



## Time Travel to Make Better Decisions

*Time is the school in which we learn,*

*Time is the fire in which we burn.*

-Delmore Schwartz

Marty McFly: "What about all that talk about screwing up future events? The space-time continuum?"

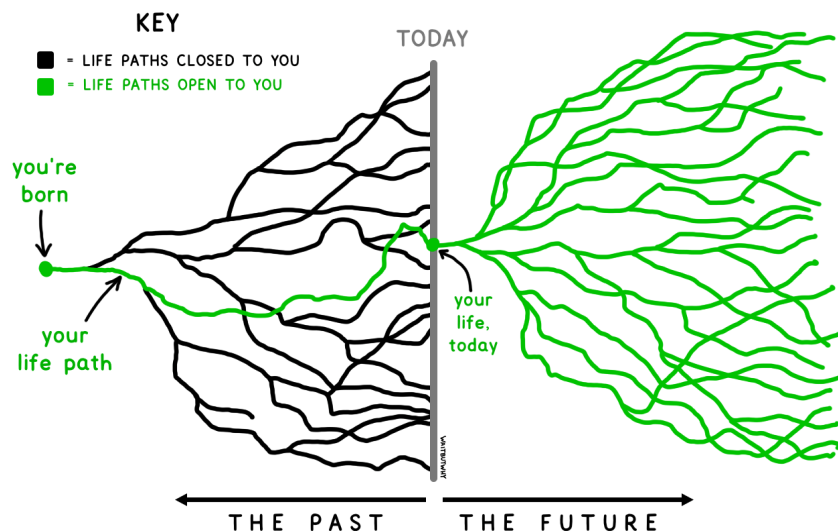
Dr. Emmett Brown: "Well, I figured, what the hell."

**Every time we contemplate a decision, whether big or small, we are attempting to see into the future.** In other words, the act of scrutinizing options and possible outcomes is a form of mental time travel. Can we see how this decision will play out? What are the odds we make the right decision? And, the single most important (and emotional) question: *will I regret this decision?!?* If I could somehow communicate with my future (and ostensibly more knowledgeable) self, what would I want to know now to make the right decision today? The idea of mental time travel is especially relevant to investment decisions, a topic that I'll return to later in this essay.

Despite wanting to make better decisions and predictions, **we are constantly stymied by the fact that the future is largely unknowable and becomes more opaque the farther into it we attempt to peer.** We know from [complex adaptive systems](#) that there are too many factors, agents, and relationships to know precise details of the future state of the Universe with any meaningful degree of accuracy – chaos ensures we're always betting against the house. As such, we all have rather spotty decision-making track records. And yet, we tend to think that we're pretty good decision makers, largely thanks to our brain's serial overconfidence (perhaps our survival as a species is predicated on having a heightened sense of control, however false, over the unknown). In reality, luck factors into our successes far more prominently than our brain wants to admit.

One of the biggest inhibitors of good decision making is our brain's inability to see things as nonlinear. We tend to think in an analog, incremental way, but the world itself is dominated by exponentials, power laws, and compounding – all of which we struggle to conceptualize. From an evolutionary perspective, linear thinking is likely a lot more energy efficient and less mentally overwhelming, which would be important for quick decision making to ensure day-by-day survival, as was required of our human ancestors for hundreds of thousands of years. Under such challenging circumstances, linear thinking apparently yielded a decent enough solution in a sufficient number of cases to let us wade through life (while the slower, more cerebrally-intensive thinkers were perhaps subject to a higher number of predation events). For those of us fortunate enough to exist in the modern world, however, we have the luxury (or perhaps the imperative) to become more cognizant of our path through time and the myriad possibilities/probabilities encompassed by our endlessly branching future.

The path we took through time to get to the present moment and which we will follow into the future is only one of an infinite number of possibilities. This visual from [Tim Urban](#) is a great illustration of the alternative paths we didn't follow to reach the present moment and the vast (and constantly evolving) array of future paths. Existentially, our narrow slice of the multiverse is the only path we can travel simply because it *is* the path we travel.



