The Arguments of David Lewis’ ‘The Paradoxes of Time Travel’ (1976)

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What follows is a presentation of the arguments of David Lewis’ ‘The Paradoxes of Time Travel’ (1976). Lewis’ paper was written for a professional audience and thus assumes certain specialized vocabulary, background knowledge, and style of argumentation unfamiliar to introductory philosophy students. The goal of the present essay is to present Lewis’ arguments in a way that makes them more accessible to such students.

However, this essay is not written in the format of a standard textbook presentation. In a standard textbook presentation, the arguments would be presented from the textbook author’s perspective—that is, from the perspective of someone who is merely relaying, without necessarily endorsing, the arguments of the original paper. This essay, by contrast, is simply written as if it is from Lewis’ perspective. Hence, where an ordinary textbook might say something like, “According to Lewis, time travel is possible”, this essay will simply say, “Time travel is possible”. By reducing the number of “voices” that stand between readers and the arguments, this style of presentation reduces cognitive load on readers, allowing them to engage more directly with the arguments.

What follows represents no more than my own (Dustin Locke’s) understanding of Lewis’ arguments. It is entirely possible that Lewis himself would not have, upon examination, endorse everything that I have to say in what follows. I have tried to the best of my abilities to relay the arguments of Lewis’ paper as I understand them. Readers who want to be sure they understand Lewis correctly must go to the source. Finally, it is my understanding that under U.S. copyright law, this document constitutes a transformative, non-profit, educational, and thus fair use of Lewis’ paper. Copyright holders with questions, comments, or concerns are encouraged to email me at dlocke@cmc.edu.
We don’t yet know if the physics of our universe allows for time travel. Some philosophers argue, however, that we don’t need to wait for the physics. According to these philosophers, time travel leads to certain ‘paradoxes’, and these paradoxes show us that time travel is impossible. In this essay, I’ll be arguing against these philosophers. In my view, the oddities of time travel are just that—oddities, not impossibilities.

Let’s start by defining time travel. To do so, let’s think first about ordinary travel—that is, travel through space. Travelling through space means just this: at one time, you’re at one location in space (e.g., your home), and at a later time, you’re at another location in space (e.g., your school). So what does it mean to travel through time? It seems to mean this: at one time, you’re at one location in time, and at a later time, you’re at a different location in time. Unfortunately, this definition won’t work. When I started writing this paragraph, it was 8:40 am. It’s now 8:45 am. So at one time (8:40 am), I was at one location in time (8:40 am), and at a later time (8:45 am), I was at a different location in time (8:45 am). But I’m no time traveler!

To see how we should define time travel, let’s consider a hypothetical example. Suppose that at 12:00 pm Tina gets into a machine, sets a dial for one hour into the future, and presses a button. For the next five minutes, Tina sits in the machine as it shakes and rattles and lights flash outside the windows. She then gets out of the machine and it’s 1:00 pm on the same day. This is an example of time travel into the future. But why does this count as time travel and me sitting typing for five minutes does not? The answer, I propose, is this: what makes Tina a time traveler is the discrepancy between the duration of her trip (5 minutes) on the one hand, and the difference between her departure time (12:00 pm) and her arrival time (1:00 pm) on the other. The duration of her trip was five minutes, but the difference between her departure time and arrival time was one hour. In other words, it took Tina five minutes to travel one hour into the future. I’m no time traveler because it took me exactly five minutes to go five minutes into the future.

This brings us to our first alleged paradox of time travel. I just defined time travel as there being a difference between (1) the duration of a trip and (2) the difference between the departure and arrival times of that trip. But this, some claim, is impossible. According to this objection, ‘duration’ just means the difference between departure time and arrival time. If ‘duration’ and ‘difference between departure and arrival time’ mean the same thing, then the two cannot be different, and so time travel, which I’ve defined as any case where the two are different, is impossible.

