginning or the End* in 1945-6. As Mick Broderick (“The Buck Stops”) argues, a central aspect of the film’s production was the conscious and deliberate ‘revision’ of history by the White House and MGM. Key issues that would otherwise negatively affect the US government’s claim to moral superiority were systematically altered before the movie’s release. For example, the film contains a scene in which it is claimed that Hiroshima was given ten days of warning before August 6th. As Broderick explains, “This is nonsense. It didn’t happen. It plays into the popular mythos that America would never launch a ‘sneak attack’ equivalent to Roosevelt’s rhetorical ‘day of infamy’ by Japanese forces attacking Pearl Harbor” (“The Buck Stops” 149). Similarly, Robert J. Lifton describes the alteration of the historical record by Truman, in an effort to defend his decision to drop the bomb:

... in one letter he wrote, he said, “Look, we offered to let them keep the emperor but they refused so we used the Bomb.” The sequence was exactly the opposite. The Japanese made peace feelers, offered to surrender, if they were allowed to keep the emperor, we made no response to those peace feelers, we used the weapon and they
kept the emperor anyhow, which they asked for in their surrender statement and we permitted them to do (Lifton “Hiroshima” 210-11)

Both of these examples show the attempted removal of negative associations from historical records\(^\text{111}\). Such propaganda represents an attempt to effectively alter history: the Truman government was attempting to present as ‘truth’ a series of events and motivations that did not occur. This process recalls that undertaken by the Eternals, who use time travel to literally alter history, replacing historical facts and events with new ones of their own design. By revising damaging facts, such as the negative connotations of the sneak attack on Hiroshima and the Japanese overtures of surrender, out of public consciousness, the US could keep its image as the saviours of the Allied forces. As such it could better integrate its population into the nuclear age. Similarly, the Eternals literally revise, or “alter” time in order to “breed out of Reality any factors that might lead to ... undesirable beliefs about Eternity” (Asimov Eternity 47). Furthering this parallel, Lifton also points out that Truman’s statement regarding the Japanese emperor was not technically a lie, as revisionism was so rife that Truman actually believed that his recollection was the historical truth (Lifton “Hiroshima” 211)\(^\text{112}\). This idea, that the morally-prompted revisionism practiced in the 1940s and 50s was so engrained that it became ‘truth’ further links the practice to the Eternals’ Reality Changes. From the perspective of those who truly believe the revised version of history, these changes have erased the original ‘truth’ and created a new version of reality. As such, The End of Eternity’s depiction of time travel is an allegorical reproduction of revisionist integration propaganda. In the early nuclear age and cold war years, this mode of alleviation was used to reduce fear and was temporally directed towards the ‘past’. Both the US government and Asimov’s Eternals altered the past to create a new truth that countered nuclear fear. While this role of time travel fiction is

\(^{111}\) In the days before the submission of this thesis, I encountered another highly relevant example of historical revisionism. ‘Operation Paperclip’ was a US government program that provided former Nazi scientists with new identities in order to allow them to work in America. This rewriting of history and refashioning of identity is analogous to the function of the Eternal’s Reality Changes, and such connections to time travel fiction are worthy of further study. See Hunt for more on Operation Paperclip.

\(^{112}\) Broderick’s paper on the creation of The Beginning or the End (“The Buck Stops”) and the numerous works by Robert J. Lifton offer excellent, extensive historical accounts of the manipulation of historical facts—I have only offered a small sample of their findings here.
significant in itself, it also provides new insight into the limitations of this type of propaganda.

*The End of Eternity* illustrates a key issue with this form of ‘revisionist’ integration propaganda: it can cause anxiety if deemed to be overly manipulative. While the motivation of both the Truman Government and the Eternals is to alleviate nuclear fear, their methods are problematic. Such integration propaganda can work with varying degrees of success to moderate fears and to integrate a population into a new paradigm. However, Asimov’s representation of this mode of alleviation shows that it can create new anxieties even while working to counteract the temporalities of a given crisis, such as those associated with nuclear fear. In the second chapter of this thesis I discussed time travel in a ‘block’ universe. This unchanging model of time implies determinism and a denial of individual free will. That said, a variable view of time, such as that held by the Eternals, holds opposite connotations. Here a single action can alter all of reality. However, such changes as those enacted by the Eternals deny agency to everyone who is affected by them. Only the propagandists who are making the alterations and changing the past manage to retain agency. In a sense this is worse than ‘block universe’ determinism, as it implies that all of reality may be changed without the individual’s knowledge. This issue is acknowledged in the novel. The Eternals do not allow Timers to learn of Reality Changes, or the “concept of a variable reality” (*Asimov Eternity* 86). The idea that time is not fixed, it is stated, “could not be faced casually by anyone”. People who are new to Eternity are said to go through “wrenching attempts to divorce” themselves from the notion of fixed time (86). Even Senior Computer Twissel confesses the deep personal distress he has felt at altering Reality (146), which is significant as he is the highest-ranking Eternal and should be the most committed to their propagandistic mission. Similarly, the primary psychological ‘disorder’ amongst Eternals is said to be the “Time-wish”, the desire to return to an unchanging, “definite” place in time (63, 27). While this description of such an invariable timeline edges towards the deterministic model of time used in Heinlein’s ‘By His Bootstraps’, here ‘solid time’ is comforting. It connotes an inability to be manipulated by unseen forces, to have your ‘self’ and your reality altered in ways that are completely outside your control. Thus, the novel’s representation of integration propaganda successfully
moderates nuclear anxiety but is explicitly associated with a sense of manipulation and a lack of free will. This is a temporal problem. If the past is ‘revised’ in a way that denies agency, then the propaganda creates further anxiety. This same problem of manipulation has been noted by Ellul in regards to ‘vertical’ propaganda.

This issue with integration propaganda as an efficient mode of alleviation, the problem of manipulation, is prevalent when propaganda is ‘vertical’. Such propaganda is directed from an authority such as a government, which “seeks to influence the crowd below” (Ellul 80). The Reality Changes’ denial of freedom and inherent manipulation mimics a central feature of vertical propaganda:

... the individual is depersonalized; his decisions are no longer his own but those suggested by the leader, imposed by a conditioned reflex. ... [His] action is not his own, though he believes it is. Throughout, it is conceived and willed outside of him ... He is mechanized, dominated, hence passive. (80)

Ellul is not alone in describing propaganda in such deterministic tones. Similarly, the Editor of The Science News-Letter noted a loss of free will in an early definition of the concept. Writing in 1932, the unknown editor stated that propaganda “controls without occasioning antagonistic emotions. Each individual behaves as though his response were his own decision. Many individuals may be coerced to behave alike, each apparently guided by his independent judgment” (Editor 266). Vertical propaganda sees individuals ‘coerced’ and ‘controlled’ in a ‘mechanised’ manner by an authority above. These descriptions mark vertical propaganda, such as the manipulative ‘revisionism’ reproduced in The End of Eternity, as an expression of what Foucault terms ‘sovereign’ power. This form of power has a similar ‘top-down’ direction to vertical propaganda. An extension of feudal/monarchical power, in which a figurehead holds power over ‘subjects’ below, sovereign power is described by Foucault as “essentially repressive” (122). With similarly negative, ‘repressive’ connotations, and the same ‘vertical’ structure, it is safe to argue that this type of propaganda is an expression of ‘sovereign power’. This assertion is strengthened by the connection between this form of power and Asimov’s propagandists. In the sovereign form of power:

The monarchy presented itself as a referee, a power capable of putting an end to war, violence, and pillage and saying no to these struggles and private feuds. It made itself
If ‘the monarchy’ in the above quote is replaced by ‘Eternity’, the statement clearly parallels the novel’s description of the Eternals. Their stated goal is to put ‘an end to war’, and they have allocated themselves a role as overseers of all of reality. They judge humanity and make changes as they see fit in a negative, repressive manner. Like ‘the monarchy’, they also move past their ‘limits’, altering reality for self-preservation, rather than the more egalitarian motive of ending conflict. Therefore, we can see that the Eternals enact ‘revisionist’ integration propaganda that is concurrently an expression of ‘sovereign’ power.

*The End of Eternity’s* use of time travel’s allegorical mode to depict this process highlights the temporality of both propaganda and this form of power; the problem of ‘manipulation’ or ‘repression’ that is associated with such forms of propaganda and power is a temporal one. If *The End of Eternity’s* reality changes are a ‘simulation’ of expressions of vertical/sovereign power, then the issue of ‘repression’ is related, as in the text, to time. In time travel terms, such expressions of power figuratively ‘erase’ the past and replace it with a new one, with no control except for a privileged few. A prominent, highly negative phenomenon emerged in the 1950s that encapsulates the temporal aspect of displays of sovereign power. The ‘brainwashing’ phenomenon is associated with vertical propaganda, the repressive, negative function of sovereign power, and is also represented literally by *The End of Eternity’s* Reality Changes.

‘Brainwashing’ was a vertical expression of power that implied the highly mechanised, controlled responses of the propagandee. Fear surrounding the technique grew following the Korean War, when twenty-one American POWs chose to stay behind with their captors (Carruthers 51). Though prominent in the 1950s, brainwashing was not a ‘real’ phenomenon, and was rather “more of an intensive indoctrination program” (55). However, it was originally mythologised as “a ‘mysterious oriental device’ - ‘an all-powerful, irresistible, unfathomable, and magical method of achieving total control over the human mind’ ” (50). Like other vertical forms of propaganda, this process involved a one-way, top-down, ‘sovereign’ power flow that centred the on denial of free will. Carruthers points out that the:
... ‘brainwashing’ theme has flourished as Enlightenment confidence in humans as autonomous exercisers of ‘Free Will’ has waned. In the 1950s ... [the] anxiety that individuals were mere cogs in ‘the system’ [was fuelled]; ‘hidden persuaders’ had burrowed under the skin of modern ‘mass society’. (47)

This ‘all-powerful’ view of brainwashing involved the belief that a person’s personality could be erased and replaced with one designed by the controlling, singular ‘brainwasher’. This top-down expression of power, coupled with the deterministic image of ‘cogs’ and ‘hidden persuaders’, corresponds to the computer-designed changes to individuals’ lives that occur with every reality change in The End of Eternity:

Then there will be a new Reality and a new you with new memories. It would be just as though nothing had happened, except that the sum of human happiness would have been increased again. (Asimov Eternity 88)

While the authoritative, controlling aspects of the Eternals’ Reality Change agenda are in themselves indicative of a criticism of vertical propaganda’s manipulative connotations, this description of a “new you with new memories” recalls the mythologised view of brainwashing. The changes enacted by the Eternals amount to a complete alteration of the individual and are thus tantamount to the “total control over the human mind” commonly associated with indoctrination (Carruthers 50). Thus Asimov’s diegetic reproduction of this form of propaganda highlights its intention as a mode of alleviation, its problematic power structure, and its temporal elements. The Reality Changes that ‘brainwash’ the timers and ‘revise’ reality involve the alteration of the past in an attempt to exert control in the ‘present’.

The overly dominating and manipulative form of propaganda allegorised by the Eternals’ tinkering with time ultimately fails. It is highly invasive, involving the erasing of the past and installation of a new reality. As such it is a literalised version of Cold War revisionism and the fear of mind control. All are examples of vertical propaganda that are temporal in that they manipulate the past. Reality Changes literally alter the time line, while revisionism does so figuratively. Brainwashing, in the ‘mystical’ form that was feared in the 1950s, also connotes the erasure of the subject’s past in order to control in the present. All of these examples of propaganda also involve the creation of ‘automata’. As such they
involve the spectre of manipulative ‘puppet masters’ who exert control in the present, via hidden integrative methods focused on the past. Vertical integration propaganda such as the civil defence program can be an effective mode of alleviation. However, its allegorical representation in The End of Eternity highlights its limitations. In the novel Harlan rejects the Eternals’ form of vertical integration propaganda. He ultimately destroys Eternity after refusing the Eternals’ methods and the sense of manipulation it creates. However, the civil defence program did not fail. It was also ‘directed’ from above and designed by authority, but its central focus had much in common with ‘horizontal’ propaganda. The program used many societal elements to propagate its message, and ultimately guided families and individuals to take control of their own safety. This focus on individual agency provided a counter to the manipulative connotations of much propaganda. Horizontal propaganda is a more failsafe form of integrating a population, and thus a more successful mode of alleviation. It is also reproduced in The End of Eternity in a way that further elucidates the allegorical mode of time travel fiction, while highlighting the temporality of effective propaganda. As I will illustrate, the success of the civil defence program mirrors Noïs’ successful propagandising of Harlan. She represents a shift from ‘vertical’ to ‘horizontal’ propaganda, and this change corresponds to a shift in the narrative universe’s model of time. It is this revelation of the ‘true’ nature of time in the world of the narrative resembles a ‘branching’ model. This revelation accompanies, and is

‘Branching time’ and propaganda of choice

In The End of Eternity, it is revealed that the true nature of time in the world of the narrative resembles a ‘branching’ model. This revelation accompanies, and is
entwined with, an example of time travel offering an analogy for a successful example of integration propaganda. The process of persuasion undertaken by Noûs late in the novel is integrative, yet it allows the subject, Harlan, to retain his agency. Such time travel is representative of a ‘horizontal’ model of propaganda. As I shall illustrate, time travel that resembles horizontal propaganda contrasts with the ‘destructive’ change-the-past type, which, as I have demonstrated, has the same connotations of manipulation and control that often accompany vertical propaganda. In the concluding stages of Asimov’s novel, the protagonist Harlan is convinced to accept a new ideological model, while retaining his personal agency. This persuasion depends on a form of time travel that reproduces the process and effect of horizontal integration propaganda. The comparison between this type of time travel and horizontal integration propaganda is important because, as I discussed in the last section, it highlights the temporal aspect of this mode of alleviation. I showed that the parallels between ‘change the past’ time travel and vertical, revisionist propaganda represented a virtual erasure of the past. This occurred in a way that denied agency to those upon whom the propaganda was enacted. As I will illustrate, horizontal integration propaganda follows a process that is analogous to time travel in a branching universe. The temporal aspect of this persuasive practice is centred on individual choice. Horizontal integration propaganda aims to collapse rival ideologies by having the subject choose the vision desired by the propagandist. The ultimate goal of integration propaganda is to see the population unified and their fears mollified. The horizontal form achieves this in a way that maintains said population’s personal, individual sense of agency. Concurrently, the changing of the past in a branching universe involves a time traveller choosing, with every action, the branch of time that they will experience. All other possible branches that they may have experienced collapse, leaving a unified version of reality. Before detailing this correlation further, it is first necessary to describe what I mean by ‘branching’ time.

‘Branching’ time narratives are a prominent sub-type of time travel stories that I have not yet discussed in detail in this thesis. As such I will briefly outline the model, its history, and its importance to the time travel genre. It is important to clearly elucidate the model at this point, since it marks a significant divergence from the time travel models I have examined so far. This divergence is central to
branching time’s role as an allegorical reproduction of horizontal integration propaganda, which in turn highlights the temporalities of this persuasive form. The first chapter of this thesis focused on cyclical apocalypse stories, and the second on causal loop time travel. While not universally accurate, most of the stories examined either explicitly presented or hinted at a ‘block universe’ model of time. Such a model, a scientifically plausible consequence of Minkowski’s description of space-time\(^{113}\), can be considered ultimately deterministic, and attempts to ‘change the past’ in such a universe will prove futile. This ‘unchangeable’ model of time stands in contrast to stories wherein the past is mutable. The Eternals in *The End of Eternity* believe that the past is completely changeable and rewriteable (yet, as Harlan discovers, and I will examine shortly, they are mistaken). As I have just outlined, such a destructive representation of changing the past, where any change destroys an entire timeline, can be read as an allegory of historical revisionism and brainwashing, ‘destructive’ forms of manipulation. Branching time is the third primary type of ‘change-the-past’ time travel model\(^{114}\). Block universe time travel seems to deny free will, and in contrast a mutable past provides the time traveller with the power to destroy the universe. At a glance, branching time seems to present a synthesis of the two. It both provides the power the change the past, coupled with a sense of existential hopelessness. If, for every choice you make, another branch exists in which you made the opposite choice, the pointlessness of ‘choice’ becomes a factor. However, branching time narratives such as *The End of Eternity* align the model with the opposite, with representations of enhanced individual agency. This apparent contradiction is central to the parallels between ‘branching’ time travel and horizontal integration propaganda. Before exploring this consequence of branching time further, I will outline the model via its first appearance in SF\(^{115}\), David R Daniels’ ‘The Branches of Time’ (1935).

Daniels’ time travel tale clearly describes a branching universe. In the story, time traveller James H. Bell describes his journey to the first-person narrator. Bell outlines his visits to various futures. In one of these, a single man

\(^{113}\) See chapter two of this thesis.

\(^{114}\) Fictional time travel has innumerable other variants, prompts, and consequences. See Nahin for an excellent taxonomy.

\(^{115}\) According to Nahin (203).
destroys the last remnants of humanity, and centuries later intelligent ants rule
the planet. Bell then travels back and stops the final massacre from occurring.
Once again he moves forward in time and finds a different future in which
humanity has survived and thrived. He also travels far into the past and prevents
the evolution of mammalian life on Earth. Bell recounts to the narrator the nature
of time that allows him to alter events without creating paradoxes: He recalls his
future companion’s explanation:

...this world, your world, the world of the ants, my world. They all exist in the absolute
time of the Cosmos, and the possibilities of what have been or what may be are
manifold, like tree branches—one moves along one limb and thinks it is the tree; but
when he proceeds to another, lo, it is all different. (Daniels 302)

In such a branching universe, all of the differing futures, the alternate ‘world lines’
that Bell visits, exist. Bell’s actions in the past do not erase the future, but merely
send him down a different path. As I shall demonstrate, even in this preliminary
narrative representation of branching time, the model’s connection to quantum
physics is apparent. It is this link that highlights why branching time is aligned
with an apathetic worldview; put simply, it raises the question of whether our
choices have any meaning, if all their possible outcomes exist in one or another of
time’s many branches.