One of my favorite movie genres concerns time travel and the speed of time passing. These movies are a trove of insight into decision making, regret, and the folly of trying to change the past or predict the future. **I think our cultural fascination with time travel boils down to our own regret over how little we confront the actual present, and, more specifically, how we often fail to be fully aware and present when we make decisions. What I've learned is that having a fascination with the present moment might be the only way to make better decisions about the future.** As Russell Ackoff puts it: *"I have no interest in forecasting the future, only in creating it by acting appropriately in the present."*

### **Time Travel Genres and What They Teach Us**

I group movies involving time travel and/or relativity into five key categories. In the following discussion, I tried to limit my references to some obvious examples where knowing the genre wouldn't be too much of a plot spoiler. This necessitated omission of some great examples, which I have instead listed at the end of this essay.

**1. The devastating consequences of general relativity and speeding up/slowing down the passage of time:** One of our biggest fears is that we'll blink and life will be over. Indeed, our time on Earth isn't even measurable in the timescale of the Universe. When movies highlight the idea that years can pass in mere moments, there is a special kind of discomfort that sweeps over us. Perhaps the most well-known example of this idea is *Interstellar*. And, *Flight of the Navigator* is a sentimental favorite from my youth. **There are two ways to slow down time relative to an external reference: you can be near a large source of gravity, or you can travel at near the speed of light.** In our paper [Redefining Margin of Safety](#), we discussed this concept as it relates to company strategy and investing decisions: *Ultimately, what highly nimble companies are able to do is act in a way that slows down time relative to their competitors. The world is moving and changing at an accelerating pace, but with a Quality company operating in a long-duration, slow-growth industry dynamic, it's possible to operate in a bubble in which time appears to move more slowly than in the frantic world around you. Imagine two paths connecting two points in time: one short path, where time is normal, and one long path, where time is stretched and slowed. Because time moves slower on the longer, time-dilated path, you have more time to react and adapt relative to your competition on the direct route, so when you both arrive [in the future], you have out-thought and out-innovated your competition.*

This particular sub-genre of time travel also highlights an important element of decision making: the often futile attempt to beat entropy. **Every time we make a decision, we are putting in energy and effort in an attempt to fight the chaos of the unpredictable future.** Entropy is the slow cooling of the Universe from high information to low information. As things become more disordered and contain less information, entropy rises. This phenomenon is also what gives a vector to how we experience the passage of time (e.g., instead of experiencing the future before the past). As we wrote in *Redefining Margin of Safety*, “*Much of what society has done is to try to create temporary order despite the long-arching trend toward disorder in the Universe. We build buildings, cities, communities and companies – we take organized energy and reshape it into all sorts of literal and figurative structures. But, it’s only a temporary, local increase in order, and, in the long run, the information value is lost and entropy rises. The trend toward more disorder means that predicting the future is very hard, if not impossible.*” On the plus side, we’ve got a lot of time before the Universe fully cools (so much so that our existence will register as a miniscule blip on the timeline), and we have lots of free energy to play around with in the meantime. However, if we can heighten our awareness of the awesome and persistent power of entropy, it can help us be more aware and appreciative of the present. **The more details we take in – the more we learn in each given moment – the slower we perceive the passage of time. This present awareness is the greatest advantage we can achieve in decision making.**

2. Time traveling teams, solo do-overs, and unintended consequences: This popular premise typically involves two or more agents (either working together or unsuspecting of the other) or a single person attempting to change something that happened in the past or set up a better future. **This storyline exemplifies our desire to repair past regrets and avoid future ones – sometimes it works, but only with an escalating set of moral dilemmas.** The *Back to the Future* trilogy is a well-known example of team time travel. For solo time travel, *The Butterfly Effect* is a good example. Often, the protagonist seeks to redress regrets, save someone, or, the most common of all, win over their romantic interest. Relationships gone wrong might be the primary reason that people write time travel scripts! Trying to resolve unintended consequences tends to be the most popular theme for independent time travel films (often with a common writer/director), which offer wonderful glimpses into someone’s heart and past regrets.

There are a wide array of plot points/mechanisms for shifting in time that manifest in this and other time travel sub-genres. Frequently, some yet-to-be-discovered genius invents a time machine. Or, sometimes, time travel is all in someone’s mind. And then there are the odd ones, such as a camera that can snap a photo of tomorrow or a portal hidden in a bathroom (surprisingly, I am aware of at least two examples of the latter!). And, there is always the chance the Universe is just messing with someone.