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1 Actually, on the definition of ‘time travel’ I offer below, we do know, from Einstein’s Theory of Special Relativity, that time travel into the future is not only possible but happening all the time. It is the possibility of time travel into the past that is far more controversial.

2 Two short stories by Robert Heinlein offer what in my view are logically consistent stories about time travel: ‘By His Bootstraps’ (1959) and ‘All you Zombies’ (1959)

3 This objection is raised by Donald C. Williams (1951) in his discussion of a passage from H. G. Wells’ novel The Time Machine, An Invention (1895).
This seems like a pretty big problem. But let’s go back to time-travelling Tina. When we say that it took Tina five minutes to go one hour into the future, what do we mean? We seem to mean something like this: while five minutes passed for Tina, one hour passed for the rest of the world. Suppose Tina had a watch on her wrist, time travelling along with her. When Tina pressed the button, her watch read ‘12:00 pm’, just like the clock on the wall outside of the machine. But when she got out of the machine, the watch on her wrist read ‘12:05 pm’, and the clock on the wall read ‘1:00 pm’. We can say that the watch on Tina’s wrist measures her personal time, while the clock on the wall measures external time. With this distinction, we can agree that ‘duration’ means the same thing as the difference between departure and arrival time, but insist that the departure and arrival times in question are the departure and arrival times in personal time. In other words, we can define time travel as any case where (1) the duration of a trip in personal time is different from (2) the difference between the arrival and departure times in external time.

This definition of time travel relies on a distinction between personal time and external time. It is tempting to understand this distinction as a distinction between two dimensions of time. Ordinarily, we think of space as having three dimensions (up/down, left/right, forward/backward), and time as having one dimension (future/past). Thus, we ordinarily think of space and time together as having four-dimensions. This means that from a given point in space and time—let’s say, right here right now—it takes four coordinates to specify something’s location in space and time. For example, my meeting in my colleague’s office tomorrow is, from right here right now, 7 meters to my left (which is across the hall), 20 meters behind me (which is down the hall), 0 meters above/below me (his office is on the same floor as mine), and 28 hours in the future (the meeting is tomorrow). If we distinguish between personal time and external time by saying that time has two dimensions, then we’ll say that the universe is not four-dimensional but five dimensional: three dimensions of space and two dimensions of time. That would mean that it would take five coordinates to specify something’s location in space and time.

I don’t think two-dimensional time is the right way to distinguish personal time from external time. Suppose a time traveler travels back to visit his earlier self. When he arrives in the past, he is in the past in external time but in the future in his personal time—that is, in personal time, he is some minutes older than when he left. So, if we distinguish between personal time and external time by saying that there are two dimensions of time, we’ll have to say that when he arrives, his location in time is now earlier in one dimension of time (external time) but later in the other dimension of time (personal time). The problem with this is that his earlier self—whom he is trying to visit—is at a location that is earlier in both dimensions of time. This is a problem because the only way that someone can visit someone else is to get sufficiently close to their location in all dimensions. For example, I can’t visit my colleague tomorrow just by going 7 meters to my left and not going 20 meters behind me. If I do that, I won’t be in my colleague’s office, I’ll be in the bathroom! The same goes for the time traveler: if time is two-

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4 See Jack Meiland (1974) and the initial chapters of Isaac Asimov (1955) for accounts of time travel in two-dimensional time.
dimensional, and the time traveler wants to visit his earlier self, it’s not enough for him to get sufficiently close to his earlier self in one dimension of time—he has to get sufficiently close in both dimensions of time.

None of this shows that it is impossible for time to be two-dimensional. All this shows is that using two dimensions of time to distinguish between personal and external time does not give us time travel as we ordinarily think of it. Fortunately, there’s a better way to understand the distinction between personal and external time. It will take a moment to explain.

