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A consistent time travel story

I have argued that *Back to the Future* is inconsistent, assuming it is interpreted as an ordinary-time travel story, rather than a super-time story or a world-travel story.

Not every time travel story is inconsistent, however. Good examples of consistent time travel stories include the films [Twelve Monkeys](#) and [The Time Traveler's Wife](#). Here is another example of a consistent time travel story:

On the eve of your 21st birthday, an elderly stranger shows up at your doorstep and explains how to build a time machine. It takes you several years of hard work, but you eventually manage to construct a working version of the machine. You use it to lead a fascinating life of time travel. Towards the end of your life you use your time machine to travel to the eve of your 21st birthday and explain to your younger self how to build a time machine.

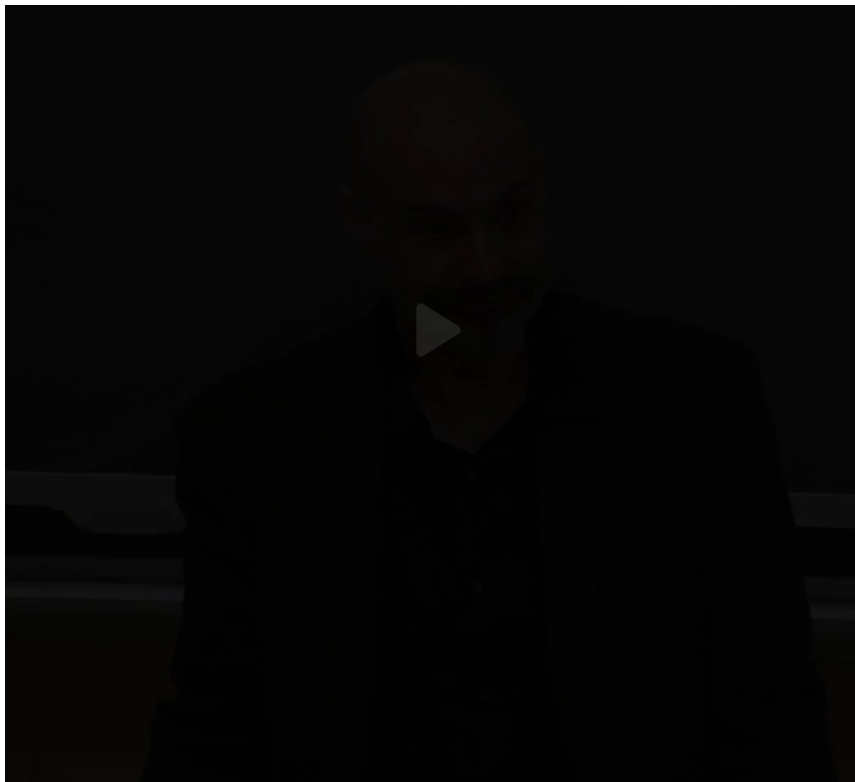
According to this narrative, there are causal loops. (For instance: your building a time machine late in life is a cause of your traveling back in time to give your younger self information about how to build a time machine, which is a cause of your building a time machine late in life.)

That means that the scenario depicted by the story is weird. But weirdness is not the same as logical inconsistency, and what's at issue here is whether the story is logically consistent.

In spite of its causal loops, there is nothing logically inconsistent about our story: there is no time t and proposition p such that at one point in the narrative we are told that p is the case at t , and at a different point in the narrative we are told that p is not the case at t .

Question: Isn't that 'Consistent' Case Paradoxical?

It seems to be consistent, but there might be some weirdness associated with it, and maybe that's weirdness that gets



that gets

in the way with a physical
theory that

makes room for time travel.

So it's an important
conclusion.

It's a valuable lesson.

End of transcript. Skip to the
start.



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Problem 1

2/2 points (ungraded)

Determine whether each of the following stories can be interpreted as consistent (ordinary-time, one-world) time travel stories:

You are an avid gambler. You are at the races, and decide to bet all your savings on Easy Goer. Tragically, Master Charlie wins the race, by a nose. Because of your recklessness, you end up leading a life of hardship. Towards the end of your life, however, you catch a lucky break: an old aunt bequeathes you a time machine.

You travel back to the time in which you had placed the disastrous bet, and head straight for the tracks. You see your younger self standing in line, eagerly awaiting the chance to bet on Easy Goer. You approach him and whisper into his ear "Master Charlie". Your younger self is receptive, and bets his money on Master Charlie. He wins big, and spends the rest of his life in luxury and style.

Inconsistent ▼

✓ Answer: Inconsistent

Explanation

The narrative cannot be interpreted as a consistent time travel story because it makes contradictory claims about your life after the race. Towards the beginning of the narrative we are told that you live in poverty after the race. Towards the end of the narrative we are told that you live in luxury after the race.

Pixit, the innovative pig-sitting app, is the latest start-up to disrupt the markets. You travel back in time to a time when *Pixit* shares were cheap and buy as many of them as you can. You place the share certificates in a box and bury the box in an empty lot—the empty lot where you know your home will be built a few years later. You then travel back to the present day, run to your back yard and dig up the chest. The chest is a little moldy, but the certificates are still there!

Consistent ▼

✓ Answer: Consistent

Explanation

The narrative is consistent: there is no time t and proposition p such that we are told that p is the case at t at one point in the narrative, and told that p is not the case at t at a different point in the narrative.

One way to bring this out is to add some detail to the narrative. Perhaps your interest in *Pixit* was originally piqued by a news story describing an "angel investor" who seemed to appear out of nowhere, and believed in the company when nobody else would. The investor bought shares by selling a collection of gold coins—a collection not unlike the one you see sitting on your bookshelf...

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❗ Answers are displayed within the problem

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