PARADOXES OF HUMAN FREEDOM AND
THE TIME TRAVEL FILM

A Thesis Submitted to the College
of Graduate Studies and Research
In Partial Fulfillment of the Requirements
for the Degree of Master of Arts
In the Department of English
University of Saskatchewan
Saskatoon

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ABSTRACT

This study discusses how the literary device of time travel can limit or empower protagonists. The main focus is on H.G. Wells’ *The Time Machine* and the two films of the same name inspired by the novel. The popularity of time travel in film springs from the myriad storytelling possibilities the device provides, and the writer’s agenda determines what place, if any, logic and causality have in the story. Some narratives endorse the theory of eternalism, where time is fixed and the time traveller’s actions are fated to be consistent with the history the traveller knows. But many films rely on theories of multiple timelines and many worlds, giving the traveller a much greater range of agency. Paradoxes of causality can inhibit the traveller’s actions as well. This essay discusses the broad spectrum in time travel narrative, where at one end travellers are imprisoned in history, and at the other they enjoy a great deal of freedom.
ACKNOWLEDGEMENTS

I owe many thanks to my supervisor, Professor Peter Hynes, for his invaluable suggestions and excellent leadership.

I am also indebted to Professor Terry Matheson, whose captivating lectures on science fiction first sparked my interest in The Time Machine, and who went on to become my very helpful examiner.

I am also deeply grateful for the support of both the Department of English and the College of Graduate Studies and Research. The opportunities to teach and to tutor not only funded my research, but also taught me a great deal about English and about people, and where I would like to take my degree in the future. In addition to that priceless gift, the funding I received to give a presentation and speak on panels at the World Science Fiction Convention gave me an unforgettable experience and directed my paper in ways I had never imagined.
DEDICATION

To Ken and Val Elder, my parents, whose support is constant and immeasurable.
Time travel, one of the most popular ideas of science fiction, has been embraced by filmmakers because this theme is versatile and can open many different doors in storytelling. Lives can be lost, but then saved; love can be found across years and even centuries; the far future can be seen and the long-ago past can be visited. Time travel can create a story that otherwise would not have been possible. Furthermore, it can allow characters to do things they would normally not be able to do, giving them the power to change their own pasts and even the history of the world. This greater realm of possibilities alters the characters’ very agency—that is, their ability to act and exert influence. There does not appear to be a constant within modern film as to what time travel will enable a person to do; each movie seems to have its own rules, whether explicit or implicit. In fact, depending on the philosophical theory of the nature of time involved, it might be more prudent to ask what time travel will allow a person to do. Some narratives use a no-holds-barred, free-for-all version of time travel, where characters enjoy immense power to change their circumstances, while others constrain the characters’ actions to a fated course of events. The agency of time travellers is not a new question in science fiction criticism, but the variety of creative practice in film rarely invokes the rules of scholars and physicists. Instead, it is the writer’s agenda that ultimately determines what the traveller is able to accomplish.

To discuss the traveller’s agency we must know what his or her motive is and whether he or she accomplishes it. This will be subject to the motive of the writer. Following those surface deductions, a deeper analysis of agency in time travel must revolve around two theories, which are the poles of the broad spectrum. The first theory is eternalism, where time travellers are constrained to follow a fated course; and the second is that of multiple timelines, where time travellers have much freer action, especially if there are multiple universes involved. Although (and because) the corpus of Hollywood time travel movies offers a plethora of examples, my discussion of agency will focus mainly on H.G. Wells’ forerunner The Time Machine and the two movies of the same name inspired by the novel, as these works are central to the genre and show very different intentions. Next, causality and paradox will be discussed as devices that can hinder or force the time traveller’s actions, and there I will draw examples from what may arguably be the most classic and influential achievement of the genre, the Back to the Future trilogy.

When H. G. Wells wrote The Time Machine in 1895, the idea of travelling through time
was pure fantasy, rather than scientific possibility. But his groundbreaking novel went on to popularise time travel as a sub-genre of science fiction. The author’s agenda was to extrapolate the trends he saw in evolution and human social structure. The motive of his protagonist, an inventor, was the advancement of scientific knowledge. When the Time Traveller arrives in the extremely far future year of 802701, the human race has undergone a drastic transformation. Those who were once the noble aristocracy have become the delicate, childlike Eloi, and their servants have devolved into the pale, apelike Morlocks. Interestingly, Wells used the time machine only as a vehicle to change settings, not as a device to advance plot; within the first day, the Time Traveller loses his machine so that he is forced to live among the Eloi and make further observations about the world of the future. The search for the time machine leads him to the underground lairs of the evolved working classes, where he makes disturbing discoveries and concludes that the Morlocks kidnap and feed on the Eloi. That the upper class would come to be preyed on by those they once oppressed is a chilling social commentary!