Let’s go back to thinking of the universe, in the ordinary way, as four-dimensional: three dimensions of space and just one dimension of time. Now consider an object like the desk I’m sitting at. Ordinarily, we think of the desk as having just three dimensions: height, width, and depth. But really, the desk has four dimensions: height, width, depth, and duration. Its duration is from the time it was created (whenever that was) to the time of its destruction (whenever that will be).

What goes for desks goes for other things. You are a four-dimensional object: you have height, width, depth, and duration, which is from your birth until your death. Time travelers, too, would be four-dimensional objects. But they would look a little different from the rest of us. Recall that after Tina pressed the button on her time machine, it took her five minutes to travel one hour into the future. For illustrative purposes, let’s suppose that Tina’s friend, Tanya, sat outside the machine and simply waited around for an hour for Tina to arrive. While it takes time-travelling Tina just five minutes to go from 12:00 to 1:00, it takes Tanya the usual one hour. Both Tina and Tanya are four-dimensional objects: both have height, width, depth, and duration. The difference between them—the difference that makes Tina a time traveler and Tanya not—is that Tina is a bit more ‘stretched out’ in the time dimension than Tanya is. While Tanya’s heart beat perhaps 4,800 times between 12:00 and 1:00, Tina’s heart beat only around 400 times. And while about 1 trillion of the cells in Tanya’s body finished dividing between 12:00 and 1:00, only about 1/12 that number of cells finished dividing in Tina’s body.

We’re now in a position to better understand the distinction between personal time and external time. I propose that ‘personal time’ isn’t really a kind of time. There is only one dimension of time—external time. Personal time is just a matter of the pattern of events that together make-up a person—e.g., the beating of a heart, the thinking of thoughts, the dividing of cells, and so on. When this pattern occurs at the regular rate (e.g., about eighty heart beats per minute, about one trillion cell divisions per hour, and so on), we say that personal time is passing at the same rate as external time, and the person is not a time traveler. But when the pattern is stretched out (e.g., one heartbeat per minute, ten thousand cell divisions per hour, and so on), the person is time travelling into the future. The more ‘stretched out’ the pattern is, the ‘faster’ the person is travelling into the future.

So far, we’ve been dealing with just one kind of time travel—continuous time travel into the future. But what about instantaneous time travel into the future? Suppose that Gabby builds a time machine that works a bit
different from Tina’s. With Gabby’s machine, she sets the destination (e.g., one year from now), presses the start
button, and instantaneously she’s there! With a machine like this, we can’t say that the time traveler is ‘stretched
out’. She is not stretched out. Rather, she contains a gap. For simplicity, let’s suppose that Gabby is born, lives a
normal life until she is forty, instantaneously travels one year into the future, then lives out the rest of a normal
life. What sort of object does Gabby look like? Like other objects, Gabby is four-dimensional: she has height, width,
death, and duration. But Gabby, unlike ordinary objects, contains a gap—a gap between her earlier part and her
later part.

Now here’s a tricky question: why should we say that these two ‘person-parts’—or rather, ‘person-
stages’—make up the life of the same person? Why not say instead that when Gabby pushed the button to start
her machine, she was annihilated, and then a year later, another person, an exact duplicate of Gabby at the time
of her annihilation, was created? If one person-stage is a mere duplicate of another, that is not enough to make
them stages of the same person. To be the same person there must be a causal connection (note: ‘causal’, not
‘casual’) between the two, and this causal connection must be of the right sort. In my view, the most important
causal connections are those between a person’s thoughts, perceptions, memories, and other stuff going in their
brain. But it’s easier to illustrate my point with a different example. Suppose that just before Gabby presses the
button to depart, her heart beats, and, just after she arrives one year in the future, her blood flows. If the beating
of the heart just before departure causes the flowing of the blood one year in the future—and the rest of Gabby’s
bodily processes are causally connected in this way—then the later person-stage is a stage of Gabby, and Gabby is
a time traveler.