The description of branching time presented by Daniels closely corresponds
to the ‘many-worlds interpretation’ of quantum physics (MWI). This is despite the
fact that the story predates Hugh Everett’s 1957\textsuperscript{116} proposal of MWI by 22 years.
While it has some detractors, MWI has gained mainstream acceptance in modern
physics. For its proponents, time is much like the branching structure depicted in
Daniels’ story: for every action, say a toss of a coin, all possible outcomes occur.
You may record ‘heads’ in your universe, but there actually exists another
universe parallel to yours in which the result was ‘tails’\textsuperscript{117}. The branching model
of time is a central theme in more recent philosophical debates regarding the
logical plausibility of time travel. Daniels’ story clearly explains how the model

\textsuperscript{116} While Everett’s proposal stemmed from modern physics, the ‘possible worlds theory’ has been
around since at least the seventeenth century and the writings of mathematician and philosopher
Gottfried Leibniz.

\textsuperscript{117} See The Fabric of Reality by David Deutsch (1998) for a discussion of MWI with minimal
mathematics.
“takes away certain of the paradoxes that have baffled imaginative people” (303) 118. It is this ability to avoid paradox that makes the branching time model an important sub-type of time travel fiction119. The purpose of outlining the connection between branching time fiction and MWI is a result of to the theory’s connotations for individual agency. Many theorists, including Bell and DeWitt, oppose MWI because of its destructive implications for the nature of the individuality. In stark contrast, time travel fiction that uses branching time, a narrative representation of the theory, often depicts a heightened sense of personal agency for its protagonists. This is because of the fictional accounts, such as ‘The Branches of Time’ and The End of Eternity, focussing on the subjective creation of new time lines via individual choice. It is this positive, anxiety-reducing altered perspective that is central to viewing this form of time travel fiction as allegorical to horizontal integration propaganda.

An initial assessment of branching time and the associated MWI suggests that it should be a source of anxiety, rather than a representation of heightened agency. The infinite ‘alternate worlds’ that scientists insist are created at each moment are believed to be very real. As Everett himself wrote in a footnote to his original thesis describing MWI, “From the viewpoint of the theory all elements of

118 Despite this story’s publication in 1935, philosophical papers appearing as recently as 1999 were still grappling with the logical conundrums that this model of time travel resolves. Early philosophical papers on time travel’s possibilities spent a lot of time navigating relativity, world lines, and the distinction between personal and external time (see, for example, Putnam [1962]). They had not, at that stage, begun to explore the consequence of MWI for resolving time travel paradoxes. Gardner (1979) and Deutsch (1991) both take this step, yet paradoxes that MWI resolve still formed the basis against the logical possibility of time travel as recently as 1999 (Grey). In 2001 Richmond again used many worlds to explain time travel paradox:

“...the existence of many-worlds might preserve the determinateness of the past and human uncertainty about future action. This theory would permit the alteration of the time-traveller’s local version of history, while preserving symmetry at a higher level. The sum total of worlds does not change but your location therein can. Thus, the sanctity of the past is not threatened, and uncertainty transfers to which branch you inhabit. Many-worlds might save the otherwise inconsistent time-traveller from enacting paradoxes” (315).

Richmond concludes with notion that “Perhaps time-travel creates the destination-world, so there are as many worlds as there are time-journey” (317). While he makes a good point, he and other philosophers of time were over fifty years late to the party. These same paradoxes were addressed and resolved in Daniels’ story in the 1930s, and were discussed at length by SF fans in fanzines such as Paradox (see issue 4).

119 Another key feature of branching time is that it not only makes for time travel narratives; it overlaps significantly with the ‘parallel universe’ subgenre119. However, my focus in this chapter is on time travel. Parallel universe tales do not necessarily involve time travel, and as such I will not be addressing this subgenre at this time. My argument is that ‘change-the-past’ time travel fiction can be interpreted as allegory for propaganda of conformity, and as such this chapter will only examine stories that involve explicit accounts of movement through time.
a superposition (all “branches”) are “actual,” none any more “real” than the rest (459-60). This notion, that our universe is simply one of infinite others, each as ‘real’ as the next, should be quite damaging to the notions of a stable ‘self’ and free will. The argument follows that there is no point in making any difficult decision if there exists another universe wherein the opposite decision is made. Similarly, the notion of ‘self’ is problematised, given the “real” existence of infinite alternate versions of yourself: individuals who chose different paths than the person you are now. If said choice was a moral one, what does it say about you if the ‘wrong’ choice was made in a neighbouring universe? Does such potential for ‘evil’ reside in you also? Such angst-laden questions have led some, such as J.S. Bell, to dismiss Everett’s interpretation, and others to highlight its problematic connotations for individuality and agency. Bell writes in ‘Quantum Mechanics for Cosmologists’ that “if such a theory were taken seriously it would hardly be possible to take anything else seriously” (136). While he does not dismiss the model, the shock of confronting the notion of multiple ‘selves’ is described by DeWitt in ‘Quantum Mechanics and Reality’ (1970):

I still recall vividly the shock I experienced on first encountering this multiworld concept. The idea of $10^{100} +$ slightly imperfect copies of oneself all constantly splitting into further copies, which ultimately become unrecognizable, is not easy to reconcile with commonsense. (161)

Similarly, in his discussion of the philosophical implications of many-worlds time travel, Alasdair Richmond presents the hopelessness that seems to be implicit in such a model: “If there are many worlds, the mission seems pointless—either the enemy fails in this world or succeeds in another one” (Richmond 315). However, such negative assessments of MWI are not the only interpretations. From a subjective perspective every choice provides a significant amount of agency for the occupants of a branching universe.

A branching model of time allows individuals to retain identity and agency, if their situation is considered subjectively. This notion is particularly prominent in the case of fictional time travellers, who are able to experience different branches of time. Critic Alasdair Richmond makes this point in his article ‘Time-Travel Fictions and Philosophy’ (2001). He states that while nothing can be done to “relieve a residual unease about the worlds where your attempts fail and make
matters worse”, successfully changing the past in a branching universe “is more a matter of improving the lot of the time-traveller and not humanity at large; less like saving the world and more like moving to a nicer neighborhood” (Richmond 316). This assessment focuses on the perspective of the time traveller, and points to the self-enhancing aspect of making changes within a branching universe. Such enhancement can come at the expense of any concrete greater good; the fate of the ‘world’ is not an issue, as it will live and die in infinite branches. The central focus remains on the personal comfort, and thus the agency, of the time traveller. However I would argue that the ability to personally ‘improve their lot’ is an understated description of the branching time traveller’s access to personal agency. As seen in ‘The Branches of Time’, making such changes provides the subject with a sense of divine power:

“...You see, I changed the world.” Bell spoke as nonchalantly as a god. “... I was in a world of no-humans, I saw the moon fall ... but I went back and changed it, and all history turned out another way” (Daniels 300, emphasis in original)

The emphasis on the personal ‘I’, and his ‘godlike’ tone, marks Bell as the ‘creator’ of the branches he visits. His ‘power’ is implied to stretch to the destruction of humanity, and even restoring the moon to its rightful place. From Bell’s perspective all alternative ‘branches’ are voided when he creates a new one during his travels. They still ‘exist’, but they do not matter as long as his current branch is a ‘nicer neighbourhood’. It is this sense of enhanced personal willpower, and the figurative ‘collapse’ of alternative time lines, that marks changing the past in a branching universe as an allegorical representation of horizontal integration propaganda. As I will illustrate, making a personal choice in a branching universe creates unity in the face of infinite possibility: it gives an individual the power to ‘create’ a single universe by relegating all alternatives to the realm of possibility. An analogous sense of agency is the goal of integration propaganda. The subject is guided to reject all rival ideologies, to effectively ‘choose’ to be unified within the propagandists’ desired world view. This parallel, I will argue, highlights the temporality of horizontal integration propaganda. Unlike revisionism or

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120 An extreme example of this ‘self-focussed’ style of time travel is David Gerrold’s The Man Who Folded Himself (1972), which presents a highly solipsistic assessment of time travel in a branching universe.
brainwashing it does not aim to reduce anxiety by figuratively ‘changing’ the past, but to assuage via the individual’s choice to reject alternative ‘presents’.

Horizontal propaganda’s ability to reduce anxiety by integrating a population without denying agency can be likened to the ‘collapse’ of alternate time branches as presented in time travel fiction. Just as a time traveller’s actions decide which of the infinite parallel universes she will experience, horizontal propaganda provides a sense of choice that dismisses all rival ideologies. Integration propaganda works to discredit or collapse all alternate interpretations of the world, with the aim of creating a society unified as a ‘whole’ under a single ideology. The World Wars of the twentieth century were a result of multiple, incompatible ideologies vying for credibility, but victory in war did not immediately signal ideological victory (Balfour 426). Along with the anxiety that such crises prompt in a society’s individuals, the advent of the technological age following the Second World War added to a growing sense of discontinuity and a loss of meaning. As Ellul notes, in the initial Cold War years the “individual (was) not equipped to face” the increased pace of life, “the lack of personal accomplishment, the absence of an apparent meaning in life, … (and) the anonymity of the individual in the big cities and at work” (143). These “disturbing, paralyzing, traumatic influences” can be likened to the loss of identity embedded in DeWitt’s description of MWI (Ellul 143). However, in ‘The Branches of Time’, time travel places the focus on the individual’s influence on a universe marked by the same ‘absence of an apparent meaning in life’ as that described by Ellul. Horizontal integration propaganda works in a similar way. In a definition that foregrounds integration propaganda’s role as a mode of alleviation, Ellul states that it can “artificially soothe [the individual’s] discomforts, reduce his tensions, and place him in some human context” (143). It achieves this by integrating the anonymous, affectless individual into a society by providing a sense of choice that collapses alternate ideologies. The process that Ellul describes involves a reconstitution of the self and the individual will, with all duelling ideologies and interpretations removed. This leaves one dominant world-view that is presented as undeniably correct. ‘Modern man’ is “reassured by” this type of propaganda, according to Ellul (143), and thus experiences reduced anxiety. Similarly, Bell in ‘The Branches of Time’ is uplifted and centred when he chooses a ‘branch’, so
much so that he is imbued with ‘godlike’ agency. This analogous relationship between branching time travel and horizontal integration propaganda is particularly prominent in The End of Eternity. This relationship clearly illustrates the temporality of this persuasive form. It controls in the present not by erasing the past, but by collapsing its rivals through individual choice.

The final chapters of The End of Eternity reinforce the notion that time travel in a branching universe follows a process analogous to that of horizontal integration propaganda. The novel uses a branching model of time to allow its protagonist to be integrated into a unified ‘present’ while enhancing his sense of free will. As I discussed in chapter 4, Noës convinces Harlan to prevent the creation of Eternity and to allow nuclear technology to develop. The Eternals fail to convince Harlan to preserve their ideological dominance, yet Noës is successful in her attempts to persuade through her use of horizontal, rather than vertical propaganda. Horizontal propaganda, as described by Ellul, has a strong correlation with what Jowett terms ‘persuasion’. The key difference between vertical propaganda and persuasion is choice. As Jowett explains, propaganda can be described as “the deliberate, systematic attempt to shape perceptions, manipulate cognitions, and direct behavior to achieve a response that furthers the desired intent of the propagandist” (7, emphasis in original). This definition holds for both the vertical subcategory of propaganda, and the Eternals’ Reality Changes. It also indicates a unidirectional process. The propagandist controls and directs the perceptions and actions of their audience, just as the Eternals mould humanity to fit their ideological designs. Persuasion, on the other hand, is a two-way process in which both parties have their needs met. Jowett, who describes propaganda as “a subcategory of persuasion”, defines the parent concept as “an interactive (process) in which the recipient foresees the fulfilment of a personal or societal need or desire if the persuasive purpose is adopted” (7, 32). This assessment by Jowett is useful because it highlights the individual. Not only does the persuader get what she wants, but the subject feels a sense of personal accomplishment. Similarly, Ellul’s horizontal propaganda aims “to put the individual in a position where he

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121 It must be noted that the final model of time in The End of Eternity is not a pure branching time/MWI as I have described so far. I will outline the differences between the two shortly, but the important point is that time in The End of Eternity and MWI follow similar processes and have the same connotations for the denial or promotion of agency.
apparently has a freedom of choice and still obtain from him what one expects” (82). These definitions accurately describe the final interaction between Noÿs and Harlan.

A horizontal, two-way persuasive process is central to Noÿs’ successful attempt to convince Harlan to destroy Eternity. Having discovered her plan for destruction, Harlan is faced with a choice. He holds a blaster to Noÿs, with an initial “intention to kill” her (Asimov Eternity 180). However Noÿs’ flawless explanation of her motives, which includes both the chance to ‘intensify’ or improve “the Basic State (of the universe)” and a lifetime of happiness in love for herself and Harlan, convince him otherwise (188). Noÿs achieves her goal, “the final end of Eternity” and at the same time Harlan sees fulfilled his “personal ... need or desire” for the love of Noÿs (Asimov Eternity 189; Jowett and O'Donnell 32). Despite the prominent persuasive efforts of Noÿs, Harlan retains agency throughout their exchange. It is he who holds the blaster and retains the power to “make the decision” that will destroy Eternity (Asimov Eternity 189). This shift from ‘manipulation’ and ‘control’ to ‘choice’ and ‘agency’ represents the positive, willing acceptance of an alternate ideology. As Ellul states, horizontal propaganda is “much more effective and binding than ... vertical propaganda”, and that is the case here (82). Noÿs’ horizontal propaganda is effective and positive because of the sense of choice and agency that it provides for Harlan. The contentment he seems to experience at this decision, with Noÿs moving “slowly into his arms” is in contrast with Harlan’s anger at feeling manipulated into action (Asimov Eternity 189):

‘...As long as I acted on my own, for reasons of my own, I’ll take all the consequences, material and spiritual. But to be fooled into it, to be tricked into it, by people handling and manipulating my emotions as though I were a Computaplex on which it was only necessary to insert the properly perforated foils—’

Harlan realized suddenly that he was shouting and stopped abruptly. (177)

This point, that Harlan is angered when manipulated and content when he receives a reward for his compliance, is more involved than it may seem. What is most important is the sense of determinism and manipulation that Harlan experienced here. He likens himself to a programmed computer, and this analogy is associated in the text with the Eternals’ vertically imposed Reality Changes, a
‘destructive’ change-the-past model of time. This reinforces the allegorical mode of the Eternals’ time travelling, and its highlighting of the ‘manipulative’ nature of vertical propaganda. In contrast, Noës’ persuasive horizontal propaganda is accompanied by a sense of agency and ease of acceptance. This contrast results from the branching model that she describes, which serves a similarly allegorical purpose to the Eternals’ Reality Changes.

Noës’ description of the ‘true’ nature of time in Asimov’s novel compounds the parallels between her efforts to convince Harlan and horizontal integration propaganda. It also reveals another aspect of the novel’s use of time travel’s allegorical mode. While the Eternals believe that their Reality Changes erase and re-write time, Noës reveals a different model:

You smile at the ignorance of the Timers who know only one Reality. We smile at the ignorance of the Eternals who think there are many Realities but that only one exists at a time ... We don’t calculate alternate Realities. We view them. We see themin their state of non-Reality ... A kind of ghostly never-never land where the might-have-beens play with the ifs ... The number of Realities is infinite. The number of any sub-class of Realities is also infinite. ... the number of Realities in which I was the agent in destroying Eternity was also infinite (Asimov Eternity 185)

What is presented here does not completely correspond to MWI, but there are core similarities. Most importantly, there are infinite realities that ‘exist’ in both models. However, where Everett’s model states that each parallel branch of time is just as “real” as the next, in Asimov’s universe the branches of time exist in a state of “non-Reality”, and remain spectral potentials rather than actualities. Unlike the Eternals’ view of time, in which one reality is destroyed and replaced with another, Noës’ people passively view all times and choose the one that best suits their purposes. Therefore changes to reality for both parties metaphorically ‘integrate’ in a propagandistic manner by collapsing or destroying all other possible worldviews and leaving one solely dominant. However this also means that Noës’ model of time makes this process both natural and centred around individual choice, much like horizontal propaganda. Rather than the ‘calculated’, mechanised, vertical process adopted by the Eternals, Noës’ people use a natural process of ‘viewing’ and choice. In this case she is able tell Harlan of all the possible futures to come: “the recipient [literally] foresees the fulfilment of a personal or societal need or desire” created by his choice (Jowett and O’Donnell
As a result, Noûys is able to alleviate Harlan’s fears and integrate him into her preferred ideology. This allegorical representation of successful propaganda is dependant on the model of time that Noûys describes, which highlights a key temporality of horizontal integration propaganda. Rather than connotations of manipulation, such propaganda is dominated by a sense of choice.

Choice is the key difference between these models of time, and thus a key temporality of horizontal integration propaganda. While the Eternals’ interpretation of time is shown to be false, from their perspective their Reality Changes amount to replacing an existing ‘truth’ with one that is artificially designed and constructed, and forced upon a population. Such an image, as I have argued, mirrors the common pejorative perception of propaganda. In contrast, altering reality for Noûys involves a choice that decides among a set of pre-existing realities, a more natural and acceptable form of aligning oneself with a particular worldview. Despite the manipulations inherent in Noûys’ process of persuasion, of her viewing of the past and machinations in steering Harlan towards his decision, free will and choice are still dominant. As she explains, the true nature of time involves an infinite subclass of each of the infinite realities: “[no] matter how finely we focus on a given Reality it always represents an infinite number of very similar Realities” (Asimov Eternity 186). This means that at any moment, an individual’s free will allows for variation; it is a world of macro-stability and micro-variation. It is such an anomaly that leaves Noûys ignorant of Harlan’s ultimate decision, “a chance variation. ... it ended with a blaster between us.... And now, Andrew, that’s the story. You may blast me. There is nothing to stop you” (187). Despite all plans the infinite micro variations of time, something absent from the Eternals’ model leaves Harlan in control of his decision. His choice can destroy the ideological dominance of the Eternals and create a new reality, relegating all alternate timelines to the “ghostly never-never land” (185). The prominence of individual choice involved in this reality change is also evident in its change from a physical to a mental process. No longer is Harlan looking in from the outside, from Eternity, as the timeline changes, and no longer is the prompt for the change a physical manipulation within time, such as changing a jar from one shelf to another. In this final alteration to reality, Harlan simply makes a mental decision, one that he “wasn’t even aware that he had made” until it
manifested around him (189). Again, this change from a physical, external process to one that is internal and tied to the expression of individual will heightens the connection between the final reality change and horizontal propaganda: the Eternals’ model is less personal—calculated and vertical—while Harlan’s decision to abolish Eternity comes from within, and is seemingly a product of his own choice. Such ‘choice’ in a branching universe is particularly connected to the alteration of time’s precepts, and thus my use of the term ‘temporality’, as it involves the creation of an entirely new future. Just like horizontal propaganda, this ‘choice’ by Harlan is also more effective and binding than the vertical propaganda of the Eternals. As such, the novel’s allegorical mode, its depiction of time travel, highlights the key temporal elements of successful propaganda. This mode of alleviation is more effective when it allows an individual to choose their future, rather than manipulating their past. It is this temporality of horizontal integration propaganda, choice, that was the key to the success of the US’s civil defence program during the Cold War.