The purpose of Wells’ story is clear, and in this bleak vision, the only agency his Time Traveller can exert is a negative influence. This future world is an extrapolation of the British class system writ large, and Wells’ gentleman inventor shows the signs of weakness that the aristocracy will eventually suffer for. He acts foolishly by striking off on his own, forsaking the safety of the company of Eloi. Although the Morlocks have threatened him several times, he cannot see them as a danger. He underestimates the Morlocks and overestimates his own capability, based on his traditional sense of superiority. Thus he loses a poor childlike girl in his charge, sets a forest on fire, and almost dies—all in his irresponsible, poorly-executed search for knowledge. In the world of 802701, the Time Traveller has no power, and the wonderful invention of time travel does not help him to accomplish his goals. He fails to contribute to the scientific community: he tells a small group of professional friends about his discovery, but only the narrator believes him; he plans to bring the little Eloi girl back to his present (126), but Weena is lost in a forest fire he started. He succeeds only in bringing back “two withered flowers, not unlike very large white mallows” (121). After this failure he promises the narrator to “prove you this time travelling up to the hilt, specimens and all” (153), but something goes

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1 Granted, the credibility of the story would suffer if he were to succeed, since the reader should already know about it.
wrong as the time machine disappears. Since he promises to return in half an hour, the reader must assume that he is no longer able to travel through time, whether through an irreparable mechanical malfunction or by his own injury or death. All in all, Wells’ Time Traveller botches his mission: he does not prove time travel, nor does he leave behind any documentation or plans in the hands of someone capable to duplicate the experiment. The greatest change he makes to his time is to eliminate himself from it, thereby eliminating any more changes his life would have made. In this story, although time travel seems to offer a great amount of agency, all of the Time Traveller’s pursuits are in vain, at least as far as the present is concerned.

A movie based on the novel arrived in theatres in 1960, released by MGM and directed and produced by George Pal, but the story was radically changed. Themes that were appropriate for a Victorian English readership were no longer relevant to a post-war American audience. Wells’ dismal ending had to be scrapped, as the popular film could not dissatisfy viewers with an unfruitful conclusion. What was the point of time travel if it did not accomplish anything? The protagonist had to be given a different motive, one he could fulfil to gratify the masses, and the theme of class inequality had to be revamped for a new era. As the film was made not long after the second World War and in the middle of the Cold War, it adopted a new agenda: to warn against nuclear war, yet urge resistance against evil oppressors. In this rendition, the Time Traveller is named after H. G. Wells himself and goes by his middle name. When his friends question whether the future can be changed, George answers, “Now that’s the most important question to which I hope to find an answer. Can man control his destiny? Can he change the shape of things to come?” This is certainly a thrilling pronouncement, at least on the surface. When his good friend Filby asks why he is preoccupied with time, George reveals his motive: “All right, if you want to know the truth, I don’t much care for the time I was born into. It seems people aren’t dying fast enough these days. They call upon science to invent new, more efficient weapons to depopulate the Earth.” To drive this point home, before the movie drops him off in the far future, this Victorian gentleman travels to the twentieth century and observes the effect the World Wars have on his home in London, and then to 1966 (a mere six years after the film’s release) where he sees an apocalyptic nuclear war. And so in this version of 802701, it is not social Darwinism that divides humankind, but perhaps a corruption of the gene pool by some
kind of nuclear radiation.

In this updated tale, George has a vast amount of agency, and cannot overestimate his abilities. Indeed, this average gentleman has godlike power over his circumstances. His tiny match flares into blinding light with the help of special effects, and the Morlocks are no real threat to his masculine heroics. He manages to wake a primal survival urge in a few of the Eloi, and he rallies a small group against the Morlocks. When George abandons his own time for good, he goes with all confidence that he can save the Eloi. Filby concludes that he has gone to save Weena and to “help the Eloi build a new world. Build a new world for himself.” The movie has delivered its positive, pro-defence, pro-knowledge message—but is George’s choice to live in 802701 really changing “the shape of things to come”?

This hero abandons his own people and time, resigned even to letting his true friend Filby die in the upcoming war. Perhaps George figures the Eloi for a malleable race and Weena for a malleable girl, people who are receptive to the changes he wants to make. Here in 802701 George does have the power to make all the difference—but in opting to rebuild civilisation in the future he deserts the human race as he knows it as irredeemable. Such an interpretation changes the ending from positive to disturbing: that humanity must be purged, wiped out, so George can start over as God in a garden of Eden.