Finally, we can now see what it means to time travel into the past. Like time travel into the future, this
could happen instantaneously or at a certain rate. Here I’ll just consider instantaneous time travel into the past
and I’ll leave the other case as an exercise for the reader. Suppose that Paul is born, lives a normal life until he’s
thirty-five, then instantaneously travels one hundred years into the past, lives for forty more years (in the past),
then dies. Viewed chronologically—that is, chronologically according to ‘external time’—things look like this:

At a certain time in the past, let’s say in the year 1900, a thirty-five-year-old man seems to simply pop into
existence (perhaps inside of a machine that also seems to just pop into existence). The man lives for forty
years, then dies. Then, twenty-five years after this man dies, a child is born. The child’s parents name him
‘Paul’. Paul lives for thirty-five years, then gets into a time-travel machine set to send him one-hundred
years into the past. He presses a button on the time machine and disappears. At the time of his
disappearance, he exactly resembles the thirty-five-year old who seemed to just pop into existence one
hundred years earlier. The End.

5 See my (1976), where I discuss this issue at length.
We can represent this with a diagram. The black line represents the timeline of the universe and the red line represents the man’s life.

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<th>born</th>
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<td>1900</td>
<td>1940</td>
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In this story there are two person-stages. The earlier—that is, earlier in external time—stage consists of someone who starts out appearing to be thirty-five years of age and later dies at seventy-five years of age. The later stage consists of someone who starts out born in the usual way, then disappears in a time-travel machine when he is thirty-five. What links these two stages together into one person is a causal connection between them—for example, the beating of the heart in the thirty-five-year-old person just before disappearing in 2000 causes the flowing of blood in the thirty-five-year-old person who pops into existence in 1900. If all of the relevant events in the thirty-five-year-old who pops into existence in 1900 are caused by the events in the thirty-five-year-old just before he disappears in 2000, then the two stages are stages of the same person, and that person is a time traveler.

If people can time travel into the past, then certain strange cases are possible. For example, if people can travel back in time, then they can potentially visit, and perhaps even talk to, their earlier selves. Consider, for example, a time traveler who is born in 1920, lives until 1955, then gets in a time travel machine, travels to 1940, talks to his earlier self, then lives another forty years before dying in 1980. The diagram for this person’s life looks like this.

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From 1940 to 1955, this time traveler exists in two places at once. It is tempting to say that there are ‘two copies’ of the time traveler during that time. But I think it’s misleading to describe things that way. There are not ‘two copies’ of the person—there is just the one person. In 1945, for example, this one person exists both, in one place, as a twenty-five year-old person and, in another place, as a forty year-old person.
Now, when I say that this one person is in ‘two places’ in 1945, I don’t necessarily mean these two places are very far from one another—after all, he might be having a conversation with himself, and so he, as a twenty-five year-old, might be standing right next to his forty year-old self. This might sound very odd: how can one person be in two places at the same time? My answer: by being a time traveler!

As I’ve noted, time travel into the past requires reverse causation—that is, effects that come before their causes. This, you will recall, is what unites the two person-stages into one person, and thus what makes the person a time traveler. **This brings us to our second alleged paradox of time travel.** Some say that effects by definition come after their causes. According to this view, the idea of an effect coming before its cause is like the idea of a round square. Squares, by definition, have angles and sides, and so are not round. Similarly, these people argue, effects, by definition, come after their causes, and so cannot come before their causes. I don’t have much to say about this argument, other than to deny the claim on which it rests. Why should effects be defined as coming before their causes? Elsewhere, I have argued for my own definitions of ‘cause’ and ‘effect’. But the issue is complicated, and we don’t have the space to get into it here. All I want to say here is this: yes, ordinarily, effects come after their causes. But we should be hesitant to build what’s ordinary into the definition. For example, ordinarily, US Presidents are men. Indeed, all U.S. Presidents have been men. But a U.S. President isn’t by definition a man—if a woman were elected according to the rules and sworn-in according to the standard procedure, then she would be U.S. President. I see no reason to treat ‘cause’ and ‘effect’ differently. Yes, effects ordinarily come after their causes—perhaps in every case we know of so far. But that doesn’t mean we should **define** these terms in such a way that effects cannot come before their causes.