The civil defence program was an example of fear-reducing horizontal integration propaganda, a prominent mode of alleviation contemporaneous with The End of Eternity’s composition. Like Noës’ persuasion of Harlan, the program put choice regarding the future in the hands of individuals. A prominent aspect of the program was the need to convince citizens that their choices could shape reality and satisfy a ‘personal and societal need’:

The success of this [program] required the American public to identify the ultimate Soviet weapon not as the atomic bomb, but rather as their own emotional instability and weakness. Therefore, the ultimate obstacle to the American victory over Communism lay within the soul of the individual American citizen. (Oakes and Grossman 383)

By shifting the focus of the communist threat from the bomb to the emotions of each citizen, the civil defence program placed emphasis on those citizens’ abilities to affect the outcome of the Cold War. Since individual ‘emotional instability and weakness’ could cost the US victory, overcoming said weakness was an active step that everyone could take to help claim victory. The public was given firm directions regarding specific actions and choices that they could make to ensure a positive outcome; they were told “that the cure for the contagion of panic is civil
defense. Only by participating in civil defense training is it possible to control the irrational fears that produce panic" (Oakes and Grossman 384). This final step in the civil defence initiative involved acceptance of the worldview of the propagandist: the nuclear deterrence policy and its muted view of nuclear danger needed to be accepted. Similarly, in making his choice Harlan needed to accept Noûys’ explanations as truth. He also needed to accept that the nuclear future that his actions would create was worth the risks. In both cases, firm steps were provided as to how individuals could ‘collapse’ opposing ideologies via their own actions. For Harlan such a collapse came from his decision whether to shoot Noûys or not—his choice erases Eternity from existence leaving a unified timeline. A direct comparison can be made between Harlan’s ‘collapse’ of alternate timelines and civil defence propaganda. In the 1950s, the Federal Civil Defense Administration provided booklets to inform householders “what to expect, how to prepare, and how to act in a nuclear crisis” (Oakes and Grossman 387). These actions included “practising drills at home, building a home shelter, taking a first-aid course, learning “fireproof housekeeping,” storing food, water, and emergency supplies” (387). The thrust of the program, therefore, was fostering the notion that the primary problem was ‘your’ propensity for panic. As such, ‘you’ can win or lose the battle depending on how you choose to respond. One path would involve remaining scared, questioning the deterrence policy, and therefore retaining a conflicted ideological outlook. On the other hand choosing to train, prepare, and act would effectively ‘collapse’ such possibilities and leave one worldview corresponding to American foreign policy. As such, citizens were invested with the belief that they could personally alter the outcome of any coming war. The effect that such propaganda aims to create is essentially the same as Bell’s god-like affirmation in ‘The Branches of Time’, and Harlan’s ‘choice’ in The End of Eternity. It focuses on providing a sense of agency, and the notion that this choice will directly lead to the creation of a new, unified, and desired future: a key temporality of horizontal integration propaganda.

Harlan’s choice, and the changes to time that it involves, is an allegorical reproduction of the effect of civil defence propaganda. Time travel in the novel allegorises the process of integration, which is both temporal and designed to alleviate fear, making it a ‘mode of alleviation’. The temporality of this type of
propaganda makes it comforting. The Eternals’ ‘vertical’ propaganda, their calculated changes, ripple out and dissolve over time, becoming “too small to detect by the finest Computing” (Asimov *Eternity* 59). They also create distinct anxiety in both Harlan and Noys. In contrast, Harlan’s internal decision, having been moulded by horizontal propaganda, leads to a grand future: a “Galactic Empire. An actual intensification of the Basic State” of the universe (188). Thus, the combination of both choice and a desirable future is central to Noys’ successful attempt to persuade Harlan. The old ideology of the Eternals collapses, signified by the disappearing Kettle, and Harlan is ‘integrated’ and accepts a new worldview. While ‘manipulated’ through Noys’ “choice” of reality, he retains his agency. Similarly, civil defence propaganda promoted the notion that it was the ‘choice’ of each American citizen—to not panic and maintain vigilance—that was the key to victory in the Cold War. All alternatives, such as the reality presented in the October 27, 1951 issue of *Colliers*, were to collapse when one chose civil defence. This issue was entirely dedicated to “a fictional account of World War III”. The editors stressed that “the real purpose of the issue was to show how the United States could fight and win a war waged with nuclear weapons” (Oakes and Grossman 381). It clearly promoted that message that in the case of nuclear war:

...catastrophic levels of destruction (would be) largely due to public indifference to civil defense. (In the fictional account) Inadequacies of federal civil defense planning are not held responsible for this failure, but rather the apathy of the American people, who had not bothered to learn that “civil defense involves the active instantaneous participation of every able-bodied man, woman, and child.” (381)

Here, and reproduced in Asimov’s text, the onus is on citizens to avoid such a disaster. They do so by embracing dominant ideology, making a ‘choice’ that dissolves all opposition, just as Harlan’s mental choice dissolves the kettle representing Eternity and its anti-nuclear agenda. The changes to reality in this branching universe signify the temporality of horizontal propaganda of persuasion: it integrates by collapsing duelling, incompatible realities. It does so within an apparently natural process, while allowing the individual a dominant sense of free will.

*The End of Eternity* features two diegetic representations of integration propaganda. The manipulation of time in the story imitates key features of the
persuasive techniques that were prominent at the time of its publication. The Eternals’ Reality Changes analogise a vertical form of propaganda. This analogy suggests that vertical integration propaganda has a prominent temporal aspect. It represents an attempt to control in the present by altering and manipulating the past, one that denies the subject any sense of control. Conversely, the novel also contains a representation of horizontal propaganda. Noys is able to successfully integrate Harlan using techniques that allow him to retain his personal agency. This form of propaganda is also highly temporal. Its representation via time travel’s allegorical mode suggests that this form of persuasion controls in the present by ‘collapsing’ alternative versions of the present. These alternate versions represent the opposing ideologies that similarly ‘collapse’ when integration propaganda is successfully used. Both time travel in the novel and the horizontal persuasive method achieve this unification via the provision of individual choice. However, The End of Eternity also functions as a non-diegetic form of integration propaganda. It plays a socio-political role that reflects debate regarding the US’s nuclear trajectory that surrounded its composition. Along with civil defence propaganda, which aimed to influence the population in regard to the Government’s nuclear deterrence policy, propaganda was also required to justify the bombing of Hiroshima and concurrent anti-scientific sentiment. This time-centred concern relating to the development of the bomb involved the question of whether the right choices were made in developing the bomb at all. Time travel fiction allegorises such questions by depicting alternate timelines in which the bomb was not developed and used. Variable timeline stories such as ‘Demotion’ (1953) and ‘Two Dooms’ (1958) present as most positive timelines in which nuclear technology was developed. As such, they provide firm propagandistic messages: developing the bomb was the right option. However, The End of Eternity goes further and presents the message that the ‘real world’ timeline of the reader is the best of all possible alternatives. Therefore, along with allegorising modes of alleviation such as propaganda, and in turn revealing its temporal nature, time travel fiction itself served a propagandistic purpose. The End of Eternity is an example of socio-political propaganda, one that uses time travel as an attempt to counter the nuclear fear that was dominant at the time of its production.
Modes of alleviation: the present as ‘euchronia’

Up to this point in this chapter, I have focused on the role of time travel fiction in allegorising the process of propaganda. Whether spontaneous or planned, the reproductions of propaganda in *The End of Eternity* highlight the temporalities of this particular mode of alleviation. In this final section, my focus shifts to Asimov’s novel itself, and I claim that the text is a clear example of propaganda. The notion that time travel fiction serves as propaganda is not overly surprising. As I noted in chapter 4, there is a highly prominent socio-political element to utopian and dystopian SF. Also, propaganda scholars such as Ellul point out that popular fiction can play such a role; integration propaganda is “not exclusively political”, and “can also be made by a group of organizations other than those of government, going in the same direction, more or less spontaneously” (75). It can manifest in numerous social channels, including “the mass media of communication” (76). In fact, according to Althusser (as well as Ellul and Brett Silverstein) (most) literature produced within a particular social system acts to reinforce state ideology; it is an example of an ‘ideological state apparatus’ (136-7).

In terms of civil defence propaganda, the primary example used in this chapter, publications such as “Time, Life, Newsweek, and … Collier’s” played an integrative, propagandistic role; they helped the public to accept the bomb’s history and a present that involved nuclear deterrence as a foreign policy cornerstone (Oakes and Grossman 371). These publications aimed to temper nuclear fears and to justify past and present policy decisions. It seems that propaganda was everywhere, and that the nuclear age was therefore saturated with literary examples of the persuasive technique. Yet, the role of time travel fiction in performing this function has not been acknowledged; the notion that time travel fiction, and in particular *The End of Eternity*, had utility as nuclear-age integration propaganda has not been proposed. In making this connection, I further highlight the allegorical role played by depictions of time in the subgenre,

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122 It is propaganda that reflects his Futurian vision, as outlined in the previous chapter.

123 The propagandistic function of time travel fiction I describe in this section is not limited to *The End of Eternity*. Similarly political, pro-nuclear messages are evident in the contemporary stories ‘Demotion’ (1953) by Robert Donald Locke, and Kornbluth’s ‘Two Dooms’ (1958). This function of the subgenre also resurfaced in the 1980s in stories such as *The Proteus Operation* (1985).
and in this case its use to project an assuaging, propagandistic message about the benefits of nuclear technology.

A major question that lingered as the Cold War unfolded was whether Hiroshima was justified or necessary. A public backlash began to emerge, against atomic scientists and the use of the bomb. For example, in 1948 a prominent moralist, Milton Mayer, wrote in Fellowship magazine that Albert Einstein and Harold Urey were “a pair of unlovely characters indeed, with whom I do not hope, ever, to shake hands, since their hands, in the words of Isaiah, are full of blood” (cited in Boyer 232). Such critiques were not limited to the religious sector. Secular journalist and critic Dwight Macdonald “scornfully dismissed the official rationalizations being advanced for the decision to drop the bomb and the soothing predictions of a better world ahead” (Boyer 237). Successful propaganda justifies such rationalisations confidently and firmly. It provides the assurance that allows a society to cope with the anxieties surrounding its ‘big questions’. As Ellul contends:

Propaganda attaches itself to man and forces him to play its game because of his overpowering need to be right and just. In every situation propaganda hands him the proof that he, personally, is in the right, that the action demanded of him is just, even if he has the dark, strong feeling that it is not. Propaganda appeases his tensions and resolves his conflicts. It offers facile, ready-made justifications, which are transmitted by society and easily believed. (158)

Thus, the alleviation provided by propaganda involves reassurance that past decisions were correct, and that a nation’s recent history is justified. In terms of integration propaganda, when ideological rivals collapse, the message that ‘our ideology is best’, and that everything is okay, is accepted. This is another example of propaganda as a temporal ‘mode of alleviation’: it reduces public concerns by justifying the past and lauding the present. It is this temporal aspect of propaganda, of this mode of alleviation that marks The End of Eternity as an example of the phenomenon. In the novel, the lauded present is the ‘real world’ of the Manhattan Project and Hiroshima. The contemporary reality of the reader is presented as not only a good alternative, but as the best of all possible realities: a consequence of fictional time travel that I call ‘euchronia’.
As I outlined in the previous section, *The End of Eternity* presents a model of time that involves infinite variations of reality, each existing as a potentiality. As I demonstrate shortly, the best of all of these realities is the one that comes about via nuclear technology. Presenting one variation of reality as superior to the others is a sub-type of time travel that I name euchronia, as opposed to ‘uchronia’, a term that is readily used in SF studies. Uchronia is derived from ‘utopia’, which itself stems from the Greek ‘ou’ (no) + ‘topos’ (place). While its meaning has obviously developed, the term is still etymologically linked to ‘nowhere’, which speaks to the imaginary, unattainable nature of utopia. Uchronia thus means ‘no time’. It is used to describe the parallel timelines of branching time and parallel universe stories. Here, ‘parallel’ implies ‘equal’, with no particular timeline inherently privileged above the others—hence ‘no time’ is an appropriate description of such fictional universes. An example of uchronia would be Paul Carter’s ‘Ounce of Prevention’ (1950). The story begins in ‘our’ timeline, then shows others after a time traveller removes nuclear power from history. All the worlds he visits seem equivalent: nuclear reality is proven to be much the same as non-nuclear realities. This use of time travel promotes what Lem calls the “‘ergodicity’ of history: monkeying with events which have had sad consequences does not bring about any improvement of history; instead of one group of disasters and wars there simply comes about another, in no way better set” (147). I’ve coined the term ‘euchronia’\(^\text{124}\), using the greek root ‘eu’—‘well’ or ‘good’—to describe stories that not only present parallel timelines, but privilege one of them as ‘better’ than all alternatives. In euchronic narratives one particular timeline, the one that serves as an analogue of the ‘real’ world of the reader, is lauded over all its infinite variants. As such, the final timeline in *The End of Eternity* is an example of euchronia. It is this form of time travel that creates the novel’s primary propagandistic message. Asimov’s novel answers the questions surrounding the US’s development and use of nuclear technology in a propagandistic manner.

\(^{124}\) When this chapter was originally written, I believed ‘euchronia’ to be a neologism. Since then, I’ve found the term used, in a different manner to my usage, in Manuel and Manuel’s *Utopian Thought in the Western World*: “We took the label uchronia, rashly altered its spelling to euchronia, good time, and applied it to a major departure in Western utopia and utopian thought that occurred when good place, good state of consciousness, and good constitution were all translated to a good future time” (4). While the term is not ‘new’, my use of it to describe a sub-type of time travel fiction remains apparently unique in SF studies.
The End of Eternity’s euchronic message regarding the ‘real’ world of the reader marks it as an example of integration propaganda. Time travel in a branching universe allows for the rationalisation of recent history by presenting alternative futures, presents, and past, and dismissing all of them as inferior to the ‘real’ world. The End of Eternity is the purest nuclear-age example of this use of the time travel narrative. In the novel, the ‘Basic State’ of the universe is one in which nuclear technology was first developed in the 30th century. The interference of the Eternals seemingly rewrites history numerous times to limit technological development, but in each of these altered realities human kind is doomed to extinction. The final changes to the timeline, undertaken by Harlan and Noys, involve sending a letter in 1932, which will prompt “a man of Italy (to) begin experimenting with the neutronic bombardment of uranium”—a reference to Fermi’s ground breaking work on nuclear energy (Asimov Eternity 187). With this creation of familiar history comes Hiroshima and the probability that “Earth will end with a largely radioactive crust” (188). However, the end result is humankind’s expansion throughout the galaxy. As such, the novel answers the question of whether the choice to develop nuclear technology in the novel’s contemporary ‘present’ was the ‘correct’ one, in an emphatic manner: it is an “intensification of the basic state of the universe”, or the best of all possible timelines. This euchronic message is external to the narrative, presenting the time in which it was produced as “right and just” (Ellul 158). By revealing late in the novel that the ‘real’ world is the most superior reality humanity could hope for, the novel aims to resolve ‘tensions’ and ‘conflicts’ regarding the choice to develop and use nuclear technology, marking it as an example of nuclear age integration propaganda. It reproduces the temporal process propaganda, and similarly provides comfort. Effective integration propaganda works to normalise a dominant ideology. It allows the subject to appear to choose their ‘present’, the ideology desired by the propagandist, and to be comforted knowing that it is ‘right and just’. Branching time SF literalises this process, and depicts the ‘choosing’ of one reality over all others. By making the chosen reality a representation of the ‘real’ world of the reader, and by presenting it as euchronic, Asimov’s novel has utility as nuclear age integration propaganda.

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125 This message is similar in many ways to Leibniz’ “best of all possible worlds”, used to describe our reality and to explain the existence of evil. See his Theodicy: Essays on the Goodness of God, the Freedom of Man and the Origin of Evil (1710) for more.
propaganda. Its message is an attempt to provide comfort and reassurance that Hiroshima and the nuclear uncertainty of its readers’ present was “right”. As such, the novel not only contains allegorical representations of modes of alleviation such as propaganda, but itself serves as an example of that process.

In this chapter I have argued that time travel fiction of the mid-twentieth century played a distinct socio-political role. It had utility as integration propaganda, and depicted alternate timelines that, by contrast, justified the ‘real world’ choices regarding the bomb and nuclear deterrence. While *The End of Eternity* has been my focus, the same propagandistic message is evident in other time travel stories from the period. These include Locke’s ‘Demotion’, Kornbluth’s ‘Two Dooms’, and ‘An Ounce of Prevention’ by Carter, which present the ‘real world’ as at worst ergodic and at best euchronic. Further analysis of this aspect of the subgenre could include these stories, and similar ‘past-directed’ tales from the 1980s, including James Hogan’s *The Proteus Operation*, Louise Lawrence’s ‘Extinction is Forever’ (1984), and *The 40-Minute War* (1984) by Janet and Chris Morris. Along with time travel fiction as ‘real world’ propaganda, I have also delineated parallels between its temporal structures and the temporalities of propaganda. I demonstrated that integration propaganda is a ‘mode of alleviation’ that is diegetically reproduced in *The End of Eternity*. Attempts by the novel’s characters to propagandise represent two sub-forms of integration propaganda: ‘horizontal’ and ‘vertical’. By demonstrating that two different forms of time travel allegorically represent these two processes, I highlighted the temporal limitations of propaganda. When ‘vertical’, as represented by ‘change the past’ time travel, propaganda is a mode of alleviation. Yet, its comforting function is limited by its manipulative connotations. Conversely, ‘horizontal’ propaganda is reproduced by the ‘branching time’ form of time travel, which assuages while prioritising the agency of the propagandee.