**The dilemma of unintended consequences reminds us of just how densely interconnected our world is. Even small changes can have vastly compounding effects that ripple forward through time, thwarting our attempts to predict the future and emphasizing the importance of being aware and intentional regarding our actions in the present.**

3. Time loops: *Groundhog Day* with Bill Murray is the epitome of this gem of time travel movies. **In life, we often make the same decisions over and over leading to the same bad outcomes. To redeem ourselves and get unstuck from the loop requires a lightbulb moment of insight.** It’s a sad reality of life that, while we can easily spot the flaws in other people’s reasoning, we are terrible at seeing our own biases and blind spots, leading to years, or even a lifetime, of lost time while we try to sort out what’s

wrong. If only we could short-circuit the loop! **Sometimes the answer lies in asking better questions, but, typically, it's about seeing what's right in front of us – something obvious we fail to notice**, like the fish that doesn't know what [water](#) is. The key to becoming unstuck is usually a fresh perspective on a situation from a completely different angle (e.g., what we try to achieve in our [team discussions](#)). This idea is similar to Galilean relativity – you cannot fully grasp a system within which you are embedded; therefore, you need to put yourself outside of the system.

4. The mental fog of time travel: This group of movies tends to have more of a sci-fi element. It's tricky to give examples here without giving too much away, but *12 Monkeys* comes to mind as a good one. When actions in the past can impact the future, shifting through time can be very disorienting. I view this as **analogous to the mental gymnastics we often must go through in decision making or when we analyze our decisions, which can be uncomfortable and confusing. Could we have done things differently?** If so, how? If the alternative required greater courage/risk, would we have? Was there information we missed? Sometimes it feels like we have memories of different branches through time even though we only traveled one of them. While we can always benefit from identifying previous mistakes, **an obsession with the past can detract from our awareness of the present and our focus on what is within our power to change, leading to missed opportunities to craft a better future.** Pattern recognition can be dangerous in a complex, unpredictable world, where we are likely to frequently encounter emergent behavior rather than just history repeating. As such, it's important to fight the urge to rely on the past, even though doing so can create a feeling of instability.

5. Seeing your future self and messages from the future: This sub-genre is a good example of our desire to fast forward to the future to see how today's decisions might play out. There is of course the *Terminator* series, and a special case of this idea is represented by Tom Hanks' character in *Big*, where a chance encounter with an arcade fortune telling machine transforms him into an adult overnight. This plot type reminds me of the **'work backward' concept** popular at Amazon: when they have an idea for a new product/service, they write the press release for its intended launch and then work backward to today when they are starting to develop it, **asking the question: How did we get there from here? So, picture the world as you want it to be 10, 50, 100 years from now. Then ask: What step should I take in the present to put me on the path to making that future a reality?** As we discussed in [Complexity Investing](#):

*"It's important to distinguish between long-term intent or desires and shorter-term plans or actions. Intentions are the things that DON'T change...Plans tend to be linear and shorter term, but complex systems are nonlinear, placing a premium on the ability to adapt our short-term plans to a changing landscape. Intent should serve as a northstar throughout the winding paths life takes us down...To begin to move toward a new intention requires a plan and a step toward that plan. To take the step, we need a lot of confidence – after all, the path of least resistance is often to do exactly what we did yesterday. However, life acts like a huge noise field where it's incredibly difficult to discern signal – there is an excess of possibilities out there. This is why mindfulness is so central to our framework. Identifying and avoiding cognitive bias helps us see and accept mistakes as we make them. An understanding of complexity crafts our ability to be humble. The 'noisy' nature of life (and complex systems) often results in our initial step of confidence being slightly off course. Because we get off course, it's important to balance confidence with the humility to admit mistakes and course correct...once a better direction becomes clearer."*

### **Better Decisions through Time Manipulation and Mental Time Travel**

Poet David Whyte asks the following questions: ***"What would it be like to start a conversation with myself that my future self would thank me for? What would it be like to become the saintly***

**ancestor of my future happiness?”** Oftentimes it’s not the answers we are looking for, but the right questions to ask. How can we converse with ourselves today in a way that we ask better questions and arrive at better decisions? There are a few exercises that I find helpful, including a few specific conversations we have at NZS Capital when we are analyzing companies.