From these two versions of The Time Machine it is clear that what the protagonist is able to accomplish depends directly on the author’s agenda. The time machine appears to have stranded or killed Wells’ Traveller in an unknown time, but allowed the 1960 film’s George to manoeuvre out of the Morlocks’ trap and reappear in a better tactical place to fight them. Yet the time machine remains, for all intents and purposes, a vehicle. It may not be much more special than, say, a motorcycle, which would have been technologically advanced to the Time Traveller and George, and which could either cause an accident or help to create an escape. This time-travelling vehicle also brings the possibility of an imagined future setting where a fantastical story can be told, and a commentary about the state of current society can be made. The time machine is merely a plot device used to move through time, and the manipulation of the timeline, of history, is not yet a concern. In both stories, the protagonist only travels into the future to live life sequentially. His disappearance does alter the time into which he was born, but in a negative
or inconsequential way. Had he stayed he might have created more inventions, published his discoveries, and revolutionised scientific thought. At the very least he might have had a family and descendants who went on to further impact society. These would all be significant changes to his future, possibly bigger than any changes he could make in 802701. If the Time Traveller’s mysterious accident at the end of the novel killed him, agency would be a moot question, and if he were stranded in a primitive future his progress to make change would be slow. Likewise it remains doubtful how much progress George could make training the unconcerned Eloi, how long those changes would last, and how far-reaching they would be. If George had finished the letter he was about to write to the English government, about the use of his inventions for the war effort, he certainly would have made great changes to the “shape of things to come.” If he had brought proof from the future about the wars, perhaps he could have tried to stop the wars from ever happening. Then again, creating change within one’s lifetime—and bringing proof of an event one plans to stop from happening—might be, logically and causally, a much trickier puzzle.

Since these early examples, there has been a shift: instead of asking questions about the nature and future of humanity, today’s fashionable time travel stories more often revolve around individual people. These time travellers want to change events within their own lifetimes rather than explore and influence alien settings. This kind of change is much more problematic than future travel. Travelling into the future is just a sequential jump. The traveller might as well have moved away to another part of the world and returned, with the only difference the fact that he or she did not age in the interim. However, travel into the past is fraught with problems of causality. It is in logically reconciling paradoxes of causality that the traveller’s agency becomes a much more interesting issue. An illustration of time travel meddling with the relationship of cause and effect is in the 1985 film Back to the Future. In this tale, protagonist Marty McFly travels thirty years into the past and takes his father’s place in his mother’s affections. This disturbing yet hilarious turn of events comprises a paradox: Marty, an effect of his parents’ relationship, has interfered with the cause—and since effects must always follow causes, the chain of causality is broken. Rather than a straightforward line, causality becomes circular: if Marty stops his parents from conceiving him, Marty will cease to exist. If he does not exist, he cannot go back in time to
obstruct his parents’ romance, and so his parents will fall in love and eventually conceive Marty, allowing Marty to eventually go back in time to stop his parents from conceiving him, *ad infinitum*. This is equivalent to the most commonly cited causal problem, the *grandfather paradox*, in which a traveller goes back in time and kills his or her grandfather before the man is able to meet the traveller’s grandmother. These are unending cycles; so how can it be possible that Marty is able to prevent his parents from conceiving him?

The way in which paradoxes are resolved (or not resolved) depends entirely on the writers’ manipulation of the plot. In the world of *Back to the Future*, Marty is not immediately unmade as a consequence of breaking the causal chain. Instead, the existence of the McFly children appears to disappear slowly from history, as shown by Marty’s elder siblings fading from a photo. The plot of the movie thus requires Marty to match-make for his own parents or else fade away into non-existence. When his parents fall in love, the paradox is resolved, and Marty is able to return to his own time again. In this case it is clear that reconciling the paradox is in Marty’s best interest. He personally desires his family intact, and through his own agency he is able to re-establish this chain of events. While the slow fading of the photograph and of Marty is implausible, it does allow the paradox to be avoided. Many other time travel stories have the same sort of paradoxes, sometimes with no explanation at all, and their resolutions are not always as simple.

But what if the time traveller’s desires do not coincide with causal continuity? What if the actions the traveller takes are deliberate and unrepentant steps toward paradox? An example of this can be found in the second screenplay inspired by Wells’ novel. Released in 2002 by Warner Bros. and directed by the author’s great-grandson Simon Wells, this film is not so much an adaptation of the text than it is an original movie that takes place in a world where Wells’ novel already exists. The protagonist is updated for contemporary audiences as an absentminded professor and star-crossed lover. Unlike the Time Traveller who experiments to seek knowledge, and George who “prefer[s] the future” and “[doesn’t] much care for the time [he] was born into,” Dr. Alexander Hartdegen of the 2002 film invents the time machine expressly for the purpose of returning to four years before to save the life of his fiancée, shot by a mugger. However, although Alex gains the power to time travel, his agency in the past is limited. Once he has
successfully pulled Emma away from that death, she is run over by a carriage. Alex grieves all over again, musing, “I could come back a thousand times. See her die a thousand ways. [...] I can’t find the answer here. Not here. Not now.” And so he continues into the future, asking for information on “temporal causality. Temporal paradox. [...] My question is, why can’t one change the past?” The Morlock mastermind at the end of his quest answers, “You built your time machine because of Emma’s death. If she had lived, it would never have existed. So how could you use your machine to go back to save her? You are the inescapable result of your tragedy.” This is the same kind of paradox as in Back to the Future—by changing the past, the protagonist removes the conditions that allow him to change the past.