In the following chapter I continue the analytic method I have used here, of drawing connections between the temporal structure of a socio-historical phenomenon and fictional time travel devices. There, I argue that time travel fiction often follows the same temporal structure, with the same ‘comforting’ purpose, as traditional apocalyptic fiction: a person is ‘removed’ (the rapture) from a cataclysmic event (the tribulation), and deposited in another time that is marked
by hope and promise (the New Eden). This roughly describes the structure of the final time line of *The End of Eternity*, and as such, this text will again be used as an example. Since apocalypse is deeply temporal, and since its primary role is to provide a sense of purpose, temporal continuity and hope amidst crisis, it can be considered a mode of alleviation. Fictional depictions of time travel can be considered a reproduction of this comforting phenomenon, which again demonstrates that the subgenre played a distinct allegorical role in the mid-twentieth century. Rather than simply offering a ludic exploration of paradox, time travel devices allowed for the allegorical reproduction of contemporary fears, and of phenomena that served to alleviate those fears.
Chapter 6 – Time Travel Fiction and Nuclear Apocalypse: Creating Temporal Continuity

The early atomic age saw the secularisation of key aspects of the Christian apocalypse. A god-like power to destroy the world was discovered, and placed in the hands of humanity. Similarly, the scientists who made the discovery were held up, if not as gods themselves, then as emissaries of apparently divine knowledge. The ‘apocalypse’, or more accurately the destruction that it connotated, had become very real, and very secular. However, one thing was missing from this new secular apocalypse, the element that had made apocalypse appealing for centuries. The new nuclear ‘end’ was final: it involved the end of all life, of time itself, and thus lacked the ‘transcendent’ reward, which is central to many sectarian apocalyptic models. During this period many of these models, particularly those of fundamentalist Christians, incorporated the bomb into their myths. However, such apocalypses remained ‘modes of alleviation’ as they continued to promise worldly redemption, temporal continuity, and a grand ending. The secular apocalypse adhered to the scientific facts: the bomb potentially signalled the end of “human life ... and perhaps (all) life itself” (Oakes and Grossman 366). As such, it lacked the promises of transcendence, which have seen the Christian apocalypse remain pervasive over the centuries (Reeves). It is these missing temporal elements, the continuity for humanity into the future and its ultimately transcendent ending, that nuclear age time travel fiction reproduced, while maintaining the new apocalypse’s secular nature.

My argument in this chapter’s initial sections is an extension of the key points I made in chapter four: that ‘future-directed’ time travel fiction reproduces the ‘anticipation’ of nuclear age, thus creating a sense of ‘temporal continuity’ to counter nuclear fear. In chapter four I demonstrated that nuclear age texts used time travel for this allegorical purpose. Using The End of Eternity as a key example,

126 Further literalisation of the apocalyptic myth, that both preceded and extended beyond the onset of the nuclear age, is the association of Russia with the prophesised nation of Gog. Since the 1840s scholars have linked Russia to Gog, and in the late twentieth century this belief in the empirical existence of Gog entered the political arena (Williamson 306-307). Williamson quotes Ronald Regan, from 1971: “Ezekiel tells us that Gog, the nation that will lead all the other powers of darkness against Israel, will come out of the north. Biblical scholars have been saying for generations that Gog must be Russia. ... Now that Russia has set itself against God ... it fits the description of Gog perfectly.” (Williamson 307)
I argued that time travel fiction reproduced a promise of temporal continuity to counter nuclear fear, and particularly the fear of the end of time. However, in this chapter I extend that argument to demonstrate that, in Asimov’s novel, it is not just ‘continuity’ that is allegorised, but humanity’s transcendence following nuclear devastation. This, I will argue, is a secular, allegorical reproduction of the comfort-making elements of the traditional Christian apocalypse. Also reproduced in this text are other ‘secularised’ elements of the Christian apocalypse, including the ‘revelatory figure’ and the ‘Rapture’. These features combined reveal that *The End of Eternity* is a perfect example of time travel fiction, approximating the temporal structure of the traditional apocalyptic model. Along with other time travel fictions of the nuclear age such as *City at World’s End*, *The End of Eternity* represents a secular alternative to the comforting Christian apocalypse. Whereas the new secular ‘end’ was a source of much fear and anxiety, these texts symbolically ‘repair’ this new apocalypse by providing a secular depiction of a positive end.

In the final section of this chapter, I return to the temporalities examined in chapters one and two of this thesis to demonstrate another role of time travel’s allegorical mode. Apocalypse has two primary features that make it a ‘mode of alleviation’. Firstly, it creates comfort because it promises, despite worldwide destruction, a transcendent continuity for humanity. However, it also creates comfort by combining a deterministic ‘plan’, which provides a desired ‘end’, while retaining an individual’s sense of agency, which comes via perpetiea. This combination is central to Kermode’s analysis of apocalyptic fictions, and its role as a mode of alleviation. It is also, as I will illustrate, a comforting combination that ‘causal loop’ time travel allegorically reproduces. In earlier chapters I argued that causal loop time travel reproduces ‘determinism’, a temporality of crisis. However, the logical demands of this type of time travel require two separate perspectives of time: consideration of the fictional world’s ‘block universe’, which is an ‘external’ view of time, and the inhabitants of such a universe’s individual perspective of time’s passage—‘personal’ time. Causal loop texts need to depict both of these types of time, which I will argue are allegories for both apocalypse’s ‘deterministic paradigm’ and an individual’s experience of ‘perpetiea’. Texts such as Heinlein’s ‘By His Bootstraps’ and Damon Knight’s ‘The Last Word’ (1957) simulate the
coexistence of paradigm and perpetuation by allegorising the ability of free will and agency to coexist within a deterministic model. As such, this form of time travel reproduces another feature of apocalypse, one which Kermode claims is the key to its role as a source of comfort. Together, these allegorical modes of time travel fiction, their reproduction of apocalypse’s comforting elements, point to the subgenre’s sociological function. Nuclear age time travel deserves critical attention as a medium through which the period’s temporally laden fears, anxieties, and hopes were channelled.

**Apocalypse: a ‘mode of alleviation’**

‘Apocalypse’ is a broad term with numerous connotations. It can refer to a mythologised event, a literary genre, an allegorical ‘effect’ within literature, or it can be used as a colloquial term for destruction. Within theology, apocalypse has a rich, detailed history and many forms. As such, it is necessary to define my use of the term in this chapter. When I write ‘Christian’ or ‘traditional’ apocalypse, I am referring to the ‘Dispensationalist’ model. This is the favoured model of modern-day fundamentalist Christian groups, and it has been structurally consistent since Joachim de Fiore’s contributions to the myth in the twelfth century. Dispensationalism is a mix of ‘futurist premillennialism’ and ‘pretribulationism’, so in order to delineate the temporal structure of dispensationalism, it is first necessary to outline the features of its parent forms (Weber 17). As Weber outlines in *Living in the Shadow of the Second Coming* (1987), premillennialists expect Christ to return before the Millennium in order to establish it by his might, and the futurist sub-category believe that the ‘last days’ prophecies will be fulfilled shortly after Christ’s return (11). The ‘pretribulationist’ aspect, Weber notes, means that the Battle of Armageddon, the battle between good and evil that will usher in the Millennium, is yet to be fought (21). The general temporal structure of the dispensationalist model is as follows: Christ will return to rapture the faithful, and then do battle at Armageddon—a ‘tribulation’ that will destroy the world. Following evil’s defeat, Christ will reign over a restored Earth for 1,000 years (the Millennium) (17). Joining him in this reward will be the faithful who have been returned to Earth to enjoy its status as a New Eden. The rapture is a key
comforting element of this model, as it means that the faithful are enabled to ‘skip over’ the destruction of the planet. They are removed from the world and returned in the future when tribulation is over (11). This is one key connection between this model and time travel fiction, as the rapture can be considered a form of Christic time travel. As I demonstrate shortly, many other features of apocalypse find allegorical representation in nuclear age time travel fiction. The SF subgenre serves as a secular alternative to the assuaging Christian apocalypse, given that the new nuclear apocalypse lacked many of its comfort-making elements.

The new secular apocalypse of the nuclear age was the widespread belief in a potential nuclear ‘end’. It was a ‘scientific’ apocalypse stripped of the usual spiritual connotations, and it was part of a spectrum. At one extreme was the new, wholly empirical potential end. At the other was the Christian apocalypse. The bomb dominated this whole spectrum. It created the possibility for a secular end, as it represented the first time that the power to destroy the world was in the hands of humanity. On the other hand, nuclear weapons were also incorporated into the Christian apocalypse, ‘secularising’ its ‘end’ too. While the belief remained that the end times would be divinely directed, the bomb became the prognosticated instrument of destruction (Boyer 240). Such a process, of incorporating contemporary science into the Christian myth, has been commonplace since at least the seventeenth century. Miller explains that, following the discoveries of Copernicus and Kepler, it became necessary to scientifically explain Christian myths, including the apocalypse. The Sacred Theory of the Earth by Thomas Burnet (1681) attempted to do so, explaining the flood story as the Earth cracking and releasing water from within. The apocalypse, he claimed, was to be another ‘crack’ but with fire released instead of water (Miller 174-6). Burnet’s book was published six years before Newton revolutionised science with his Philosophiæ Naturalis Principia Mathematica (1687) and was widely ridiculed (Miller 178). However, Newton himself later tried to unify his own apocalyptic beliefs and science. He used mathematics to calculate a timetable for the apocalypse (he placed the end of days “no earlier” than the year 2060) (Bauer). In addition, William Whiston’s A New Theory of the Earth (1696) proposed comets as a scientifically acceptable potential prompt for apocalyptic destruction (Miller 181). The development of the atomic bomb allowed for a renewal of this
process: a 1950 lecture by historian Perry Miller described “the decline of apocalyptic thinking under the advance of science in the eighteenth and nineteenth centuries and its sudden and unexpected revival after 1945” (Boyer 240). Proponents of apocalyptic thought seized the bomb, much as Newton used mathematics, to try to rationalise and ‘confirm’ their beliefs. However, this renewal of an apocalypse that was ‘justifiable’ by science was accompanied by the spreading of secular apocalyptic rhetoric—and a belief in an imminent ‘end’—to non-religious segments of society. However, as I will demonstrate, the empirical end of the nuclear-age apocalyptic spectrum lacked the Christian promise of divine salvation, and was thus a source of fear rather than ‘comfort’.

The secularisation of features of the traditional apocalyptic model took many forms. Following Hiroshima, along with the ‘end of time’ becoming a mainstream belief, scientists were seemingly imbued with ‘godlike’ power. This secularisation of divine abilities was expressed in an editorial from Life magazine’s August 20, 1945 issue:

> The American Prometheus who had assumed Jove’s mantle and obliterated two cities with his newly discovered atomic thunderbolts was now being sternly told that he must resist the temptation ever again to play god. (cited in Boyer 10)

With atomic scientists here likened to both Prometheus and Jove, both the bomb and its creators are implied to have divine power. Such a figurative apotheosis of atomic scientists was famously pre-empted by Oppenheimer himself during the Trinity Test, an event that prompted ‘religious awe’ in those who witnessed it (Weart [1988] 101). Upon seeing the world’s first nuclear explosion, he reportedly said: “I am become Death, the shatterer of worlds” (Wyden 212). Again, we see here the appropriation of divinity by atomic scientists. While Oppenheimer’s quote, from the Upanishads, was an expression of awe regarding the power that he and his team had unleashed upon the world, it is also an appropriate example of the nuclear age process of secularising divinity. The Trinity Test was an empirical manifestation of power that was previously deemed to be the domain of myth, as implied in its name. Oppenheimer, a human scientist, is here figuratively taking that role and the power to ‘shatter worlds’ with divine “atomic thunderbolts” is thus secularised. Hendershot also traces the perception that divine power had been granted to scientists. She notes that Truman’s nationwide radio address on
the day after Nagasaki similarly implied that the bomb’s developers were God’s “chosen people”, and that “atomic physicists were routinely portrayed as mystics emerging from the New Mexico desert with divine knowledge” (Hendershot “Delusion” 10-11). The ascribing of this world-changing power scribed to humans, the process of bringing myth to the real world, recalls power of time travellers, as examined in the previous chapters. In The End of Eternity, the Reality Changes made by the Technician class to rewrite time are described as similarly ‘godlike’. Technicians are feared and shunned, and are directly associated with their society’s power to rewrite history and ‘shatter’ the world: a common expression in the novel is “‘(a) trillion personalities changed – just a Technician’s yawn’” (Asimov Eternity 32). Connoted here is a similar ‘secularisation’ of the divine, with a physical, empirical cause creating a seemingly mystical effect. Such ‘divine’ power entered the real world on July 16, 1945, and brought with it the empirical transformation of many aspects of the apocalyptic myth.

Not only were atomic scientists associated with previously sectarian ‘divine powers’, they also played the role of ‘prophets of doom’: a variation of the ‘revelatory figure’ from the Christian apocalypse. A being with divine foreknowledge is a key aspect of the apocalyptic myth; the term ‘apocalypse’ itself is from the Greek apokalyptein—’uncover’ or ‘reveal’. Atomic scientists took on an analogous role of ‘revelation’ in the years following Hiroshima. In 1946 an “immensely popular” book entitled One World or None was published, which was “a collection of essays written largely by atomic scientists advocating international control of nuclear science and technology” (Oakes and Grossman 368). In the book, Manhattan Project member Philip Morrison provided “an account of the probable effects of an atomic attack on New York City” (368). In the same volume, Project member Hans Bethe and fellow physicist Frederick Seitz predicted that the US “might suffer ... the fate of Hiroshima and Nagasaki within five years of V-J

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127 As mentioned in chapter four, 1950s SF film was far more critical of science and scientists, with its depiction of the mad scientist and atomic monsters (see Hendershot [Bomb] for more). In contrast most SF pulp magazines and novels presented a positive, if cautious, view of nuclear technology and science.

128 Another cute secular alternative in the novel is the exclamation “For Time’s sake” (151, 152)

129 This quote is also an example supporting my argument from chapter three: that the novel’s depiction of time travel is an allegorical reproduction of the nuclear age’s problematisation of the relationship between cause and effect. Like the bomb or the nuclear ‘button’, we have here a seemingly benign ‘cause’, a yawn, and a world-changing effect.
Day” (368). These prognostications of doom from a privileged source—the apotheosised nuclear scientists—mirror the process of divine revelation. Similarly, by 1945, many atomic scientists who had worked on the bomb had formed the Federation of Atomic Scientists, which became known pejoratively as the “League of Frightened Men” (372). The Federation warned of grand destruction, of a coming ‘nuclear Pearl Harbour’ (373). This is the same role played by mythical revelatory figures such as St John of Patmos, whose Revelation was forewarning of similarly specific, if highly cryptic, destruction. Peter Middleton and Tim Woods argue that the Eternals in The End of Eternity represent these scientists’ propensity for doom saying. They claim that Eternity’s failings are “a judgement on the effects of the bomb on the community of scientists at Los Alamos” (266). While this assessment aligns with my examination of the novel as propaganda in chapter 5, I argue shortly that it is Noÿs, and not the Eternals, who represents a secular analogue of apocalypse’s revelatory figure. The birth of the bomb made apocalyptic destruction an empirical possibility, and many associated its seemingly divine power with the atomic scientists themselves. However, the secularised aspect of apocalypse that is important to my argument in this chapter was the ‘mainstreaming’ of the belief in a coming ‘end’.