**This bring us to our third alleged paradox of time travel.** Some people are happy to grant that effects do not by definition come after their causes. Still, they insist, if reverse causation is possible, then so are **causal loops,** and causal loops, they say, are impossible. We can use our example above—our example of a time traveler having a conversation with his younger self—to illustrate the idea of a causal loop.

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6 See my (1973).
Ira is born in 1920. In 1940, when Ira is twenty years old, he is visited by someone who looks like an older version of himself. This person tells Ira how to build a time machine. After the person leaves, Ira gets to work building a time machine. Fifteen years later, in 1955, Ira finally finishes the machine. He then uses it to travel back in time fifteen years—to 1940—to teach his earlier self how to build a time machine. Indeed, the person who visited Ira twenty years earlier was Ira. Here we have a causal loop. Just after he’s visited by his later self, Ira knows how to build a time machine. He uses this knowledge to build a time machine. He then uses the time machine to visit his earlier self and teach him how to build a time machine.

Causal loops like the one in this story are odd, but why should we think they are impossible? Notice that each part of a causal loop has an explanation. Ira’s knowing how to build a time travel machine is explained by his being visited by his later self and his being visited by his later self is explained by his knowing how to build a time travel machine.

‘Still,’ some might ask, ‘where did the knowledge of how to build a time machine come from in the first time around the loop?’ The answer to this is simple: there is no first, second, third, etc. time around the loop. There’s just the loop. It’s tempting to think of this loop as somehow getting started, and then happening ‘over and over again’. Don’t do that. The loop happens just once. When telling the story, when we get back to a part of the loop that we have already told—e.g., when we say, ‘Then Ira visits his younger self’—we’re back at the part of the story that we’ve already told. Thus, if we continue telling the story, we’ll just be retelling the same story; we won’t be telling the story of the ‘second time around the loop’, since there is no second time around the loop. The story of Ira going around the loop can be told many times, but Ira goes around the loop only once.

The objector may rephrase their question: ‘No, I mean, why does the entire loop exist at all?’ This question, I admit, has no answer: each part of the loop has an explanation, but the entire loop has no explanation. But so what? It’s strange, yes, but not impossible. Most of us already grant that there are things that exist without explanation—be it God, the Big Bang, the existence of the entire four-dimensional universe, or the (random) decay of a radioactive atom. If you believe one or more of these things exists without explanation, then you don’t think inexplicable things are impossible.

Finally, the most famous alleged paradox of time travel is the so-called Grandfather Paradox. Suppose that Tim’s grandfather, who died before Tim was born, was a weapons dealer who was indirectly responsible for thousands of innocent deaths. After reading about his grandfather, Tim comes to despise him. Tim then gains access to a time machine and forms a plan: he’ll go back in time to 1907 and kill his grandfather when he (Tim’s grandfather) was just a boy. Can Tim do this?

On the one hand, it seems that Tim can kill his grandfather in 1907. There is nothing stopping him from time traveling back in time to 1907 and acquiring a gun and all the training he needs to kill his grandfather.
On the other hand, it appears that Tim cannot kill his grandfather in 1907. If Tim does kill his grandfather in 1907, when his grandfather is just a boy, then his grandfather will never meet and sleep with his grandmother, and thus Tim will never be born.

Putting these two thoughts together, it seems that if time travel is possible, then Tim both can and cannot kill his grandfather in 1907. But that’s a contradiction. If time travel really does lead to this contradiction, then, since contradictions are impossible, time travel must be impossible.