Of course, the story could never end on such an unhappy note. Success in the popular film industry seems to require a constructive end. So through sudden treachery and violence, Alex kills the Morlock mastermind—who had returned the time machine to Alex, was allowing him to leave, and had been nothing but cordial up to this point—in order to save a female Eloi friend who would have been used to breed Morlocks. Alex then sabotages the time machine. As Alex and Mara escape, the time machine explodes behind them and destroys the Morlock colony with a wave of accelerated time—meaning that any Morlocks caught in it become skeletons and immediately disintegrate. Now that the villains are vanquished, Alex and Mara can begin a new life in a new future together. As with the 1960 movie, the destruction of the Morlocks cannot be complete—there must be many more colonies of Eloi and Morlocks. But these movies think of the whole future as a very small place. That the day-long trek the Time Traveller takes in the novel is only a short walk for George and Alex; that the Eloi look just like humans do now; and even the idea that the English language could survive unchanged 800,000 years into the future—all of these factors make the future a smaller and flimsier world than Wells’ vision.

Nevertheless, the 2002 remake was ambitious, and it does up the ante for questions of agency by its use of travelling in the past. When Alex and the Morlock mastermind agree that Alex cannot change the past, it would seem that the movie must endorse the theory of eternalism. Also commonly called the “block universe,” this theory asserts that time is immutable, that the decisions of both past and future are set in stone. This view shares the basic tenets of the philosophical doctrine of fatalism, which holds that all events are fated and unalterable. (This is
not to be confused with determinism, the doctrine that events are completely predetermined by previous chains of events, which eternalism does not necessarily guarantee.) Now if all events are fated and unalterable, the theory of eternalism threatens free will and agency, and so it is especially pertinent to a discussion of what time travel can allow a person to do. We know that the writers of the 2002 *Time Machine* may have had this theory in mind because it was popularised by Albert Einstein, with whom Alex mentions being in correspondence. The fact that the movie takes place in 1907, although Wells’ book was published in 1895, allows for the famous German theoretical physicist to publish his theory of special relativity in 1905. Not only Einstein’s physics but also his philosophy is invoked when it comes to the principles of eternalism. Interestingly, Wells himself shared the same idea of time, when the Time Traveller of his original novel describes a person’s “Four-Dimensional being” as “a fixed and unalterable thing” (61). Paul J. Nahin, a professor of Electrical and Computer Engineering at the University of New Hampshire, explains these principles in his critical volume *Time Machines*, which discusses a vast body of time travel fiction. He cites the *New Review* serialized edition of the *Time Machine*, where, in a paragraph cut from later editions, the Time Traveller mentions the ideas of “predestination and free-will,” regarding “a Rigid Universe filling space and time” (Nahin 163).

Now if a time traveller’s agency is constrained in this way, what does that leave him or her able to do? Nahin, a fierce advocate of the “block universe,” explains that the past cannot be changed, but it can be influenced or affected (270). This means that a time traveller could not (and did not) prevent the Black Plague, or start a new plague that history does not remember, but the traveller could have started the Black Plague all along (Nahin 270). This traveller also would not have a choice whether or not to do it; he or she would be fated to do it no matter what. In another example, if someone travelled to the past with the intent of autoinfanticide (a more direct version of the grandfather paradox, killing oneself as a baby), that person would be somehow thwarted—because obviously, since that person had to be born to exist, he or she did not succeed. Nahin lists examples of what might happen if one attempted the grandfather paradox or autoinfanticide: that the time traveller’s gun might jam, or that the time traveller might miss, etc (288ff). But why did the time traveller not succeed? Since the results of his or her efforts are not
now apparent, the time traveller must have failed. Unfortunately, this answer is not very satisfying. William J. Devlin, a critic of time travel in film, explains that to eliminate one’s own existence appear[s] to be impossible, given the causal continuity between the time traveller and the person who is killed. But, at the same time, the actions of murder and accidental killing are physically possible. [...] We thus have a dilemma. On the one hand, if we maintain that it is logically possible for [time travellers] to directly or indirectly terminate their younger selves, then we must account for why they physically cannot do it. (110, emphasis mine)

When faced with this sort of complaint, Nahin sidesteps the question: “He must fail because he did fail. To demand an accounting for the specific ‘why of failure’ before accepting the failure is as misguided as a stranded motorist refusing to believe his car won’t start until he knows why it won’t start” (289). Nahin’s belief in the sudden jamming of guns follows the same reasoning that forces Emma to die that night so Alex will invent the time machine. This kind of fate is perplexingly unscientific: it seems rather as if some rational deity must be keeping tabs on time travellers and designing various creative solutions to avoid paradox. Furthermore, if the traveller is allowed to visit the grandfather but not to kill him, this divine fate must weigh actions to decide which will create paradox and which will not. If the past can be affected but not changed, someone must decide which of the traveller’s choices is meaningful enough to prevent. Most important, if such a deity or fate must exist for time travel to make sense without paradox, what of free will? Nahin admits that “this particular problem of the unchangeability of past events [...] is directly related to the question of free will versus fatalism—that is, are humans the creators of the future, or are they mere fated puppets of destiny?” (49).