The new secular apocalypse of the nuclear age was marked by a devastating temporality that lacked the ‘comforting’ aspects of the sectarian model. The ‘end’ represented by the bomb’s destructive potential, as I argued in chapter four, connoted the final end of time. News reports from the time, says Boyer, spread the message that the bomb “could obliterate the entire planet”, and leave the “foundations of one’s own universe trembling” (5, 6). This new, secular belief in an apocalyptic end “pervaded all society, from nuclear physicists and government leaders to persons who barely grasped what had happened, but who

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130 I would argue that it is the technician class specifically that represents the Manhattan scientists’ post-war guilt. I have already argued that the novel’s Reality Changes represent nuclear explosions (see chapter three), and it is the Technicians who enact these changes. They also bear the brunt of their community’s scorn for the devastating effects of the Changes: they ‘must be the one to initiate the actual Reality Change. And then all the others would stare in haughty accusation at him. Their stares would say: You not we, have destroyed this beautiful thing” (Asimov Eternity 16). Harlan repeats some common taunts levelled at Technicians when he says: ‘They say, ’Cold as a Technician’s heart,’ don’t they? They say, ‘A trillion personalities changed —just a Technician’s yawn’ ” (32). Such taunts play on Harlan’s mind, which is perhaps representative of guilt of Manhattan project scientists. As these accusatory statements are also unfairly levelled at the Technicians, such an assessment would align with Asimovs’ Futurian leanings.
sensed that it was deeply threatening” (15). There was an increasingly popular “conviction that nuclear weapons are so absolute and horrifying that any defense against them is impossible”, and that they placed at risk all “human life … and perhaps life itself” (Oakes and Grossman 335-6). The emergence of this anticipated secular ‘end’ was a key to the intensity of nuclear fear. However, it was not simply its destructive connotations that created such anxiety, but also what this new apocalypse was lacking. The secular nuclear end lacked the assuaging ability of traditional apocalypse. As Bourke notes, in “the nuclear age it was no longer possible to mute the fear of death with a belief either in the afterlife or the lasting value of family or even civilisation. The individual, community and nation: all would be destroyed” (Bourke 260). Similarly, Wojcik links this lack of redemption to nuclear anxiety:

Although various secular movements promise or anticipate a radical transformation of the world after the destruction of current society ( Nazism, communism, or survivalism, for instance), most secular beliefs about imminent apocalypse are devoid of the component of worldly redemption and therefore tend to be characterized by a sense of hopelessness and despair. (4)

The ‘hopelessness and despair’ to which Wojcik refers here are precisely what traditional Christian apocalyptic models counteract. The lack of temporal continuity and thus “worldly redemption”, owing to the potential end of time, in the atomic age’s secular apocalypse is the key difference between it and its sectarian alternatives. It is this promise of temporal continuity that makes traditional apocalypse a ‘mode of alleviation’, and highlights why the new secular apocalypse was devastating and sublime, rather than comforting. As I argue in the following section, a key role of nuclear age time travel fiction is its reproduction of a secular analogue of this comforting end. It provides a fictional, yet similarly secular, representation of what the nuclear age apocalypse was missing—a comforting, transcendent ‘end’. Thus, the subgenre effectively restores apocalypse’s comforting elements. The apocalyptic myth, in its most popular form, contains a similar focus on “destruction” and a “radical transformation of the world” as that described by Wojcik (4). However, this sectarian version also maintains the comforting promise of transcendence.
The traditional Christian apocalyptic model can be considered a ‘mode of alleviation’ as it is both temporal and allays fears. One of the key ‘comforting’ features of apocalypse is its focus on temporal continuity: despite the predetermined tribulation, the promise of “the destruction of current society”, humanity is also guaranteed worldly continuance in the transformed future (Wojcik 4). The comforting nature of this feature of apocalypticism is evident in the longevity of the Joachite model. Before Joachim de Fiore’s twelfth-century prognostications, the dominant model of apocalyptic time was provided by St. Augustine. Augustine’s ‘two great time patterns’, or saecula, place the final stage of humanity, the ‘redemption’ that awaited following destruction, outside this world (Reeves 41). As Peter Brown says:

> The most obvious feature of man’s life in this saeculum is that it is doomed to remain incomplete. No human potentiality can ever reach its fulfillment in it; no human tension can ever be resolved. The fulfillment of human personality lies beyond it; it is infinitely postponed to the end of time, to the Last Day and the glorious resurrection. (212)

Therefore, before the late twelfth century, apocalyptic belief created a “prevailing mood ... of pessimism concerning the future. The world was slipping downhill and the signs of its final degeneration were already present” (Reeves 41). The only redemption was to come in the following, unknowable, post-time saeculum. As such, this apocalyptic model created pessimism, rather than anticipation. Joachimism’s key divergence was to move the “fulfilment” of “human potentiality” to within time. His revision of apocalypse made redemption knowable and imminent “by placing the Sabbath Age of the World and the opening of the Seventh Seal of the Church clearly within history” (Reeves 50). With humanity’s ‘reward’ placed within time, and achievable by those who are experiencing the ‘crisis’ at hand, apocalypse became a source of comfort—a mode of alleviation. Reeves describes the assuaging impact of linking the apocalyptic model to worldly redemption and human events:

> The effects of this new emphasis on those who came under Joachite influence can hardly be exaggerated. Joachimism gave historical happenings a unique importance, linking past, present and future moments of time with transcendental purpose. It invited the casting of roles in the final acts of the drama. Above all, it opened up the prospect of new human agencies called to participate in the last decisive works of God
in history. The backcloth of apocalyptic drama gave enhanced stature to actors in history. (51)

What Reeves describes here is akin to the notion of temporal continuity, which I outlined in chapter four. This new model provided purpose, and a link between humanity’s plight in the present and a promised reward. By presenting redemption as a worldly event, by placing it inside time, Joachim created the basic apocalyptic model, which has remained largely unchanged in the centuries since, and which is still extremely popular today. Fundamentalist groups, and self-styled prophets such as Hal Lindsay, Harold Camping, and the creators of raptureready.com, rely on the comforting, rewarding function of Joachamist apocalypse. For such ‘prophets’, it is a mode of alleviation that counters any crisis that threatens a society’s sense of purpose or continuity. These individuals and groups’ prognostications actively anticipate destruction by nuclear war or other means. These prognostications are ‘comforting’ as the Joachite model from which they draw contains the promise of temporal continuity and personal transcendence for the ‘faithful’131. As Reeves notes, this apocalypse also provides purpose, as opposed to the ‘pointless toil’ implied in Augustine’s depiction of time; this is what secular apocalypses lack. Nuclear fear was debilitating because it represented not just a return to Augustine’s denial of worldly redemption, but the impossibility of any temporal continuity whatsoever. In the following section I delineate a key role of atomic age time travel fiction that stems from this point: it allegorised the comforting elements of the Joachamist apocalypse while maintaining a secular paradigm, making it a fictionalised, secular reproduction of traditional apocalypses’ mode of alleviation.

Asimov’s The End of Eternity, Hamilton’s City at World’s End, Brown’s ‘Letter to a Phoenix’, and numerous other narratives from the ‘40s and ‘50s provide a temporal structure that follows the sectarian model, while presenting a (pseudo)scientific explanation for events. This structure provides an allegorical representation of what secular apocalypse is missing: both temporal continuity

131 Much of Robert J. Lifton’s work is highly critical of such fundamentalist myths of continuance, and subsequent lauding of the nuclear threat. He concludes that such a belief can be highly dangerous, referring to dispensationalists’ happy expectation of nuclear war: ‘Fundamentalist groups that invoke Biblical imagery to welcome nuclear holocaust also literalize and thereby renounce the regenerative dimensions of millennial imagery.’ (158)
and a transcendent end. The Christian apocalypse is a ‘mode of alleviation’ as it is a temporal process that provides comfort. On the other hand, the ‘final’ secular end is distressing. Nuclear age time travel stories bridge the gap providing, like the Christian myths, the image of a ‘grand future’, despite worldwide conflagration. This previously unacknowledged role of time travel fiction is a key example of how the subgenre responded to mid-twentieth century crises. For centuries apocalyptic fiction has been used to provide comfort in the face of uncertainty, by offering a sense of purpose, direction, and continuity. Nuclear-themed time travel fiction shares structural similarities and thematic resonances with the Christian apocalypse, and similarly depicts a form of transcendence. These fictional reproductions are alterations of the new secular apocalypse of the atomic age, which promised a final end with no promised redemption.

**Time travel as ‘repaired’ secular apocalypse**

My argument, that time travel fiction’s allegorical mode reproduces the effect of apocalyptic myths, is distinct from the most prominent studies of SF and apocalypse. Numerous theorists, including Galbreath and Ketterer (*New Worlds*; “The Apocalyptic”), have argued that SF is an apocalyptic genre. However, such arguments centre on the genre creating an ‘apocalyptic effect’ in the reader. Ketterer describes apocalyptic SF as that which presents a credible fictional world that causes “a metaphorical destruction of that ‘real’ world in the reader’s head” (*New Worlds* 13, emphasis in original). This ‘apocalyptic imagination’ has numerous parallels with Suvin’s novum. The function of the fictional novum, a key feature of the SF genre, is to prompt ‘cognitive estrangement’ in readers. Again, this is an ‘apocalyptic effect’, in that its goal is to destabilise the reader, leading her to questions regarding the nature of the world. In this section, when I claim that time travel fiction is apocalyptic I am not referring to its literary ‘effect’. My argument is that the time travel narrative device can be considered as an allegory for the more traditional apocalypse, and that it reproduces apocalypse’s function as a ‘mode of alleviation’. Time travel provides a textual representation of

132 See Alkon for a good summary of these arguments.

133 See chapter three for more on the novum.
the structure and comforting message of the sectarian apocalypse. These fictions, like apocalypse, are responses to contemporary crises, and offer allegorical ‘solutions’ to those crises and the prevalent climate of anxiety. The subgenre adds what secular apocalypse lacked: a wondrous end, but in secular form (and fictionally, allegorically represented). In this sense, I am arguing that time travel fiction is similar to the emergence of UFO myths in the mid twentieth century. Boyer, Bourke, and Wojcik all agree with Jung’s assessment that UFO sightings and abduction claims were “a manifestation of the fear of nuclear attack that had gripped America since August 1945” (Boyer xviii). As Wojcik points out, “[a]bduction lore shares features with other apocalyptic belief systems: it is characterized by a sense of powerlessness, perceptions of societal crisis, and the belief in a superhuman plan or superhuman forces that are overseeing the salvation of humanity” (197). As such, abduction stories were prompted by crises, and provided a promise of humanity’s salvation or evolution—much like the modes of alleviation I’ve defined in this thesis. Belief in UFOs provided the “vital psychic need” for temporal continuity in the form of life on other worlds, and human continuity via abductions (Bourke 268). UFO lore therefore mirrors the apocalyptic structure, with aliens initiating a figurative rapture, and promising human salvation either on another planet or on a ‘restored’ Earth. Sightings of UFOs increased throughout the Cold War. With the parallels between the apocalyptic model and UFO abductions, Boyer argues that this increase was a result of the growth of nuclear fear. I would argue that the spread of time travel as a SF subgenre mirrored this growth. Time travel fiction provides the same “vital psychic need” (Bourke 268) as UFOs: temporal continuity and the hope of ‘transcendence’ in the face of the ‘death’ of immortality.

Much like the emergence of UFO phenomena following World War II, time travel narratives in the atomic age played the role of secular allegories of the comforting Christian apocalypse. The traditional apocalypse offers worldly transcendence (since Joachim de Fiore’s thirteenth-century version), personal salvation in the face of worldly destruction, and thus a sense of temporal continuity. As such it is a ‘mode of alleviation’: a reaction to the perceived fears

134 The 2009 film Knowing is an example of this allegorical role of abduction lore (Proyas). It presents a scientised, literal version of the rapture, with aliens ‘saving’ a chosen few humans to restart humanity on another planet following the destruction of Earth.
and crises of the age. Time travel narratives, with the key example being *The End of Eternity*, play the same role, yet serve a different motivation; Asimov’s novel appeals to the grand potential of humanity as a whole, rather than personal continuance. Time travel fiction’s recurring features conform to modern definitions of apocalypse as a literary genre. A “widely accepted definition” describes apocalyptic literature as:

...a genre of revelatory literature with a narrative framework, in which a revelation is mediated by an otherworldly being to a human recipient, disclosing a transcendent reality which is both temporal, insofar as it envisages eschatological salvation, and spatial insofar as it involves another, supernatural world. (Collins 9)

These two key features, a revelatory figure and the discovery of a ‘transcendent’ reality, align with the common ‘modern’ features of Dispensationalist apocalypse (Weber). An other-worldly figure provides a revelation of things to come, Christ returns to rapture the faithful, a great tribulation destroys most of humanity, and the ‘saved’ are then returned to Earth which has become a ‘new Eden’. Time travel fiction secularises this process, with the ‘revelatory figure’ a time traveller, usually from the future. This secularisation is evident in *The End of Eternity*, *City at World’s End*, and numerous short stories including ‘Letter to a Phoenix’.

The ‘revelatory figure’ of the traditional Christian apocalypse is reproduced, in secular form, in time travel fiction. During the climax of *The End of Eternity*, Noÿs is shown to have ‘divine’ revelatory knowledge\(^\text{135}\), and thus plays this role. Noÿs possesses a secular version of this required prescient knowledge as a result of her time travel technology—she has literally seen the future transcendence, post cataclysm, and delivers her message to Harlan. Revealed to Harlan is the future of the human race, its nuclear tribulation and eventual ascension into the stars. Following this revelation, Harlan accepts his place in history as the instigator of a prescribed, yet ultimately transcendent future. This is a secular reproduction of Michael’s revelation to Adam in Milton’s Paradise Lost (1666). Adam is shown humanity’s rise to “eternal bliss” (Milton 12:551), and

\(^{135}\) Middleton and Woods point to the Eternals as revelatory figures, and mention the novel’s depiction of secularised mythology, yet this is kept parenthetical: “An elite organisation of time travellers (their name, ‘Eternals’, shows how much they represent a secularisation of powers once assumed the sole province of gods) ....” (265).
comes to accept the **felix culpa**\textsuperscript{136} represented by his and Eve’s Fall from Grace. Despite the coming turmoil for humanity, Michael’s revelation shows that this hardship will be ultimately beneficial. The scene also secularises St John of Patmos’ message from a divine source that describes itself as a being that “both liveth, and was dead” (*The Bible*, Rev. 1.18). Noûs is obviously alive at the end of the novel, but is also ‘dead’—the timeline in which she was born and existed has been irrevocably erased: she was never born, yet lives. She even solves the problem, ever present when considering a deterministic paradigm such as apocalypse, of the coexistence of divine foreknowledge and free will\textsuperscript{137}: the universe that she and Harlan create is static, and one in which a grand, transcendent future is predetermined. However, free will is maintained, as it is explained that ‘micro changes’ keep certain aspects of the timeline, such as individual choice, in flux. Similarly, in ‘Letter to a Phoenix’, the narrator, from an effectively omniscient viewpoint, has seen thousands of years of history unfold as a repeating cycle of destruction. He sees humanity as an immortal ‘phoenix’, and his ‘letter’ promises that humanity will survive the coming nuclear cataclysm. These time travellers and privileged observers\textsuperscript{138} see ‘what will be’, and bring foreknowledge into the past to provide humanity with guidance and hope. However, as their knowledge comes via empirical observation or technological means, the process of revelation is depicted in secular terms. This secular reproduction of the revelatory figure is a key aspect in time travel fiction’s role in reproducing the apocalyptic process. The revelation provided by these figures is usually positive, as Noûs’ was, and reduces fear through the promise of temporal continuity.

Time travel in *The End of Eternity* also projects a comforting, secular message of humanity’s survival well into the distant future, despite the dangers of nuclear technology. This marks the story as an allegorical substitute for the traditional apocalyptic model, and thus a reproduction of this mode of alleviation.

\textsuperscript{136} *Felix Culpa* or ‘fortunate fall’: The notion that the Fall ultimately benefited humanity, allowing it to eventually reach a transcendent plane higher than would have been possible if Eve had not transgressed.

\textsuperscript{137} See the final section of this chapter for more on determinism and free will.

\textsuperscript{138} In *City at World’s End*, the role of the secular revelatory figure is played by the alien visitors, who descend from the sky bringing a promise of temporal continuity.
Time manipulation allows Asimov to present a comforting end to replace the feared final end of the nuclear age. As discussed in chapters four and five, the novel concludes with the creation of the ‘real’ timeline of the reader. The protagonists manipulate history and change time to ensure that “the first nuclear explosion will take place not in the 30th Century but in the 19.45th” (Asimov Eternity 188). In this reproduction of ‘our’ reality, the future includes the “probability ... that Earth will end with a largely radioactive crust” (188). This image is representative of apocalyptic destruction, with a nuclear-fuelled tribulation most ‘probable’, and with nuclear war likely to destroy the planet. However, the final result of this destruction is not the extinction of the human race, but rather an “intensification”, or improvement, of the Basic State of the universe. The human race will grow throughout the galaxy and create the “Galactic Empire” that is central to Asimov’s Foundation series (Eternity 188)139. This end, in contrast with the extinction promised by ‘Eternity’ and its pacification of humanity140, is described as “Infinity” by Noÿs (188). Eternity, though continuing for tens of millions of years, comes to an ‘end’. In the novel’s original timeline(s) humanity dies out through Eternity’s influence, and parts of time are literally blocked off from the Eternals. This lack of temporal continuity, a manifestation of the notion of the nuclear-age fear of the ‘end of time’141 is replaced by the ‘infinite’ scope of a galactic future. What was a ‘final end’ of time becomes a boundless future for the human race. As such, in a secularised version of the Christian apocalypse’s promise of temporal continuity, the message is that humanity will survive despite tribulation. This process of continuity is brought about by nuclear technology. Spaceships that were developed because of the development of the bomb, rather than an ‘act of God’, make this possible. My argument at this point intersects with that of chapter four of my thesis. In chapter four I argued that time travel fictions allegorised a sense of ‘anticipation’, and that they countered the end of time by depicting temporal continuity. Many of these texts use time travel to show humanity’s endurance following nuclear devastation. City at World’s End, ‘Letter to a Phoenix’, ‘Time and Time Again’, and other stories

139 Asimov’s Pebble in the Sky (1950) depicts the result of this future nuclear conflict, with Earth and highly radioactive. However, this is not a great concern, given that humanity has, in the world of the novel, evolved and spread across the galaxy.

140 See chapter four for more on this point.

141 Again, see chapter four.
depict visions of, or visitations to, the future in the wake of nuclear devastation. As such all of these stories can be said to follow the apocalyptic structure. However, those that depict a ‘muted’ utopia, a particular feature of the Campbellian ‘half’ of the utopian imagination, are not fully featured secular reproductions of traditional apocalypse. They lack the ‘celebration’ of the threat of tribulation that is a feature of Christian apocalypse. However, *The End of Eternity* goes this extra step and allegorically reproduces both the joy of the rapture, and the promise of worldly transcendence that makes apocalypse a mode of alleviation.

*The End of Eternity* allegorically reproduces more than just temporal continuity; its use of time travel also recalls the comforting effect of the Christian rapture. In the traditional dispensationalist model of apocalypse, the chosen people are taken into the heavens, and returned to Earth once it is reborn as a new paradise (Weber 11). The faithful therefore avoid direct contact with the devastating battle taking place on Earth. Their only ‘solid’ experience with it is on Earth in the lead-up to the tribulation, and when they are returned to Earth as Christ establishes his Millennium. In *The End of Eternity*, Harlan—and in a way the reader—experiences a secular allegory of this process. He mentally ‘skips over’ the coming tribulation and takes comfort instead from the promise of a ‘new Eden’ in the form of the Galactic Empire. Despite the fixed nature of the time line that Noës convinces Harlan to create during the novel’s climax, the tribulation she describes remains a potentiality. She is from the very distant future, and has directly examined the results of this new timeline, wherein humanity will “have the infinite our grasp” (Asimov *Eternity* 185). Much like Christ’s ‘new Eden’, humanity will literally transcend the “prison” that is Earth and spread throughout the heavens (183). This ‘vision’ is ‘true’, as Noës, a time traveller, has seen it in the future. Also directly viewed via time travel, and thus ‘solidified’ in the novel is the creation of this timeline, which involves, as I have argued, the ‘real world’ development of nuclear weapons. Therefore, Noës effectively ‘raptures’ Harlan. He is told that devastation (may) be coming, but the only things described in detail are the ‘lead up’ to the danger of nuclear war and the promise of humanity’s transcendence. The rest is left vague and ambiguous, and not directly experienced. The Christian rapture means that the faithful don’t have to directly experience the
tribulation, but are comforted by the promise of transcendence that will follow. In an allegorical, yet secular fashion, Harlan is similarly ‘raptured’. The ‘new Eden’ depicted in this text is also a secular allegory of its Christian equivalent. The image of humanity moving beyond Earth and spreading amongst the stars evokes the Christian transcendence, but it remains stoically secular: the process of Reality Changes, used to create this future, is described in purely scientific terms. It is not a ‘divine plan’ that results in transcendence, but scientific discovery prompted by the intrusion into the past of the time travellers Noÿs and Harlan. As such, the novel refashions the nuclear crisis at the same time as it is being produced. The apocalyptic belief that nuclear weapons “could obliterate the entire planet”, one that “pervaded all society” (Boyer 5, 15), was co-opted by dispensationalists. Apocalyptic beliefs transform such nuclear fear into a source of comfort, as any destruction will simply herald a new age. Asimov’s novel similarly appropriates nuclear fear, but in a secular manner, and marks the bomb as the key to humanity’s temporal continuity and ultimately its transcendence.