Slow down time: Try and spot the figurative gravity wells and light speed hacks that **allow your clock’s gears to turn more slowly than others’, which will create a huge advantage in decision making.** This entails figuring out how you should be spending your time so that you are asking the right questions, gleaning the most useful information, and giving yourself time to analyze, digest, and connect dots. If reading the news or scrolling social media is not causing you to ask better questions, or if it’s pulling you out of your awareness of the present, then stop – it’s needlessly spinning your gears and speeding up time. Remember to **focus on intentions.** Focus on your awareness of the present and being extremely intentional about what you want to accomplish, and you will find you can achieve more in less time.

Focus on what won’t change: We often reference this concept from Jeff Bezos who famously said his primary focus at Amazon was on what won’t change: people will always want more selection, lower prices, and faster delivery. Rather than focus on the competition, Amazon tried to continue to improve on these three dynamics of their ecommerce business. While we spend a lot of our time desiring to know what will change when we make decisions, often inverting the problem and seeing what is unlikely to change is more useful. So, fast forward through time or imagine an array of different multiverses. **What remains invariant despite changing time/space and the unpredictable future paths?**

Perform pre-mortems: This exercise helps you **determine what could go wrong before it happens.** A pre-mortem is a way to try and picture yourself in the future and work backward to decisions made today. It’s similar in concept to Jeff Bezos’ regret minimization [framework](#): *“I wanted to project myself forward to age 80 and say, ‘Okay, now I’m looking back on my life. I want to have minimized the number of regrets I have.’”* We do pre-mortems for every stock we consider investing in by transporting ourselves into the future and trying to guess at the answers in these scenarios: 1) We didn’t buy enough. Why? What questions/data would have clarified our understanding of the potential? And, 2) We should not have bought it. Why did we? What did we miss about the range of outcomes, the degree of predictions forced by the valuation, etc.? Similarly, if we are contemplating selling a stock, we try to answer these questions as our future selves: 1) We regretted selling it and ended up buying it back at a higher price. Why? And, 2) We never regretted selling. What negatives were there that we were right about? Often, the question isn’t about buying or selling outright, but getting to the truth of what position size an investment should be. We use specific metrics from our [Complexity Investing paper](#) to answer these pre-mortem questions in the categories of Quality, Growth, and Context (chapter 3) and Resilient or Optionality position sizes (chapter 6).

This exercise may sound simplistic and obvious, but **the key is to make time travel feel as real as possible to fully experience the thoughts and emotions of your future self.** Making mistakes in investing (and life in general) is personal and painful – it’s a gut punch of regret. So, we try to literally vault ourselves into the future and see what it feels like to be selling a stock at a major loss – it’s a horrible feeling, how could we have avoided it? **The answer can only be in the present. What information are we missing today, or, more likely, what questions are we failing to ask?** What is it about the range of outcomes that we need to better grasp? Imagine you have an actual time machine to travel five years into the future. Imagine which path you took through time to get there and which ones you avoided.



## **The Importance of Awareness**

One of the most freeing concepts that can improve decision making is: it's worthless to dwell on regret because there's no going back. Whatever happened, happened, and it's now permanently out of your control. So, take a few moments to learn what you can about the factors that influenced your decision and then put it out of your mind. **There are thousands of factors that can play into decisions over which you have no control.** Neuroscientist Robert Sapolsky shares some devastatingly great insights on this concept in his book *Behave*. Here is a passage listing just a few of the unconscious influences on decision making: *“blood glucose levels; the socioeconomic status of your family of birth; a concussive head injury; sleep quality and quantity; prenatal environment; stress and glucocorticoid levels; whether you're in pain; if you have Parkinson's disease and which medication you've been prescribed; perinatal hypoxia; your Dopamine D4 receptor gene variant; if you have had a stroke in your frontal cortex; if you suffered childhood abuse; how much cognitive load you've borne in the last few minutes; your MAO-A gene variant; if you're infected with a particular parasite; if you have the gene for Huntington's disease; lead levels in your tap water when you were a kid; if you live in an individualist or collectivist culture; if you're a heterosexual male and there's an attractive woman around; if you've been smelling the sweat of someone who is frightened. On and on. Of all the stances of mitigated free will, the one that assigns aptitude to biology and effort to free will, or impulse to biology and resisting to free will, is the most pernicious and destructive.”* (p. 597-598). So, **focus on what you can control – your awareness of the present – to create a better backdrop for decision making, and then try not to regret decisions as soon as they are relegated to the immutable past.**