George, the traveller of the 1960 Time Machine, must have believed himself to be both a creator and a puppet. Now we must reconsider all my criticism of George’s character. If George believes in eternalism (of which no mention whatsoever is made in the movie, but which must be applicable there) his actions make sense. Of course he will abandon his own time as irredeemable: he has seen the future, and so knows now that it cannot and will not be redeemed. He has seen the wars, and so he knows he cannot prevent them. He knows he cannot save Filby
from dying in the war; it will happen in the future with the same surety as if it had happened already. George spoke to Filby’s son, who told him that George disappeared years ago, and so George knows he must disappear from his time. He knows that there are no meaningful changes he could make to his present—for if there were, he would have seen them. Instead, no matter what he does for his civilization, it will all come to an end in 1966. Yet even in the knowledge that he is fated to abandon his time, is George constrained? He does not seem to regret that he cannot change the twentieth century. Rather, he seems to have chosen to leave, just as certainly as eternalism suggests he cannot choose. J. Richard Gott, professor of astrophysical sciences at Princeton University, points out that even in eternalistic time travel stories the choices of the travellers may not seem forced: do time travellers “exercise free will? Well, it certainly appeared so to them. [...] They were always doing what they wanted to do, but their actions appear to have been fated” (19). So now the question becomes, why does George then believe he can make a difference in 802701? He has not looked into their future to see what he will accomplish. But he knows that by destroying the colony of Morlocks he has already made a great impact, and he is now responsible for it to the Eloi: he must help them learn how to live in a world without servants.

So now that we have a working definition of eternalism, the model of time that Einstein and Wells believed, what does the theory mean for modern time travel films? To tell the truth, it means very little. Eternalism is an extremely uncommon view in the time travel movie industry, because a world without agency is seen as depressing. In order for the protagonists to be

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2 In the two *Time Machine* films, this eternalistic “fate” appears to be a heartless entity that demands the deaths of Emma and Filby. However, to write off fatalism as a purely negative force might be premature. A much more recent movie that uses eternalism actually has fate interacting with the plot in a positive way: in *Harry Potter and the Prisoner of Azkaban* (2004), fate allows the hero to save his own life. In this story, the student wizard Harry Potter is protected from the evil fiends known as Dementors by a magic spell that takes the form of a stag. Harry believes that this life-saving aid was sent by his dead father. Soon afterwards, he travels back in time by use of a magic device called a “time-turner,” and goes to the place he thought he saw his father. There he realizes that it was his own future self that he saw, that he himself must conjure the magic stag, and does so. Here again free will is in question, because Harry could not have decided not to save himself and see what would happen. Yet why would Harry want to do that? It is clear that he must save himself, and his refusal to act in order to cause a paradox would be against all instincts of survival; and so once again free will seems to coexist or at least coincide with fate. (Although using time travel to save one’s own life seems logically and causally suspect, Nahin would approve of this movie, since he believes that a time traveller could introduce his or her own grandparents to each other [285].)
encouraged to make meaningful choices, eternalism must be outright denied.\textsuperscript{3} The Back to the Future films deny that time is immutable when at the conclusion of the series Emmett “Doc” Brown tells Marty and his girlfriend, “Your future hasn’t been written yet. No one’s has. Your future is whatever you make it. So make it a good one!” This is a positive attitude of free will encouraging right choices, giving the final movie a “feel-good” ending. Movies that deny fate must agree with William James, who wrote that in a universe of an “absolute block whose parts have no loose play, the pure plethora of necessary being with the oxygen of possibility all suffocated out of its lungs — there can be neither good nor bad, but one dead level of mere fate” (James 292; partially quoted in Nahin 151-152). For time travel movies to be popular, exciting, and positive, they must reject eternalism. Agency is a common element to successful and entertaining time travel films: it must be possible for the characters to fail, to make good or bad choices, and to have the power to change history itself.