A more direct, and less symbolic, allegorical reproduction of the rapture and transcendence is found in City at World’s End. Here, the ‘opening volley’ of a nuclear conflict removes an entire town from time, and returns it once the conflict is over and the world has been destroyed (ch. 1). While a ‘new Eden’ is not established at the moment the raptured town arrives in the future, the novel’s climax depicts the ‘rebirth’ of the planet, and the beginnings of a return to paradise:

It was as though a dead heart had suddenly started to beat again. To beat strongly, exultantly, a planet reborn … every day the wind blew a little more softly and now at last the first blades of grass were pushing upward, touching the ocher plains with green. (ch. 20, 21)

Since it is a nuclear explosion that begins Earth’s regeneration, in Hamilton’s novel the bomb is responsible for the destruction of the planet, but also for both the safe removal of a selection of people from this devastation, and the Edenic regeneration of Earth. As such, the story’s time travel conceit (and the nuclearism upon which it relies) is a structural analogue for the rapture; a secular alternative for the comfort provided by apocalypse’s divine mandate. Quinby suggests that the popularity of “apocalyptic zeal … over the centuries” is a result of its
“[h]eartfelt expression for suffering to come to an end” (4). This is what these time travel texts promise—the end of the ‘suffering’ created by nuclear fear, and its replacement with transcendent hope. This allegorical mode, in which the texts reproduce the apocalyptic process, is an extension of the notion of ‘anticipation’, which I examined in chapter 4. There I discussed the ‘comforting’ aspects of the new nuclear reality: the suggestion that it could be the key to future wonders, and possibly utopia, and thus worth its inherent risks. This chapter takes that argument a step further. Rather than simply reproducing the promise of temporal continuity and/or a positive future, time travel fiction can also allegorise the complete apocalyptic structure while remaining secular. *The End of Eternity* and *City at World’s End* depicts nuclear technology as the key not only to humanity’s survival, but also its transcendence. It thus reproduces the comforting aspects of the Dispensationalist apocalypse.¹⁴²

The transcendent end for humanity in *The End of Eternity* and *City at World’s End* mirrors the comfort-making feature of the Joachite apocalyptic model. Harlan replaces an apocalypse that lacks a positive end—the extinction of humanity that concluded the Eternals’ timelines—with a rewarding end that occurs firmly within the worldly realm. Joachim’s apocalypse, with its key departure from Augustinian tradition, similarly relocated an affirming finale to within human history. As with Joachim’s model, Asimov presents a fictional universe that gives “historical happenings”, in this case the creation of the nuclear bomb, “a unique importance, linking past, present and future moments of time with transcendental purpose” (Reeves 50-51). This secularisation and ‘nuclearisation’ of the Christian model is central to this role of atomic-age time travel narrative devices. In *The End of Eternity*, time travel is used to enact this transformation, with the timeline altered to add a transcendent end. As such, the subgenre’s role is that it provides a secular reproduction of the increasingly popular dispensationalist apocalyptic model of the mid-to-late twentieth century. The apocalyptic mode of alleviation is temporal, and time travel provides a fictional reproduction of this process. As such, much like apocalypticism, time travel fiction transforms the anxiety-inducing temporalities of the nuclear crisis.

¹⁴² This comforting message is similarly reproduced in other stories from the period, such as Brown’s ‘Letter to a Phoenix’, which shows the bomb as the key to humanity being “the only immortal organism in the universe”.

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Namely, an allegorical representation of the fear of the end of time is reformed as a comforting vision of temporal continuity and transcendence for humankind.

Nuclear fear is a temporal crisis, and it needs a temporal ‘solution’. The structural similarities between time travel fiction and apocalypse suggests that it plays the same role. The faith-based model promises continuity and a transcendent end despite a destructive tribulation: a process of ‘crisis-judgement-vindication’. Time travel, like UFO lore, provides an analogous process, but in a secular form. Of all nuclear-age time travel fiction, *The End of Eternity* is the most ‘complete’ secular reproduction of the traditional apocalyptic paradigm, which goes beyond the notion of ‘anticipation’ of benefits and technological marvels to reach a spiritual ‘ascension’. Other time travel narratives from the era, in particular those that ascribe to Campbell’s utopian anti-utopianism flirt with the secularisation of the apocalyptic mode. Stories such as ‘Letter to a Phoenix’ and ‘Time and Time Again’ allegorise aspects of apocalypse—the promise of temporal continuity or the revelatory figure—but Campbell’s tempered ‘transcendence’ remains a step back from reproducing the truly uplifting, ‘spiritual’ inversion of nuclear fear promised by traditional apocalypse. This is where Asimov’s novel diverges, in line with his Futurian vision. It secularises the Christian apocalypse’s comforting message of transcendence via destruction, adding the missing assuaging factor to the secular apocalypse. As such, the novel effectively ‘repairs’ the threat of a nuclear end, and played the same role as traditional apocalyptic fictions. It acted as a ‘mode of alleviation’, a temporal solution to ‘the end of time’, a key temporality of nuclear fear. The fictions examined so far in this chapter are what I have called ‘future-directed’; they involve visions of, or travel to, the contemporary future. However, the ‘past-directed’ causal loop form of time travel fiction can also simulate a comforting version of the secularised apocalypse. One particular example is ‘The Last Word’ (1957) by Damon Knight. As I will demonstrate, this story is a past-directed time travel tale that secularises the traditional apocalyptic

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143 John Varley’s *Millennium* (1983), and other texts from the 1980s, such as Timothy Robert Sullivan’s ‘Comedian’ (1982), offer a more direct literalisation of the apocalypse and the rapture. I discuss such texts briefly in my conclusion, yet as they were composed after the time period I focus on in this thesis, they remain an area for future study.

144 The End of Eternity depicts both ‘past’ and ‘future’ directed time travel. Asimov’s use of many of the key time travel models in one novel is one of the reasons that the text is a key focus in this thesis.
model and presents a promise of temporal continuity in a similar manner to *The End of Eternity*. However, it also highlights a second key comfort-making element of apocalyptic fictions. Apocalypse is a multi-faceted mode of alleviation. It provides the promise of continuity for the righteous, with any coming disaster simply the next step toward a transcendent future. Yet, it also belies another temporal aspect, one that I’ll examine in the following section. Apocalypse successfully combines a deterministic framework, a prewritten plan, with a strong sense of individual free will. This mode of alleviation, ‘agency’ rather than ‘anticipation’, is similarly reproduced in time travel fiction of the mid-twentieth century. Where ‘anticipation’ of either a utopian or transcendent end worked to counter the threat of the end of time, ‘agency’ alleviates the sense of determinism and repetition that I discussed in chapters one and two.

**Cyclical apocalypse and ‘alleviation’ via agency**

In the first chapter of this thesis, I delineated the temporalities that surrounded the onset of the Second World War. The war evoked a sense of recurring trauma, marked by ‘temporal isolation’ and overt determinism. These same temporalities, I argued in chapter two, are elements of the general sense of immanent crisis that Kermode claims is near universal in Western culture. In both cases, I demonstrated that time travel fiction engages with these temporalities by allegorically reproducing them. So far in this chapter I have argued that a key role of apocalyptic fiction is to alleviate the problem of ‘temporal isolation’ by promising a grand, transcendent future. However, apocalypse also provides a solution to the psychologically negative temporality represented by determinism. As Kermode argues convincingly in *The Sense of an Ending*, much of apocalypse’s assuaging power comes from its melding of a deterministic paradigm with a sense of individual perpetia. In this section I argue that this combination is another example of the temporal nature of apocalypse as a mode of alleviation—one that causal loop time travel fiction allegorically reproduces.

Kermode’s analysis of apocalypse highlights the assuaging power of temporal continuity, but it also focuses on its provision of agency. Kermode argues that humanity is linear by nature, and is upsettingly born *in medias res*. Thus, we tend to create comforting connections between our lives “in the middest”, and
fictionalised beginnings and endings (Kermode 17). Thus, paraphrasing to incorporate my terminology, he argues that the appeal of apocalyptic traditions is that they supply a sense of temporal continuity; apocalypse provides a “coherent (pattern) which, by the provision of an end, make(s) possible a satisfying consonance with the origins and with the middle” (17). This sense of purpose, and thus comfort, is dependent of the fixed, deterministic apocalyptic paradigm. However, as I argued in the first two chapters, determinism can be psychologically debilitating. Kermode’s assessment of apocalypse focuses on the provision of individual choices within this deterministic framework. It is this combination, he claims, that provides apocalypse with much of its assuaging power. As such, Kermode’s account is another example of apocalypse functioning as a mode of alleviation. It engages with a temporal aspect of crisis, in this case determinism, and relieves it of its negative connotations.

Apocalypse avoids the problem posed by determinism by adding peripeteia (Kermode 17). While deterministic at its core, since God has ‘prewritten’ the fate of human kind, the Christian apocalyptic model avoids the denial of free will. The overall path of the human race is ‘set’ by the almighty, but each individual is given a chance for personal salvation. The Tribulation will occur, with the death of millions pre-ordained, but each individual is allowed access to redemption by choosing to repent and believe. In narrative terms, Kermode says that in order for apocalyptic fiction to provide a comforting “satisfying consonance”, it needs to remain fiction rather than becoming myth (17). The difference, he says, given the requirement of the basic apocalyptic paradigm with its “obviously predestined end” (17), is the presence in fiction of peripeteia. Unexpected events along the path to the paradigmatic end provide a necessary tension between credulity and scepticism, allowing the immanent apocalyptic fiction to seem ‘real’:

...[We] think in terms of crisis rather than temporal ends; and make much of subtle disconfirmation and elaborate peripeteia. And we concern ourselves with the conflict between the deterministic pattern any plot suggests, and the freedom of persons within that

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145 This is not the case in Calvinist doctrine, which involves the ‘pre-election’ of the chosen. Individuals can do nothing to change their status, creating a purely deterministic system that many found distasteful. Milton apparently (and “famously” according to Weber, although I have been unable to source the original quote) said of the Calvinist God and its doctrine of predestination: ‘Though I may be sent to Hell for it, such a God will never command my respect’. (Weber 101)
The moral ‘choice’ supplied to Christians is reflected here as the ‘freedom of persons’ to alter their own personal destiny, or ‘end’, within the predetermined framework. In short, being unaware of the future means that, from a subjective viewpoint, the individual has ‘choice’, despite existing within a deterministic framework. Agency is thus temporal: it depends on not knowing the future, and thus believing that actions in the present affect that future\(^{146}\). With perepetia supplying agency, apocalypse’s paradigmatic structure is able to provide the sense of purpose and continuity that humanity craves. This view of apocalypse is, according to Kermode, a ‘universal’ mode of alleviation—it has persisted throughout recent Western history. It is also one that nuclear age time travel and time-focussed SF allegorises. It counters the temporalities of crisis examined in chapters one and two: the anxiety created by a cyclical, deterministic model of destruction reproduced by causal loop SF.

The comforting power of choice amidst a deterministic paradigm was evident during the wartime boom in ‘cyclical apocalypse’ science fiction. While the first chapter of this thesis focussed on their negative elements, not all examples of time loops and recurring cataclysm held purely destructive connotations. Although the deterministic framework that came with most of these models rendered them expressions of wartime trauma and anxiety, others such as the ‘Shaver Mystery’ phenomenon (1945-46) also highlighted the assuaging power of choice and agency amidst a deterministic crisis. Neal points out that societies need help to cope with collective traumas such as warfare:

[When an] event becomes a collective trauma ... [the] integrity of the social fabric is under attack, and some form of repair work is needed to promote the continuity of social life (7)

Wartime science fiction that presented cyclical destruction not only reproduced the temporal isolation and determinism of trauma, but also this type of ‘repair work’. The texts achieved this by literally reproducing the deterministic temporal crises contemporaneous with their production (see chapters one and two), and

\(^{146}\) This is not a new argument. It was central to Boethius’ reconciliation of divine providence and free will in his *The Consolation of Philosophy* in circa 524 AD.
overlying this narrative focus with a prominent message, highlighting the power of individual agency. As such, these texts reproduced the combination of perepetia and deterministic paradigm that Kermode assigns to apocalypse’s assuaging power. Again, this correlation points to the role played by chrono-centric and time travel texts in the mid-twentieth century. They both allegorised the temporalities of the crises occurring at the time of their composition, and the modes of alleviation, such as apocalypse, that provided relief from these dramas.

The ‘Shaver Mystery’ is a prominent example of a deterministic cyclical disaster maintaining choice and agency, thus countering the effect of the trauma of war (Neal 7). Prompted by Richard Shaver’s short story ‘I Remember Lemuria’, published in Amazing Stories in (1945), the ‘Shaver Mystery’ dominated the magazine for well over a year. The premise was stated to be “not fiction in (its) basis” but rather a “dramatized” version of true events (Palmer “Editor’s Note [Vol 20.1]” 3). Shaver and the magazine’s editors claimed that the downfall of the lost civilisation of Lemuria (Mu) was a consequence of nefarious forces that were at work once again in the modern-day USA. Much like Bond’s Exiles of Time, which similarly used the destruction of Mu as an expression of fears of contemporary cataclysm, the ‘Shaver Mystery’ told of an impending doom: a repeat of a downfall of humanity at its ‘high-point’. The popularity of the stories, editorials, and letters that dominated Amazing throughout the final year of the war and beyond, was perhaps a result of the sense of agency it created in contrast with the cyclical disasters of Exiles of Time or Asimov’s ‘Nightfall’. Rather than presenting the coming disaster as inevitable, the magazine issued a call to arms to its readers to prevent its repetition. It appealed to its readers’ sense of a grand “purpose here on earth” (sic), and called on those who felt they had “work of some far-reaching scope to perform” to act in promoting Shaver’s “truth” (Palmer “Editor’s Note [Vol 19.3]” 166) to avoid the repetition of the disaster that befell Mu. Similarly, it claimed to be “delighted to know that so many people know what is going on in the world today and better still, are doing something about it” (Palmer “Editor’s Note [Vol 20.1]” 3). By providing readers with the apparent ability to ‘do something’ about world events, to enact their sense of purpose in a seemingly ‘far-reaching’ way, the architects of the ‘Shaver Mystery’ allowed their audience to overcome the anxiety usually inherent in repeating crises. The ‘mystery’ also
aligns with Neal’s assessment of conspiracy as provider of structure in opposition to the destabilising effects of trauma:

Under conditions of national trauma, the mystery and secrecy surrounding backstage areas results in perceptions of devious plots and conspiracies. ... People fill in the information gaps by imposing their own structure on the situation. Meaning is attributed to senseless events: order is imposed upon chaos; and simplistic explanations are constructed from complex and contradictory information (14).

The conspiracy at the heart of the Shaver Mystery countered its theme of repetitive destruction by allowing readers to impose ‘their own structure’ on pre-plotted world events. This plot recalls Kermode’s assessment of apocalypse’s provision of perepetia, which similarly allows “freedom of persons within (a) plot to choose and so to alter (its) structure” (Kermode 29, emphasis in original). Shaver’s stories thus provided a sense of control at a time when uncontrollable, world-changing events such as the bombing of Hiroshima and Nagasaki were occurring. In the first issue of Amazing Stories following the birth of the atomic age, two short letters regarding the bomb were published, while over three full pages of lengthy missives regarding Lemuria filled the rest of the letters section. This reader-led preoccupation with Mu, and the increase in magazine space dedicated to the ‘Shaver Mystery’ in subsequent issues, speaks to the comforting nature of the perceived ability to act freely in the face of uncontrollable trauma. When America faced the recurring threat of apparently inevitable warfare and the continuity-destroying revelation of the atom bomb147, its fantasy turned to an impending catastrophe that was presented as both controllable and avoidable. Thus, the ‘Shaver Mystery’, while depicting ‘cyclical time’ rather than time travel, reproduced the assuaging ability of apocalypse’s provision of agency148. Causal loop time travel fiction similarly allegorised this sense of comfort via agency. The logical necessities of time travel in a block universe simulate the assuaging combination of paradigm and perepetia, as described by Kermode. Before articulating this allegorical mode of time travel fiction, it is necessary to first further delineate the temporality of the causal loop narrative device.