Philosophers have offered various responses to the Grandfather Paradox. Some just accept the paradox as it is, concluding that time travel is impossible. Others insist that when one travels back in time, one creates a new ‘branch’ of time, where things happen differently from how they happened in one’s own branch. These philosophers reject the argument for ‘Tim cannot kill his grandfather’, saying that Tim can kill his grandfather as long as he does so in a new branch. I don’t think this is a particularly good response to the Grandfather Paradox. If this is how time travel works, it’s not clear what the point would be. If, by travelling back in time, Tim creates a new branch of time, then, when Tim kills his grandfather in this new branch, Tim has not at all affected his own branch, and thus his grandfather survives in his own branch. What is the point of travelling back in time and killing his grandfather in a new branch? Perhaps there is still a point. I won’t pursue the matter further here. Rather, I’ll show that there is a way to resolve the alleged paradox without resorting to the idea of branching time.

The apparent paradox is created, I think, by a subtle ‘trick’ of language. The trick has to do with the slippery meaning of the word ‘can’. This word is what linguists call context sensitive. To see what I mean, consider a word that everyone agrees is context sensitive: ‘here’. What ‘here’ refers to depends on the context in which it is being used. If I say, ‘There’s a desk here,’ and you reply, ‘There’s no desk here,’ we aren’t necessarily contradicting each other. Perhaps we are talking on the phone. Where I am, there’s a desk, so what I said is true. Where you are, there’s no desk, so what you said is also true. We’re not contradicting each other because what the word ‘here’ refers to depends on the context in which the word is being used—when used in my context, it refers to where I am; when used in your context, it refers to where you are. The word ‘tall’ works in a similar way. Suppose I’m at the horse races and learn that a certain jockey is 5’ 9”. ‘Wow,’ I say, ‘5’ 9” is tall.’ Meanwhile you are at a basketball game. When you learn that a certain player is 5’ 9” tall, you reply ‘Wow, 5’ 9” is not tall.’ We haven’t contradicted one another, because the meaning of the word ‘tall’ depends on the context in which the word is being used.

The word ‘can’ is also context sensitive. Suppose you’re in a physics class and the professor is holding up a tennis ball explaining that, no matter how much force you put on this ball, you cannot accelerate it to greater than the speed of light. ‘That means that no matter how much force you put on this ball,’ she says, ‘you cannot get it from Los Angeles to New York in less than .0132 seconds.’ ‘If I put enough force on it, can I get it there in less than .2 seconds?’ you ask. ‘Yes, you can get a ball from Los Angeles to New York in less than .2 seconds.’ Meanwhile, I’m
on the phone with the United States Postal Service. ‘How fast can I get a tennis ball from Los Angeles to New York?’ I ask. ‘Pretty fast,’ the representative responds. ‘Can I get it there in less than .2 seconds?’ ‘No,’ he laughs, ‘you cannot get a ball from Los Angeles to New York in less than .2 seconds’. Did the USPS guy contradict your physics professor? No, because the word ‘can’ is context sensitive. In the context of the physics classroom, ‘can’ will often mean something like is consistent with the laws of physics, whereas in the context of a conversation with someone from USPS, ‘can’ will often mean something like is consistent with USPS shipping timetables.

In general, ‘can’ means something like is consistent with all the stuff that we in this conversation are at this moment taking as given. In the physics classroom, you’re often taking the laws of physics as given but not much else, unless told to do so. In a conversation with someone from USPS, you’re taking the USPS shipping timetables as given (although you may not know what they are). A ball travelling from Los Angeles to New York in under .2 seconds is consistent with the former but not the latter. Hence, if you’re in the former context and you say, ‘A ball can get from Los Angeles to New York in less than .2 seconds,’ then what you have said is true, but if you’re in the latter context and you utter the same sentence, then what you’ve said is false, for the sentence has changed in meaning.