Therefore most movies reject the theory of eternalism, and replace it with another theory — one that is not well respected in actual science. The vast majority of time travel films endorse the belief that “the past happens twice, once without the time traveler and then again with the time traveler. This is a view that few modern students of time travel accept” (Nahin 277). Despite academic disdain for it, this view of multiple timelines is more palatable to Hollywood’s target audience. In this theory, the primary timeline exists first, unsullied by any time travel. Events happen one way, but the time traveller can go back and change history, creating a second way for the events to happen. This is thought of as the course of time diverging into a new, secondary line. Time travel on top of that creates a tertiary timeline, and so on.

\begin{center}
\begin{tikzpicture}
\draw[->, thin, black] (0,0) -- (1.5,0);\node at (0,-0.2) {Past};\node at (1.5,-0.2) {Erased Future (Primary Timeline)};\draw[<-, thin, black] (1.5,0) -- (3,0);\node at (3,-0.2) {New Future (Secondary Timeline)};\end{tikzpicture}
\end{center}

Multiples timelines: time as an altered line

\textsuperscript{3} Fate as something to be thwarted appears most notably The Terminator (1984). In this action movie, Sarah Connor’s unborn son sends her a message from the future that encouragingly rejects eternalism: “The future is not set. There’s no fate but what we make for ourselves by our own will. You must be stronger than you imagine you can be. You must survive, or I will never exist.” This places tremendous responsibility on Sarah Connor: it isn’t up to fate, but up to her personally to ensure that her son is born to save humanity in the future. It is easy to see how this thrilling series would lose its excitement if fate determined its conclusion.
And actually, it is this concept that is assumed in the 2002 Time Machine movie: that the past can be changed. Although the movie has pretensions of eternalism, it denies that theory of time. Alex and the Morlock mastermind are wrong to think that Alex cannot change history. Alex did, in fact, save Emma. That she died soon after of a completely different cause does not negate that truth. In an eternalist universe, the manner of her death would be as fated as the fact that she died; that Alex could change past events demonstrates the 2002 Time Machine’s use of a theory of multiple timelines. And so the plot of the movie can be expanded as follows: In the original timeline, Emma died by gunshot; when Alex travelled into the past and prevented this, he created a new timeline in which she was run over by a carriage. Now this is peculiar, because once it was established that Alex could change the past, what could stop him from keeping Emma alive? The only answer is fate. This means the movie uses a strange hybrid of eternalism and multiple timelines. However, there is a bigger puzzle than fate in the 2002 Time Machine, and it is a question of memory.

Changing how Emma died creates a significantly different timeline. Unlike Marty McFly, who changed events before his life began, Alex has meddled directly with events in his own lifetime. This means that he should affect his memory of events—but in the world of the movie, he does not. If Alex’s memories were to change, the entire plot would shift, possibly as follows: The first time around, Alex feels responsible for Emma’s death because if he had not proposed to her in the park, they would not have been mugged. In the secondary timeline, Alex must find out the news that Emma missed their date in the park because she had been killed on the street. He cannot know she would have accepted his proposal; he cannot feel the same personal guilt and loss. But even supposing that this Alex was haunted enough by her death to be driven to build the time machine, he would have different memories than in the original timeline. He would not know Emma was destined to die in the park, but would perhaps assume she died on the way there. He might try to find her before she arrives on the street where she died: possibly he would meet her at her house. Now, if the pattern runs true, fate would intervene to kill her a third way, in order to force Alex always to build the time machine. This cycle, as it undergoes permutations, is an unending causal knot and the same kind of problem as the grandfather paradox, and this could make it impossible for Alex to realise that Emma will die no matter what he does. It is only
the fact that Alex’s memories remain unchanged that allows him to continue forward in time.

Stable memories, maintained through the traveller’s personal dissociation from history, present one of the worst logical flaws in time travel film, and one of the least remarked upon. Almost invariably, the time travellers remember the original rather than the changed past without explanation. I mentioned that in Back to the Future, Marty changes the events of history that occurred before he was born; however, such changes would still have a drastic effect on his own memories because of how they would affect his future. In the original timeline of 1985, George McFly’s cowardice spoils the happiness of his wife and children. When his son travels to 1955, Marty’s interference in the past causes his father to stand up to the bully Biff. Because of Marty, George becomes braver and more outgoing, and when Marty returns to 1985 his whole family situation has changed: everyone is well dressed, wealthier, and happier. But when the past is overwritten, why are Marty’s memories not overwritten? Nahin lists examples in both film and fiction of travellers who remember the original rather than the changed past (266). In his support of the “block universe” of eternalism, he writes that Marty’s influence in the past should have explained, rather than changed, the present. And so “the mall would always have had the name the Lone Pine Mall” (269), rather than only after Marty’s excursion into the past knocked down one of the trees the Twin Pine Mall was named after. From this statement, Nahin must believe that the beginning of the movie should have resembled the end, with Marty’s family happy and affluent. Showing the viewer the primary timeline, and allowing Marty to remember it, leaves the observant student of time travel with unanswered questions. Our Marty is not the Marty who grew up in a wealthy, happy home; who did, and where is he now? Or more generally, what about time travel in movies protects the traveller from changing? And what happens to the person who lives the changed life?