147 See chapter three of this thesis for a major examination of this theme.
148 See Alfred Bester’s ‘Adam and No Eve’ (1941) for another example of SF reproducing the combination, and thus making determinism a source of heightened agency and power.
Recalling my delineation of the term 'temporality' from the opening pages of my introduction, the causal loop structure is representative of a reconfiguring of dominant notions of causation. As I outlined in chapters one and two, fictional causal loops are the consequence of time travel in a strictly deterministic universe. However, they also often depict the assuaging ability of agency, combining with their deterministic structure to simulate Kermode’s generalised apocalypse. This allegorical mode stems from the causal loop’s need for two different perceptions of time to remain logically coherent. These are ‘personal time’—that is the flow of time relative to, and experienced by, an individual—and ‘external time’. External time is time that exists a priori, in this case the unchanging, static, tenseless block of time through which personal timelines flow. This combination is required to overcome logical objections to time travel, based on basic causal issues. For example, if personal time is not considered, time travel can result in an ‘effect’ preceding a ‘cause’—for instance a time traveller can die, according to the calendar (external time), before they were born, which is logically impossible. Similarly, the combined perspective counters non-equivalency paradoxes. An example of this type of paradox is the following question: if a time traveller moves forward five years, and the journey takes five minutes, then how much time has passed? David Lewis offers a handy, if lengthy, description of the interaction of personal and external time that resolves these types of paradoxes:

We may liken intervals of external time to distances as the crow flies, and intervals of personal time to distances along a winding path. The time traveler’s life is like a mountain railway. The place two miles due east of here may also be nine miles down the line, in the westbound direction. Clearly we are not dealing here with two independent dimensions. Just as distance along the railway is not a fourth spatial dimension, so a time traveler’s personal time is not a second dimension of time. How far down the line some place is depends on its location in three-dimensional space, and likewise the locations of events in personal time depend on their locations in one-dimensional external time. ... Five miles down the line from here is a place where the line goes under a trestle; two miles further is a place where the line goes over a trestle; these places are one and the same. The trestle by which the line crosses over itself has two different locations along the line, five miles down from here and also seven. In the

149 The terms ‘personal’ and ‘external’ time have been used by philosophers of time including David Lewis. Personal time can be likened to McTaggart’s ‘A-series’ time, whereas external time is synonymous with his ‘B-series’. In this chapter I will use the more descriptive terms ‘personal’ and ‘external’ time for clarity. See McTaggart for an explication of the A and B series.
same way, an event in a time traveler’s life may have more than one location in his personal time. If he doubles back toward the past, but not too far, he may be able to talk to himself. The conversation involves two of his stages, separated in his personal time but simultaneous in external time. The location of the conversation in personal time should be the location of the stage involved in it. But there are two such stages; to share the locations of both, the conversation must be assigned two different locations in personal time. (137-8)

I have included this analogy in full as it offers a clear picture of the distinction between personal and external time, and these differences are vital to my argument. As illustrated in Lewis’ description, external time is the straight, linear path from past to future. Personal time, for a time traveller, can be folded back on itself: like a piece of string compared to a ruler. As such, the non-equivalence question posed earlier is solved. How much time has passed? The answer is: five years of external time, and five minutes of personal time. Without both perceptions of time, paradoxes arise. Analysing a time traveller’s path from an omniscient outlook only is the equivalent of considering the block universe model with respect to external time only. The consequences of both are pure determinism, with no consideration given to the individual experiencing the flow of time within such a model. However, both the Special Theory of Relativity, a consequence of the block universe model, and causal loop time travel devices depend on individual, relative, personal timelines (world lines). Thus, causal loop stories require some consideration of the protagonists’ experience of personal time. Similarly, analysis from an isolated linear perspective, for example following one ‘time traveller’ along her criss-crossing train tracks and out the other side, is akin to considering personal time without external time. This is also unacceptable, as block universe time travel demands external time. External time is at the core of the block universe model, with time existing statically, independent of human perception. If personal time is the sole consideration, then a tensed, solipsistic framework emerges. This removes the possibility of time travel, as if time does not exist a priori, then there is no future or past to which one may travel (Grey 57). As

150 In the cyclical apocalypse stories such as Exiles of Time, described earlier, external time is similarly causal and unchangeable, but is a circle rather than a straight line. While a distinction between personal and external time is always necessary for time travel to be logically consistent (and for the avoidance of paradox), the ‘straight’, linear, and unchangeable characteristic is not always correct. It is however, a necessity when describing block universe time travel such as causal loop models.
such, both personal time and external time are implicit in any causal loop time travel story; all causal loop stories require both types of time\textsuperscript{151}. It is this combination that provides fictional causal loops with an allegorical function: ‘external time’ can be likened to a deterministic framework, whereas ‘personal time’ allows for perceived peropetia.

The logical necessity of mixing personal and external time in block universe time travel narratives highlights the loop’s ability to allegorically reproduce apocalypse’s comforting sense of agency. As examined in chapter two of my thesis, a block universe is deterministic. Time travel stories set in such fictional universes, with Heinlein’s ‘By His Bootstraps’ a key example, often focus on this determinism. Bob Wilson explicitly experiences the lack of free will inherent to an ‘external’ view of his time travelling loop. When he is unable to affect the future, when it seems he is “enmeshed in inevitability”, he experiences extreme anxiety and curses the “damned repetitive treadmill” on which he has found himself. However, to avoid logical paradoxes the story also demands consideration of Bob’s personal time. Bob explicitly describes this combination of perspectives, and points to its role in preserving personal agency within a deterministic framework:

Free will was another matter. It could not be laughed off, because it could be directly experienced—yet his own free will had worked to create the same scene over and over again. Apparently human will must be considered as one of the factors which make up the processes in the continuum— “free” to the ego, mechanistic from the outside. (Heinlein “Bootstraps” 271)

This is precisely the same combination of paradigm and peripetia that Kermode describes. Apocalypse provides a blueprint for humanity’s purpose, and supplies temporal continuity beyond the ‘middest’ into which we are born. This prewritten blueprint, however, is only ‘mechanistic from the outside’. From the perspective of each individual, their ego is ‘free’ to choose and create a future for themselves. In the real world an individual is unable to see what the future holds, and can thus be surprised, even by prewritten events. This process is disrupted in fictional

\textsuperscript{151} While this distinction may seem straightforward or the product of common sense, it was central to academic debates regarding the logical possibility of time travel in the 1960s and 70s (primarily in the \textit{Journal of Philosophy}). Putnam, Smart, Harrison, and Horwich provide key examples.
depictions of time travel, as when Bob Wilson meets (multiple) future versions of himself and becomes aware of his future actions. However, causal loop stories’ deterministic focus—their emphasis on the loss of free will experienced by time travellers such as Bob—is the key to their approximation of apocalypse’s ability to moderate such temporal concerns. Causal loop fiction depicts extreme determinism, wherein a time traveller continually ‘proves’ that time is prewritten and that, from an external perspective, free will is not possible. Yet, this narrative focus gives way, in the case of both ‘By His Bootstraps’ and, as I demonstrate shortly, ‘The Last Word’, to an enhanced depiction of free will. A heightened focus on agency is created by contrasting depictions of ‘proven’ determinism, and the anxiety underpinning such a model of time, with protagonists reaffirming their free will. These texts do this by refocusing the narrative on the protagonists’ experience of personal time. In the case of Bob Wilson, despite the ‘known’ paradigm of the block universe he has traversed, he experiences enhanced agency and comfort. At the end of the story he is resolved to work hard to create his position of power, even though he already assumed that position:

... [He] had work to do, work which must be done meticulously, without mistake. Everyone, he thought with a wry smile, makes plans to provide for their future. ... He was about to provide for his past. (Heinlein “Bootstraps” 274)

Here both the story’s and the causal loop model’s allegorical connection to Kermode’s apocalyptic model is completed. Bob is comforted by the ‘known’ ending of his story, and the ‘reward of a “great future” that awaits him, much like the comforting promise of apocalypse’s transcience (276). Despite his awareness of his story’s mechanistic nature, from his perspective of personal time he is ignorant regarding his specific future actions. He has seen the result of these actions, his ‘plot’ as Diktor, but has not yet enacted them or made all of the intricate choices that will be involved. He has been the ‘effect’, but has not initiated the ‘cause’. This viewpoint allows him freedom “within that plot to choose”, to experience “subtle disconfirmation”, and thus the comfort that Kermode ascribes to apocalypse (Kermode 29, emphasis in original). This combination of personal time and external time is needed for the story to make sense, thus any causal loop story contains this combined perspective of time. It is this mix that allows time travel fiction to further allegorise apocalypse’s role as a mode of
alleviation. It simulates not only the comforting transcendence offered by the Christian apocalypse, but also the similarly reassuring combination of determinism and peripeteia described by Kermode. Both of these aspects of apocalypse’s role as a mode of alleviation are similarly allegorised in Damon Knight’s ‘The Last Word’, and it is with an analysis of this story that I conclude this chapter. Knight’s story uses time travel to depict a secular yet ‘repaired’ apocalypse, with temporal continuity preserved. It also allegorises the combination of agency and deterministic paradigm that are, according to Kermode, central to apocalypse’s ability to reduce anxiety and to act as a source of comfort.

‘The Last Word’ uses a causal loop to provide a secular version of the Christian myth. Some elements of the sectarian apocalypse are present in the story, with strong allusions to Satan, Adam and Eve, and the traditional apocalypse. However, the work’s representation of these Christian elements is firmly secular. The story follows the structure of the traditional apocalypse. Humanity is corrupted, a ‘final battle’ is fought, and a ‘new Eden’ is established. However, it is time travel technology, not Christ, which raptures the survivors. The narrative outlines Satan’s apparent victory. Nuclear weapons allow Satan’s “final war” to be one “so unprecedentedly awful, that man would never recover from it” (Knight “Last Word”); he is shown to have “won Armageddon”. The last two humans survive, “on a crag that overhung the radioactive ocean” inside a machine comprising a “transparent dome, or field of force, that kept out the contaminating air”. This image, of humans protected from the final battle by an invisible force that suspends them above the “radioactive” devastation, is reminiscent of the Rapture of the faithful. However, here the protective force is the secular machinations of a time machine, and not Christ; it saves the survivors by sending them into the past. The ‘new Eden’ created by these survivors is revealed to be not ‘new’ at all, but rather a return “[b]ack to the beginning, to start all over”, as the time machine shunts into the distant past. Thus, a loop is established, with the survivors (a woman called Ava and an

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152 Since the story’s first-person narrator is implied to be Satan himself, it is debatable as to whether this story belongs to the science fiction or fantasy genres. However as its time travel elements are explicit, scientific in nature, and prominent, I have included it in my analysis.

153 This image also alludes to the contemporary fascination with fallout shelters.
unnamed male) implied to be Adam and Eve. Strictly there is not enough information in this short narrative to firmly establish whether a pure, block universe causal loop is the result of this time travel, but the implication is there\textsuperscript{154}. As such, the story secularises the Christian myth, with science, in the form of the time machine, rapturing the couple and taking them to their transcendent future (personal time) in the historical past (external time). Therefore, temporal continuity is depicted, despite the total nuclear devastation, which has ended all other life on Earth. This temporal continuity is depicted as comforting, a ‘victory’ for Ava and her companion. However, in this case time travel’s allegorical reproduction of the apocalyptic myth forms a closed loop, and therefore creates a cyclical apocalypse. As I argued in chapters one and two, this temporality is a symptom of mid-twentieth century crises, with a sense of repeating destruction prominent in wartime America. Therefore, the story could be expected to hold negative connotations, and to be an expression of this temporally continued prominence following the war, in the nuclear age. However, its conclusion instead reinforces apocalypse’s ability to comfort by entwining such determinism with enhanced individual agency.

‘The Last Word’ privileges individual agency within a deterministic system, and thus allegorises apocalypse’s comforting mode. Knight’s narrative presents the threat of nuclear war as a deterministic, endless crisis. Much like Kermode’s apocalyptic paradigm, this ‘blueprint’ by itself is negative. With a causal loop established, the tribulation therefore gives way to the “beginning”, creating a perpetual cycle of degeneration and war, as described in Satan’s narrative, with the ‘Golden Age’ existing only at the beginning of time. The loop thus seems to negate the positive, hopeful aspects of the apocalyptic model. Temporal continuity and transcendence are provided following nuclear devastation, but only in the past, in a closed loop of time that involves a perpetually escalating crisis, with an inevitable, fiery cataclysm as its dénouement. The future involves an empty wasteland described by Ava as “Hell” (Knight “Last Word”). A prominent image provided to the reader is a barren, lifeless planet with

\textsuperscript{154} Satan’s lamentation regarding his "lax ... first few thousand years” (Knight “Last Word”) and his admission that he has not been on Earth since “the very beginning” imply that his ‘origin story’ has been altered to preclude the temptation of Eve. This would explain why he does not recognise the time travellers and solidifies the case for a closed time loop to be considered the model of time presented in the story.
“nothing left but the bare, riven rock, cratered like the moon” continuing for thousands of years—much like fears that a lifeless Earth would result from a nuclear attack. However, this devastation is only prominent from a perspective of ‘external time’. Following the viewpoints of Ava and her companion (personal time), their actions seem freely chosen, and they experience comfort analogous to that provided by Kermode’s apocalypse. Ava and her companion claim victory over Satan by choosing to act. Their agency is retained as Ava claims that Satan has “lost (the battle for) Earth” (Knight “Last Word”). As such, I would suggest that the primary message of the story is that humankind’s scientific, inventive aspects, represented by the time machine and the birth of mathematics (Knight “Last Word”), will overcome and outlive its most destructive inventions (gunpowder, war, and nuclear weapons). It is their actions—building the time machine, using the red-handled switch, escaping “Hell” to the safety of the past—that leave Satan alone in his dead ‘prison’, and allow them to begin the cycle over once more. The perspective shift that restores Ava’s agency is central to philosophical discussions of time travel. The same focus on combining external and personal time, and on perception, is central to philosophers’ attempts to resolve time travel and free will. Papers by Putnam (1962), Harrison (1971), Craig (1988) and Lewis (1993), all rely on the superimposition of the “free” ego upon a deterministic framework to resolve logical objections to time travel such as the grandfather paradox. Time may be unchanging from an external view, such arguments claim, but the time traveller retains agency. It is not that things cannot change in a mechanistic universe, but that they will not change. The universe, an unchanging tense-less paradigm in this model, requires the perception of the changing, tensed individual ego to avoid the destruction of free will and its anxiety-inducing consequences. As such, this type of time travel demands the agency-restoring perspective shift that Ava undertakes. Like the Christian apocalypse’s provision of agency, in

155 The grandfather paradox is the logical incompatibility that arises if a time traveller kills his grandfather in the past. If his grandfather never had children, then how can his direct descendent exist to travel back in time and carry out his murder?

156 This requirement of a combined model of time was pointed out by H.G. Wells. An early version of The Time Machine (published in five instalments in Henley’s New Review) has more detail regarding nature of time than the Heinemann (final) version. Leiby describes this addition using MacTaggart’s terminology (see footnote 145): In “… the New Review version of The Time Machine, the writer explicitly superimposes the A-series on the B-series; that is, the consciousness (a dynamic concept) “falls through” the Rigid Universe (a static structure). Wells posits an entity that moves and a continuum that does not move…” (Leiby “Tooth” 109).
which an individual can ‘choose’ to be faithful, repent their sins, and thus be saved, Ava similarly ‘chooses’. Despite its divinely dictated, prewritten map, the traditional apocalyptic myth remains a mode of alleviation owing to this provision of individual choice. This story, and other causal loop and cyclical apocalypse narratives such as ‘By His Bootstraps’, ‘The Shaver Mystery’ phenomenon, and ‘Adam and no Eve’ allegorise this mode of alleviation. They depict a deterministic process of turmoil, but add the possibility of individual agency and salvation.

These examples of time travel fiction’s allegorical mode further demonstrate the subgenre’s socio-historical function. These types of time travel narratives represent a mediation or engagement with the deterministic anxieties that were a product of the socio-historical crises within which they appeared. It has been firmly established by Jameson, Suvin, and others that SF, and particularly SF with utopian/dystopian themes, is a “narrative movement in which the groups of a given collectivity at a certain historical conjuncture anxiously interrogate their fate” (Jameson “Progress” 148). When this ‘fate’ involves temporalities of crisis such as a deterministic denial of beginnings and ends, causal loop time travel proves to be a useful interrogative tool. It is a structure that at once denies agency and endings, while demanding—via logical necessity—a perspective shift that restores these comforting elements. Its emergence in SF was during a period marked by apparently ‘prewritten’ crises such as World War Two and the nuclear threat. It was also a time in which Minkowski’s mathematical ‘proof’ that spacetime is an entity that exists a priori—that the deterministic ‘block universe’ is a very probable model of time—gained mainstream attention (Nahin 111). These narratives may have emerged spontaneously, or they may be very conscious engagements with contemporary scientific and social development. Either way, the causal loop narrative device allegorises the temporalities of crisis examined in chapters one and two: determinism and cyclical destruction. At the same time, it simulates their alleviation. As evidenced in ‘The Last Word’ and ‘By His Bootstraps’, the loop provides a similarly allegorical depiction of the psychic ‘relief’ offered by modes of alleviation such as apocalypse. This reproduction remains secular, with the ‘science’ of time travel replacing the mysticism of the sectarian myths.
The allegorical mode of time travel fiction allows the causal loop narrative device to reproduce the comforting temporal structure of Kermode’s apocalypse, wherein a deterministic paradigm is combined with agency-making perpetuity. Fictions such as The Shaver Mystery phenomenon, ‘The Last Word’, and ‘By His Bootstraps’ present an immanent turmoil as fixed and unavoidable. However, these fictions’ loop model imbues this paradigm, this temporality of crisis, with individual agency in the same way as apocalyptic models. Time travel fiction also provides an allegorical reproduction of another aspect of this mode of alleviation; it functions as a ‘repaired’, secular alternative to the traditional myths. The End of Eternity and City at World’s End use time travel to allegorise apocalyptic features including the revelatory figure, the Rapture, the secular ‘end’, and most importantly, the Christian apocalypse’s promise of temporal continuity and transcendence. These texts thus serve as modes of alleviation. They figuratively ‘repair’ the secular apocalypse by reproducing the ‘comforting’ elements of sectarian apocalypse, but in fictional, secular form. This is a key example of the sociological function of time travel fiction. These fictions emerged at a time when US society ‘needed’ endings, purpose, reassurance, and agency. It allows for the depiction all these modes of alleviation by simulating their temporal structure. My argument here, that time travel fiction has an allegorical mode that reflects the socio-cultural crises within which they were produced, thus offers a new consideration of the role of this SF subgenre.
Conclusion

The US socio-political climate in the mid twentieth century was marked by upheaval and turmoil. The Second World War and the birth of the nuclear age were moments of crisis within which “the foundations of life quake(d) beneath our feet” (Tillich, cited in Kermode 46). Time was central to these crises, as it is time that allows the very notion of change, of free will. It is the temporal consequences of crises that create fear. In her landmark study of fear, Joanna Bourke points out that in the twentieth century:

...there were times when all of history seemed to be reciting a traumatic script, devoid of answers or ‘sense’. On these occasions people’s terror was so overwhelming that their most fundamental identities were in danger of being engulfed (ix)

Such was the case during World War II: its temporalities lent a repetitious, deterministic fervour to its turmoil, with the “traumatic script” of the Great War apparently ‘recited’ once more. Similarly, the fears of the Nuclear Age stemmed from the bomb’s threats being “devoid of answers”: the looming ‘end’ of everything, the denial of the future, was a sublime and unimaginable potentiality that destroyed "the symbolization of immortality” via social or genetic continuance (Lifton 23). The period was also notable for the Golden Age of Science Fiction, which closely reflected these technological and societal crises. While stories such as Heinlein’s ‘Blowups Happen’ (1940) have been recognised as pre-empting the nuclear age, the time travel subgenre often sits to one side of considerations of SF’s socio-political function. However, depictions of chronological manipulation, paradoxes, time loops, and the destruction of timelines serve a specific purpose. They provide an allegorical representation of the temporal aspects of mid twentieth-century moments of crisis, such as the traumatic, terror-inducing "script" described by Bourke, or the ‘loss of immortality’ that is central to Lifton’s examination of nuclear fear. Lowenstein posits the “allegorical moment” of horror cinema, which he describes as a point of collision between film, spectator, and history (2). In terms of time travel fiction, a similar phenomenon exists, yet the role of the spectator, or reader, is less central. There exists an intersection between time travel texts and historical events, which redefines the purpose of the subgenre. The question at hand is whether the utility of chrono-centric narrative devices is confined to modernist play or philosophical
musing. The collision between text and socio-historical context points to the time travel device’s “allegorical mode”, and provides a definitive answer to this question.