Let’s return to the Grandfather Paradox. When proponents of the Paradox argue that Tim can kill his grandfather, they encourage us to take as given certain things but not others. They encourage us, in particular, to take as given the fact that Tim is an excellent shot, his rifle is in good working condition, and his grandfather is mere feet away. They encourage us to forget, however, that Tim’s grandfather will later meet and sleep with his grandmother, who will then give birth to Tim’s mother, who will then give birth to Tim. When we’re in a conversational context where we’re taking as given the former things but not the latter things, and someone says, ‘Tim can kill his grandfather’, what they’ve said is true—Tim’s killing his grandfather is consistent with everything we in that conversation are at that moment taking for granted. But then, moments later, the proponents of the Paradox remind us of the stuff about Tim’s grandfather later meeting his grandmother and so on, ultimately leading to Tim’s birth. Now the conversational context has shifted—now we’re taking for granted, not just that Tim is an excellent shot and so on, but that Tim’s grandfather has not yet met Tim’s grandmother and so on. In this new conversational context, when someone says, ‘Tim cannot kill his grandfather’, what they say is also true—Tim’s killing his grandfather is not consistent with everything we are now, in this new conversational context, taking as given. Because the conversational context has shifted, the meaning of ‘can’ has shifted, and thus, despite appearances, the new statement (‘Tim cannot kill his grandfather’) does not contradict the old statement (‘Tim can kill his grandfather’). There’s no paradox; there’s just a subtle trick of language.

It may be tempting at this point to ask: but really, can Tim kill his grandfather in 1907 or not? Don’t succumb to this temptation. You are assuming that there is some absolute meaning of the word ‘can’ and you are trying to ask the question in that absolute sense. But there is no absolute meaning of ‘can’. Consider again the analogy with ‘here’. Standing in my office, I say, ‘There is a desk here.’ You, standing in the park say, ‘There is no
We know how both of these sentences are true. Now a third person, understanding all of this, comes along and says, ‘But really, is there a desk here or not?!’ This person is confused. They think they are asking a sensible question but they are not.

This analysis of the Grandfather Paradox helps us to see what’s wrong with the common idea that there must be some mysterious force of the universe that keeps Tim’s finger from pulling the trigger. There’s no need for such a force. When we say ‘Tim cannot kill his grandfather’, and what we say is true, it’s not because there is some mysterious force stopping him. It’s just that his killing his grandfather is not consistent with what we are at that moment taking as given—i.e., that Tim exists and that his grandfather has yet to meet his grandmother and so on. So, given what we are already taking for granted, we know that Tim won’t kill his grandfather. (Indeed Tim, if he’s thought this through, should also know this.) But there’s no reason to think that there is something special stopping him—it’s far more likely that Tim fails to kill his grandfather just because, due to some totally ordinary but somewhat rare circumstance, Tim doesn’t manage to kill his grandfather.

Closely related to the question of whether Tim can kill his grandfather is the question of whether Tim can change the past. My answer is an unequivocal ‘no’. To see why, consider what it means for something to change. The color of one’s hair changes when one’s hair is at one time one color, and at a later time a different color. In general, something changes when it is one way at one time and a different way at a different time. What then could it mean for the past to change? It would have to mean that the past—say, 1907—was one way at one time, and then was a different way at a later time. But, unlike your hair, 1907 doesn’t exist at different times. 1907 exists only at 1907.

1907, I just said, cannot be changed. But it can be affected. To change something is to make it different from what it once was; to affect something is roughly to make it different from what it otherwise would have been. A time traveler can affect 1907—that is, they can make things happen in 1907 that would otherwise not have happened—but they cannot change 1907—that is, they cannot make things happen in 1907 that didn’t happen in 1907. Think of it this way: if a time traveler will go to and affect 1907, then a time traveler already has arrived in and affected 1907. And if a time traveler won’t go to and affect 1907, then a time traveler has already not arrived in and affected 1907. To think otherwise is to think that 1907 could be changed from what it once was to what it will be. But 1907 exists only at 1907 and so it cannot be one way at one time and a different way at another. Hence, time travelers cannot make 1907 different from what it once was. But those who time travel to 1907, just like those who got there in the usual way, can make 1907 different from what it otherwise would have been.

Works Cited