In order to answer these questions, I must bring the discussion back to agency. As already mentioned, if characters were not dissociated from the changes they made in their own pasts, causal paradoxes could occur. The theory of multiple timelines gives the traveller the ability to

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4 Few movies attempt to explain personal dissociation from history. An example of one that did is The Time Shifters (a 1999 TBS Superstation movie, USA title Thrill Seekers), where the time travel company exists within a “temporal bunker.” When changes to the past create vast changes in the present, the people in the bunker remain protected. And another great reconciliation of this paradox is in Frequency (2000) where the protagonist acquires multiple sets of memories, as if he mystically lived both lives.
change the past; but the ability to change the past and be personally disconnected from the effects those changes have upon history creates even more possibilities. And so the reason characters are personally dissociated from history is usually to give them more freedom to act—even the freedom to change past events that might interfere with their own memories. What if the futility of Alex’s mission were illustrated by fate stopping him from interfering with the events he remembers of that night, as would be consistent with eternalism? For instance, fate could somehow prevent him from leaving the time machine or reaching Emma at all. But then the movie would lose the impact of Emma’s second death, allowed for by multiple timelines and Alex’s dissociation from history. And if Marty’s family were happy and affluent to begin with, the movie would lose its surprising happy ending. There is a great deal of satisfaction in a traveller’s ability to change the past and see the changes he or she made—and in most movies, these are changes for the better. Time travel in popular film is often used to show human beings as having the agency to change their circumstances—even circumstances that have already happened—and create a bright new future for themselves and others.

However, denying eternalism leaves the discerning viewer with questions. It changes the rules of time travel. Eternalism assumes that a time traveller remains the same person despite the act of time travelling—that the younger version of oneself will grow into the older version. But in the theory of multiple timelines with personal dissociation, the time traveller is essentially a new person, with no obligation to stay consistent with past or future versions, with free will and complete range of agency. Yet how can this logically be possible? There is really only one solution: the many worlds theory of time travel. In these cases, the traveller is obviously a product of a different world than the one he or she has changed. Clifford A. Pickover, an author of many science, mathematics, and science fiction books, summarizes that a “new universe diverges from the old one, which follows the history the time traveler knew before going back in time. In other words, the time traveler creates an alternate, parallel universe by traveling back in time” (81), “thereby saving the original timeline from paradox” (247). Nahin calls these universes “different time tracks,” “a device to avoid paradoxes while still allowing for changing the past” (318). Now while the many worlds theory is the only possible solution to personal dissociation from history, movies almost always pretend it is not like that. Plenty of science
fiction literature involves these theories, but Nahin lists only a few movies that deal explicitly with time travel and many worlds, deciding that “filmmakers seem to have mostly overlooked the dramatic plot device of alternate time tracks” (303). Even though multiple universes are the only way to avoid paradox, the vast majority of movies make no mention of them, and in that way deny them.

It is easy to see why many worlds time travel theory is ignored in Hollywood: it undoes all the power the time traveller gains from being able to change the past. If Marty is able to change his family’s situation for the better in one world, in another world his family is still poor and squabbling. If Alex could save Emma in one universe, she would remain dead in his home universe. Or even if George, in the 1960 *Time Machine*, had prevented the wars, he would have prevented them in one world, but not in his home world. Some proponents of the theory believe that there are an infinite number of universes, one for every possible difference. Where there are multiple worlds, what does agency matter?5 Answering questions from his readers, Gott writes,

To someone hoping to find a time machine in order to go to the past to save a lost loved one, the most comforting thing I can say is that, as far as we understand today, this can only be accomplished if the many-worlds theory of quantum mechanics is true. And if that is true, then there is already a parallel universe in which your loved one is okay. That's because all the possible universes exist. Unfortunately, you are just in the wrong one. (16)

This situation does not empower the time traveller to change his or her circumstances, but rather makes any such change insignificant. And besides that problem, there also remains the

5 My favorite example of this is the 2006 crime thriller *Déjà Vu*. Here the multiple timelines theory with an extreme case of personal dissociation allows the hero to save a life and to continue a life that eternalism would doom to death. In this story, protagonist Doug Carlin uses a government computer program called “Snow White” to travel back in time four days to investigate a bombing and save a woman he falls in love with. In the process of saving Claire, the Doug from the future drives the bomb into the river and dies in its explosion. As Claire mourns him, the Doug from the past approaches her, and they drive off into the proverbial sunset. In this movie it is clear that the Doug of this new past is not going to become the Doug of the future who will save Claire and die in the explosion. That fact should constitute a causal paradox, but instead the audience is to assume that time goes on. Parallel universes would easily explain the two Dougs. However, this means that in one universe, Doug has no idea who Claire is or why she thinks he saved her. The Doug who did save her is dead, and in the universe he disappeared from, his coworkers must believe that sending him back in time killed him. On the one hand, there is a Doug whose love interest falls into his lap with no help from himself, and on the other hand there is the Doug who did all the work but dies without reward, and will be mourned in his home universe. This is all deeply unsatisfying!
perplexing question of what happened to the other universes’ versions of time travellers. When Marty returns to 1985, what happened to the Marty of this new future, the real member of the new family Marty meets? Or if Alex could save Emma in another world, would he be stealing her away from that world’s version of himself? Why does the time traveller not run into his or her doppelgänger? Could it be that this world’s version of the time traveller has also jumped to another universe? It would be dizzying and confusing to imagine an infinite domino chain of time travellers. Moreover, what happens to the world the travellers leave behind? Does another version of the time traveller from another world arrive? Or does the traveller simply abandon that timeline, leaving family and friends to wonder what happened to him or her? The Back to the Future series does explain away some of these questions with pseudo-scientific answers, saying there is only one world and that pasts and futures can be “erased,” but this does not account for the disconnect between Marty and the version of himself that his family knew.