Time travel fiction’s allegorical mode allows for the reproduction of the time-centred elements of contemporary crises; mid twentieth-century examples of the subgenre reproduce the ‘temporalities of crisis’. This sociological function of time-centred SF was at play in the pre- and intra-war years. In the early 1940s, the looming Second World War was a cultural trauma with temporal symptoms. Trauma “demarcates time, producing a breach in its homogeneous course”, and the War was no exception (Hartman “Trauma” 267). Its onset marked an intrusion of past into the present, the return of the trauma of the Great War, combined with a sense of powerlessness, an inability to influence the future. These symptoms of this cultural trauma were temporal, manifesting as a sense that time was both cyclical and deterministic. Time travel fiction of the period presented the same temporal structures in fictional form, pointing to a latent allegorical meaning; SF that depicts cyclical, unavoidable destruction reproduces the temporalities of cultural trauma. This allegorical mode was prominent in the early war years, with Nelson Bond’s novel *Exiles of Time* (1940), Isaac Asimov’s ‘Nightfall’ (1941), and van Vogt’s ‘Recruiting Station’ (1941) all explicating this image of cyclical devastation. With little or no direct reference to growing conflict in Europe, with the exception of ‘Recruiting Station’s obvious allusions to the draft, the nature of time in these stories offers examples of the subgenre’s allegorical mode. The narrative depictions of time manipulation and time loops are themselves sites of intersection between text and event. Traumatic responses to encroaching war were temporal, and were played out via similarly temporal narrative devices, evoking the fear that humanity was trapped in a destructive cycle with no end.

The crisis of World War Two not only manifested as cultural trauma; trauma is dictated by the past’s influence on the present, by the traumatic event appearing to return. Another temporal element of this crisis was its inevitability, removed from the apparent ‘return’ of the Great War. The threat of fascism and the coming war was an immanent crisis, one that seemed to have no end, and no beginning. Such a general sense of crisis, of being trapped in a moment of transition, is a constancy described by Frank Kermode. Western culture is inclined,
he says, to exist *in medias res*, in a perpetual ‘end-time’ or an ‘age’ of transition in which ‘the end’ is ever present, yet perpetually deferred. This was at play in the lead up to America’s involvement in the war, with the threat of fascism an immanent crisis; with no official involvement, the U.S. apparently lacked influence. During the war itself, ‘immanent crisis’ manifested as societal time entered a repetitive, mechanistic state. An aura of ‘frozen time’ emerged, as mechanistic, repeating routines, timetables, drills, and a lack of personal time dominated everyday life (Duis 36-37). ‘Resolution’ and personal development were perpetually deferred, with a day’s transition giving way to the beginning of the same cycle. This temporality of crisis was not just experienced at a cultural level. Individuals experienced it too, as evidenced by Heinlein’s personal correspondence and other writings from the period. Heinlein’s fictions reflect the temporalities of both his and his culture’s crisis, via time travel’s allegorical mode. The time loop of ‘By His Bootstraps’ is a site of ‘working through’ this universal crisis, articulating its affect of isolating the present moment as a site of perpetual conflict.

Despite its ‘immanent’ nature, as experienced by those in its midst, World War Two concluded and Hitler was defeated. However, in an example of Kermode’s transitional crisis, this ‘ending’ simply marked a transition into another period of turmoil. The immanent threat of fascism gave way to a new crisis, born with a blinding flash and a mushroom cloud. In prominent studies of the nuclear age and its accompanying anxieties, the role of time has been somewhat under-acknowledged. The nuclear age had a significant impact on the time scale. In contrast to the rapid expansion of time in the mid-to-late nineteenth century, time in the nuclear age contracted. The wonders of the future seemed to be within reach, and the future thus seemed to come to the present. This was one source of nuclear fear, as the acceleration of time was sudden and intense. Similarly, the nuclear age conflated cause and effect, as world-changing consequences became associated with apparently inconsequential actions; the nuclear apocalypse could, it seemed, be prompted by a simple push of ‘the button’. The science fiction community’s response to the onset of the atomic age is documented in the fanzines, and in the pulp magazine editorials and fan letters, of the 1940s and 1950s. These first-hand accounts of reactions to the bomb help to delineate the
connection between nuclear fear and changing perceptions of time. These fears are teased out and reproduced in the era’s time travel fiction. The narrative’s allegorical mode allows for the literal representation the figurative manipulation of the time scale that accompanied the bomb. Where Bradbury and Asimov depicted the death of a butterfly and the movement of a jar ripping through history and inexorably altering humanity’s future, society’s fears surrounded a single bomb having the same lopsided effect.

The crisis represented by nuclear technology had other complex temporalities. Primarily, the bomb prompted the fear that it would lead to the literal ‘end of time’. If all life were to be destroyed, then time would effectively cease. However, this temporality of nuclear technology has an inseparable, yet distinct counterpoint: the temporality that I call ‘anticipation’. This is the belief that a utopian, space-age technology was imminent because of the advances that would form part of nuclear future. These interacting temporalities point to a secondary function of the era’s time travel fiction. Not only did it reproduce the temporalities of its contemporary crises, but also the phenomena used (consciously or unconsciously) to alleviate them. Such ‘modes of alleviation’ are processes, like anticipation, that create affirming, comforting messages in response to socio-historical crises. Anticipation is a ‘temporality of crisis’, it is a future-directed reaction to a crisis: a vision of a wonderful future that would be ushered in by the bomb. This was not simply a traditional utopian vision of futuristic cities and wonderfully happy people, but instead visions of a transcendent end, enacted by nuclear technology, that directly ‘trump’ the threat of the final end. Time travel’s allegorical mode allowed for narratives to depict the end of time, articulating the period’s fears. It also provided scope for such an end to be counteracted, with variable timelines, journeys beyond cataclysm, and visions of the future depicting humanity’s survival and thus ‘temporal continuity’. The process of anticipation is reproduced via contemporary time travel fiction’s allegorical mode, yet this was not the only mode of alleviation at play in the nuclear age.

During the early cold war, the US government deployed propaganda of integration on its population, in the form of the civil defence initiative. This was also a temporal mode of alleviation. While propaganda’s agitating, revolutionary
connotations are central to the concept, it also has a reactionary, integrative function. Propaganda can be used to stabilise a newly installed ideological hierarchy. It can ensure the maintenance of the status quo via the rationalisation of a current situation as the best possible for a given culture. The functionality of such propaganda is temporal. By manipulating the ‘truth’ of past events, the US government reinforced its preferred ideological models during the Cold War years. This process of ‘revisionism’ had a pacifying purpose, to reduce public fears relating to its strategy of nuclear deterrence. The ‘changing the past’ connotations of such propaganda are allegorically reproduced in ‘branching time’ science fiction. *The End of Eternity*'s use of time travel’s allegorical mode provides an intersection between text and socio-cultural ‘event’: the US Government’s attempt to reduce nuclear fear in the 1950s. The time travel devices themselves (the ability to ‘change the past’ and to create ‘branching’ realities specifically) function in an analogous manner to such integrative examples of propaganda. They depict the refashioning of truth: the changing of the past to solidify the present and to reinforce a timeline that aligns with the propagandists’ desired ideology. This is allegorically equivalent to the processes enacted in the civil defence program. Along with diegetically reproducing the temporal aspects of this mode of alleviation, *The End of Eternity* and other time travel texts from the period also, as I have argued, function as examples of integrative propaganda. *The End of Eternity* in particular presents a euchronic message: it reinforces privileged interpretations of the development of the bomb by lauding the choices of the past and rationalising the present as, literally, the best of all possible realities.

Mid twentieth-century modes of alleviation were not limited to propaganda or other government initiatives. Apocalypse is a resilient source of alleviation from temporal crises, and one that has been prominent for centuries. Traditional apocalyptic fictions of the Joachite tradition fit my definition of modes of alleviation as, despite their mainstream connotations of destruction, they provide comforting messages of temporal continuity; the function of apocalypse is to provide a transcendental purpose to believers: a message that coming destruction will lead to the birth of a ‘new Eden’. The bomb secularised many aspects of apocalypse, and spread belief in ‘the end’ amongst the secular contingent of the population. While traditional apocalyptic fictions provided some
relief from nuclear anxiety for the faithful, the new secular apocalypse lacked its comforting, transformative properties. Nuclear age time travel fiction functions within this schism, mimicking the structure of the comforting, sectarian apocalypse, while remaining stoically secular. These stories use time manipulation, and narrative transitions between the present and a post-nuclear future to depict a wondrous end for humanity, despite the nuclear devastation. Along with this transcendental promise, they also secularise key mollifying elements of the sectarian apocalypse, depicting the rapture and the revelatory figure in allegorical form. As such, these texts serve as secular surrogates for apocalyptic fictions, ‘repairing’ the problem of the secular end. They provide science-based reproductions of the traditional, comfort-making sectarian apocalyptic model. Thus, the texts serve as ‘modes of alleviation’, cultural artefacts that expose both the temporalities of their surrounding crisis, and the comfort-making processes needed to alleviate said temporalities. Apocalypse’s comforting appeal is also intricately connected to humanity’s perpetual transitional crisis, as described by Kermode. In *The Sense of an Ending*, Kermode outlines apocalypse’s function in providing an otherwise absent consonance between beginnings, ends, and the crisis-filled ‘middle’ we inhabit. The causal loop time travel device, the model that allegorises the immanent, deterministic, and cyclical crisis that accompanied World War II, also reproduces this comforting aspect of apocalypse. Causal loop fiction depicts a literalisation of perpetual crisis—an immanent apocalyptic moment with a perpetually deferred climax. However, it also merges this temporality with a subjective perspective. The depicted time traveller may be in a deterministic system, but from her perspective agency is retained; she can influence the future, and she can effect change. As such, fictions like ‘By His Bootstraps’ are also expressions of this apocalyptic desire. They model the appeal of apocalyptic fictions, reflecting both their ability to create comfort, and the temporal crisis that creates the need for such fictions in the first place.

Traditionally, time travel fiction’s deployment of paradoxes such as time loops has led to the subgenre being more closely associated with philosophical conundrums than any firm socio-cultural purpose. In academic examinations of time travel, examples are most commonly used as a springboard for philosophical analyses of time (Lewis, Vranas, and Sider), or for providing taxonomies of the
different types of time travel fiction (Burling, Slusser and Heath, Richmond). The collection of time-travel themed papers, *World's Enough and Time*, along with Nahin’s excellent study of the subgenre, provides a deep historical, philosophical, and taxonomical outline of time travel fiction. However, for the most part, the socio-cultural purpose of the subgenre is not addressed. Those who approach an assessment of the purpose of time travel fiction, such as Westfahl, Boyd, Middleton and Woods, and Cheng, touch on its allegorical role, but these points either form a small part of their overall arguments (Middleton and Woods, Cheng); address isolated texts without making a statement about the narrative form’s overall purpose (Westfahl); or fall short of a detailed analysis of the time travel devices themselves (Boyd). A sustained argument provided by Burling, one echoed in part by others including Slusser and Chastain, and Lem, posits that paradoxes, loops, and altering time lines’ primary purposes are narrative play—a modernist game. Lem is particularly damning in his assessment, asserting that authors using time travel “give up all that constitutes (SF’s) cognitive value” (154). In contrast with such claims of the time-heavy elements of these fictions being “ideologically neutral”, my argument throughout this thesis has been that such narrative devices perform a specific socio-cultural function (Burling 8). They themselves form “a dynamic historical critique” (12); they allegorically reflect the time-centred fears and anxieties that dominated American culture in the mid-twentieth century.

When time travel fictions composed in the decades following World War II and the nuclear age are considered, the relevance of my assessment of the subgenre is strengthened. The near-universal, transitional ‘moment of crisis’ that Kermode describes appeared throughout the rest of the century, and with these changes came similar temporalities. The Cold War gave rise to the surveillance state; the 1960s and ’70s were marked by the crises of the Civil Rights movement and Vietnam; the 1980s saw nuclear fear become prominent once more; and the fin de siècle of the ’90s was dominated by eschatological crises such as AIDS, the possibility of environmental collapse, and Y2K. While glossed here, these transitional crises were all temporally laden. Questions regarding the continuity of the species, the validity of past choices, of propaganda rewriting past history, of surveillance ‘solidifying’ otherwise transient and subjective past events, were all features of these various crises. The role of these periods’ time travel fictions in
reproducing their temporalities is a rich area for further study. This is particularly
the case surrounding the second peak of nuclear fear in the 1980s—what Ruthven
calls the “second cold war in the Cold War period” (13). The temporalities of
nuclear fear that I have examined here rose to prominence once more during this
period, and again time travel fiction provided an intersection between text and
event. Both Bourke (259) and Weart ([2010] 234) mark 1983 as the “peak” of the
decade’s nuclear concerns, and numerous fictions from that time perform the same
allegorical function as those I have analysed in this thesis. John Varley’s
Millennium (1983), as the title suggests, allegorises the Christian apocalypse, with
time travellers ‘snatching’ passengers from historically doomed aircraft (the
Rapture) and, following Earth’s destruction, depositing them on a new planet (a
transcendent ‘end’). Similarly, ‘Comedian’ (1983) by Timothy Robert Sullivan
depicts a time travelling entity from the future (a ‘revelatory figure’) guiding the
story’s protagonist to take children in order to save them from an impending
nuclear holocaust, thus ensuring humanity’s temporal continuity (again, much like
the Rapture). Louise Lawrence’s ‘Extinction is Forever’ (1984) depicts humanity’s
adaptation following nuclear devastation, again sending a message of temporal
continuity. The 40-Minute War (1984) by Janet and Chris Morris also reproduces
time’s continuance, in this instance in a manner akin to Hamilton’s ‘Time and
Time Again’. The Danger Quotient by Annabel and Edgar Johnson (1984) uses the
causal loop structure to allegorise the immanence of the crisis of warfare, while
providing a mollifying ‘working through’ via a model recalling Kermode’s
apocalypse. Ray Bradbury’s ‘The Toynbee Convector’ (1984) also offers an
assuaging message, and uses time travel to approximate the comfort of
propaganda in the face of an eschatological crisis. Finally, The Proteus Operation
by James P. Hogan (1985), recalling The End of Eternity, uses branching time and the
‘many worlds’ consequence of time travel to mark the US’s development of the
bomb, the real world of the reader, as euchronia. It is not just the approximation of
the nuclear referent that provides these texts with their socio-political utility; it is
their depiction of time travel devices and paradoxes that literalise the problem of a
possible nuclear end, appropriate the alleviating function of propaganda and
apocalypse, and provide a promise of temporal continuity. These texts draw on

157 Another area for further study is time travel cinema’s allegorical function. Some of the more
the same temporalities as those pioneered in SF’s golden age, those by Asimov, Heinlein, Bradbury, Knight, and those printed in the pulp pages of Astounding Science Fiction. They possess the same allegorical mode that I have delineated throughout this thesis—that which was prominent during the first ‘peak’ of nuclear fear. This reappearance of time travel fiction’s allegorical function suggests that it is a central aspect of the subgenre as a whole, and one that warrants further attention.

Time is central to moments of socio-cultural upheaval, yet it is often of secondary concern when such crises are examined. Science changes perceptions of time: Darwin’s evolutionary timescale and Kelvin’s thermodynamics both expanded time, while the threat of an imminent nuclear end reduced it dramatically. Einstein’s relativity killed ‘absolute’ time, yet brought with it deterministic consequences. A truncated list of more recent scientific advances that have altered societal engagement with time would include recording technology, satellites, advances in telecommunications, and the Internet. Time is also refashioned during significant socio-cultural events, such as war, personal and cultural turmoil, and trauma. The temporal aspects of these crises are central to their anxieties, and to their alleviation. As such, time travel fiction is a vital lens. The entire subgenre, not universally, but very often, functions as a ‘time viewer’. Through its allegorical mode, through the allegory of moving through time, of deterministic loops, and the rewriting of history, time travel fiction provides a cultural record of the past, allows for insight into the developments and core concerns of its age, and, most centrally, highlights time’s role in the anxieties that shaped history: it reveals the temporalities of crisis.

successful films of 1980s and 1990s used time travel conceits: The Terminator franchise, The Back to the Future trilogy, and 12 Monkeys to name a few. When it comes to the time travel-specific element of such texts, much energy is expended on the philosophical tangles that they evoke: teasing out the consequences of, say, Marty McFly’s interference in his parents’ past, or Kyle Reese’s apparently preordained meeting with Sarah Connor. Questions that could be asked involve how such depictions of time travel intersect with socio-cultural concerns: for example, how does Back to the Future’s nuclear-powered time machine, and its ability to literally erase McFly’s family—his symbolic link to immortality—from existence, reflect the nuclear fear of the 1980s?
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