The idea of cultivating awareness and how it goes beyond plain old thinking is an important concept that's vastly too complex to address herein. We touched on mindfulness in chapter 5 of [Complexity Investing](#), and, as a starting point, I might suggest Sam Harris' Waking Up app. The following is from **Loch Kelly's book (which I highly recommend) *Shift into Freedom***:

*“One of the most important developments in human evolution is the ability to think. However, an even more important development is the ability to grow beyond thinking. To do this, we need to discover the intelligence that's inherent in awareness itself. It is important to note that growing beyond thinking is not a regressive, dumb, or irrational state. Consider the innocence of a young child at an adult party, who asks the group of adults what they would do in this situation: 'Imagine you are surrounded by hungry tigers with a cliff behind you. What would you do?' Each adult comes up with a different creative solution, but the boy just shakes his head. So they turn to him and ask, 'What would you do?' The boy smiles and says, 'I'd simply stop imagining.’”*

## **Conclusion**

Time travel movies are full of paradoxes. For example, the classic causal loop: a future event is caused by a change in the past, which causes the same future event. Or, there's the grandfather paradox: altering the past means you might not be the same person, who in the future goes back to alter the past (literally interpreted, if you travel back in time to kill your grandfather, you would never be born to travel back in time to kill your grandfather, therefore you would be born, etc.). Marty McFly learned this paradox firsthand when he accidentally stopped his parents from dating in high school. **Making decisions is also a paradox: we desire to see into a future that we can never truly know.** It would be nice if reading (or, in my case, writing) this essay were sufficient to erase the longing to travel back in time to fix decisions and instantly transport forward to see the future. I'm afraid these paradoxes cannot be resolved. Instead, I hope that I've made the case for **cultivating awareness in the present, which should ease the dual burdens of decision remorse and wanting to know the unknowable/predict the unpredictable.** While we can harness deliberate and intentional mental time travel to our advantage, as with my example

of the pre-mortem, our obsession with the impossible is just a mental trap that drains energy and shifts our attention away from the present. And, **the actual present is our only window of opportunity to make decisions that positively shape the future.** By cultivating awareness, trying to slow down time, and finding the right questions to ask (e.g., working backward, what *won't* change, pre-mortem analysis) we can attempt to **create a landscape for decision making that allows us to see good fortune when it comes knocking** and take the next incremental step toward a better future. Since we can never know the future, perhaps it's best to take Doc Brown's advice: "*Roads? Where We're Going, We Don't Need Roads.*"

Select time travel movies by category:

[Warning: even knowing a movie involves time travel can be a spoiler, so feel free to skip this section! The following are just a few selected highlights of time travel flicks I've seen, but if you have a favorite not listed here, send it my way.]

1. The devastating consequences of general relativity and speeding up/slowing down the passage of time: *Time Trap, Interstellar, Flight of the Navigator*
2. Time traveling teams, solo do-overs, and unintended consequences: Teams: *Project Almanac, Primer, Time Freak, Frequently Asked Questions About Time Travel, Time Lapse*; Solo do-overs: *The Butterfly Effect, About Time, 41*. Misc: *Midnight in Paris*
3. Time loops: *Groundhog Day, The Map of Tiny Perfect Things, Source Code, Palm Springs, The Endless, The Infinite Man*
4. The mental fog of time travel: *12 Monkeys, Donnie Darko, Timecrimes, Your Name (2016)*
5. Seeing your future self and messages from the future: *Terminator series, Looper, Big*
6. The popcorn classics of my youth: *The Bill & Ted* and *Back to the Future* trilogies