In summary, the vast majority of time travel movies, though they require multiple timelines and many worlds theory to make sense, deny both. The examples mentioned (and the wealth of proof in time travel film that I have neither time nor space to catalogue) demonstrate that filmmakers do not want the viewer to consider causal paradoxes or logical problems. On the other hand, almost all movies disregard physics as well. It is easy to see why—there is a great corpus of books and articles by physics students and professors on time travel, but these are full of terms like “closed time-like curves” and “special global spacetime topology,” so that even a pared down summary of such intricate mathematical concepts would be beyond the understanding of many viewers. Furthermore, most stories must ignore science entirely in the interest of telling a story that is not about astronauts. In his short manual Time Travel, astronomy author John W. Macvey explains the real-life physics of time travel, and here we have to take a lot on faith: that it is possible for a craft to travel at velocities close to light; that it is possible to fuel such a craft; that reaching a black hole is possible; that travel into a black hole could be survived; that travel into a black hole could deposit a craft into the past; that the black hole would not deposit the craft into another part of the universe so far away that their time travel would not matter (139 et al). Every one of these suppositions is difficult to believe on its own, let alone taken altogether, so that the sum of these parts might as well be a fiction. To invent a
machine that can travel through time without such high velocities or black holes does not seem a great deal more outlandish. And so, in our suspension of disbelief, if we are able to ignore completely the laws of physics for a movie story, do the laws of causality still apply? This second kind of problem is often as difficult for the mind to grasp as the first. But it cannot be so easily cast away.

Although an audience agrees to suspend disbelief about the physical possibility of time travel, this faith only reaches so far. A paradox of causality, such as killing one’s own grandfather, halts the mind and confuses the viewer. It is poor storytelling. The sad truth is that “often one is compelled to admit that many of the awkward and paradoxical implications that so frequently arise are conveniently ignored by the genre writers or are glossed over with a veneer of pseudo-science” (Macvey 18-19). Such pseudo-science is often poor storytelling too, made of contrivances that suit the writers’ agendas, becoming a science fiction equivalent to the narrative trope of far-fetched coincidences. Characters in film occasionally talk about paradox in order to request the audience to suspend disbelief and pretend that it works anyway, but more often films remain silent about the matter and hope no one notices. Macvey lumps causality and physics together as being frequently abused. Yet he, at least, forgives these offences equally: “Competent science-fiction handling of time travel usually requires an author of no little talent and no little familiarity with the science involved, because of causality. Still, some of the most enjoyable ‘time travel’ stories would have lost much of their attraction had due accord been paid to causality or to relativistic effects” (171). I must admit that my own feelings are not so generous. I find stories in which “causality frequently gets short shrift or is blithely ignored” (Macvey 169) far less enjoyable than those few intelligent films that, even if they do not causally work out, at least ask questions about causality and the nature of time. Ultimately Hollywood agrees with Macvey: the science and even the logic of time travel must be disregarded in order to tell certain stories.

Clearly, time travel has a much greater storytelling purpose than to be a strictly logical plot device, especially in film. Plenty of literature pushes the logical boundaries of what time travel can facilitate. For instance, characters can become their own mothers, their own fathers, or both (Robert Heinlein, "—All You Zombies—"), or characters can meet and interact with many
versions of themselves from different times (David Gerrold, “The Man Who Folded Himself”). These kinds of experiments ask questions that most movies are uninterested in considering, as the science fiction buff is almost never the target audience of a Hollywood film. Instead, the film industry is concerned with characters that are easy to relate to and situations that are immediately accessible and entertaining. The audience’s reception is more at stake than accuracy to scientific principles. Consciously intellectual time travel films are few and far between, and are often less successful than movies that only use time travel as a plot device, enabling characters to act with greater agency. Everyone can understand the appeal of changing the past, because part of the human experience is to regret past choices or wonder how different actions could have brought about different possible outcomes; and so the ability to control time resonates with universal concerns. It is because of popular disregard for logic that time travel films can be so versatile, with a broad spectrum that contains all themes and all genres for all audiences.
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