

## **Timeline**

by Rodge

My acceptance onto the project team came after a contentious interview. I kept arguing with the lead student researcher regarding the implications of time travel. He was stuck on the physics of the matter whereas I kept bringing up the risks of a person being out of his/her timeline. I kept saying that just because the physics might allow it, that doesn't mean it should be done. Fortunately, the professor in charge of the team said that was exactly the attitude we needed on the team and brought me on.

The argument was not completely hypothetical for the interview. The project is an ongoing "multi-disciplinary" comprehensive investigation into the scientific and social implications of time travel. Yes, that's right, I do attend a liberal arts college.

The project is a collaboration across many departments in the college. Students cycle on and off the project each semester, and each semester one of the senior members stays on and does an honors thesis out of the research and is the lead student researcher for that semester. This spring semester the lead researcher is a physics major, hence the focus on the scientific aspect in the interview. The current professor overseeing the project (Philosophy department chair of all people) was concerned about the science centric tilt of the team and added two new positions.

I became the team's risk analyst. Basically, that means that I will be looking for and documenting potential paradoxes (paradoxi? paradise? No, that's not definitely not right.). In short, I'll spend a semester arguing with nerds about what can FUBAR a timeline. I am uniquely qualified to argue about what can go wrong!

I should clarify, when I wrote that I would be arguing with nerds, you might have gotten the impression that I am separate from the nerds. Nothing could be further from

the truth, I'm an actuarial student and spent the previous summer in an internship counting dead people. Ok, technically I was performing a mortality study for a life insurance company. It doesn't get much nerdier than that. Yup, I'm a nerd, but just not one of the cool hard science nerds. I'm pretty low on the nerd totem pole.

The other new position went to Jenifer. Jen transferred to the college this semester so we didn't know much about her, but she wowed the interviewers by getting into the scientific details of time travel while also raising social implications of people time traveling. The philosophy professor loved her and brought her on to cover the social, economic, and political implications of humans bouncing around a timeline.

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Our first team meeting was today at 3:14, its confirmed we're nerds, in the science building. Brad, the senior lead, spent most of the time talking about the experiments he wanted to run.

“We are going to combine chaos theory with our timeline research. By perturbing a chaotic system in a very minor random way, we will create new parallel timelines. It becomes a quantum model of timelines - there is a timeline with Schrodinger's cat alive and a parallel line with it dead.”

“Oh dear, poor kitty,” Jen piped in, “can we make sure that the cat is alive in our timeline?”

Brad rolled his eyes, “We're not going to use cats, that's just a physics teaching concept...”

“That's a relief, society does not approve of dead cats in boxes, and frankly live cats are not fond of being boxed either.” I chuckled as Jen trolled Brad. It will be a fun

semester at this rate.

“No, that’s the point of our experiment. The system will be tweaked in such a minor way that we’ll be able to measure it, but it won’t have any impact.”

At this point I could tell Jen will be a bad influence on me, as I interjected, “Wait, in a chaotic system, isn’t the ‘teaching concept’ that a butterfly flaps its wings in China and there is a hurricane in Honduras?”

“Oh dear, poor Hondurans.”

“Sure, that is the theory, but there are a lot more butterflies flapping their wings than there are hurricanes, so the probability of our specific butterfly causing a hurricane is incredibly remote, right Mr. Actuary?”

He had me there. “I’m just making sure we understand all the risks.”

In that moment, Jen switched from teasing Brad to completely serious lecturer. Shaking her head, she stated, “No, the future is immutable. What has already happened will always have happened and all events caused by the past will happen. You are thinking that right now is the end of a string that keeps growing longer leaving the past trailing behind us. You think that we can change the direction of the string by our actions. That concept is incompatible with time travel. Time travel would tie that string in knots with impossibilities. No, you need to think of the timeline as a pipe, where we are in the middle of it and our past and future are already determined, if not known.

Physics itself suggests that if you had a powerful enough computer and could input ALL parameters you could model the future perfectly. Well, that much knowledge of our current situation is obviously impossible to obtain, but it all exists in our pipeline.”

After picking up my jaw from the floor, I reassessed my opinion of Jen. I now

could see what she showed in the interview to get her on the team. Brad was not to be deterred though.

“That is the point of a chaotic system though, you can’t predict the future.”

“You are correct that you can’t predict the future, but you shouldn’t extrapolate the inability to predict the future to mean that the future is not completely determined.”

Brad’s patience clearly was at the end of his time string. “Well, I bet you are wrong.”

“I bet my life that I am correct.” Jen whispered, barely loud enough for me to hear.

“And that is why we are running these experiments this semester.”

“Yes, yes it is.” While Jen seemed sad with that comment, Brad was happy to end the meeting in agreement.

Thinking I could cheer Jen up a bit, I asked to accompany her to the cafeteria for an early dinner. We walked outside into one of those miserable January midwestern snow storms. Wrapping my insufficient coat around myself and tucking my chin as far down as possible, I grumbled about freezing my ears off because I had forgotten my hat.

Thinking that a real gentlemen would offer his coat to the lady at his side, I looked over at Jen. Her coat was unzipped and blowing open in the gusty breeze. She was staring up into the sky, laughing with her mouth open running erratically trying to catch the falling flakes. She spun around in circles like a two year old seeing her first snow. Finally, dizzy, she collapsed onto the ground flapping her arms and legs.

“Do you think there’s enough snow to make snow angels?” She asked.

“I think all the snow angels have gone someplace warmer because its too darn

cold out here for them. This is crazy, haven't you ever seen snow before?"

"No, never real snow, just pictures."

"Really? Where are you from?"

"No, when." She replied.

"What, when?"

"Why, what?"

"Who why?" I could play along.

"How?" Is the question you should ask." She was laughing uproariously now.

I could only shake my head. "Come on," I held out my hand to grasp her frozen hand, and pulling her up, "you're delirious from hypothermia. We need to get you out of those wet clothes."

"Ewww, don't even think about it mister. That's never happening with us."

And, thusly, I was friend zoned before our first date.

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From that auspicious beginning, our friendship progressed with the semester. I wish I could say the same for the project. Brad and Josh, our token freshman protégé, continued their experiments. The thing with running quantum experiments is that to us non-physics majors the results were nondescript.

Jen worked on a paper listing specific requirements and limitations that would be necessary for society to function in a world with time travel. She encouraged me to brainstorm what could destroy the world as we knew it. All in all, a pleasant way of passing the semester.

Brad and Jen avoided rehashing the debate on the nature of time and its flexibility,

or lack thereof. But as April rolled in, and Brad's thesis and our reports were coming due, the tensions ratcheted up. It was at another 3:14 team meeting that Brad updated the group on his results to date.

“So far, the testing has not shown indications of multiple timelines being created from the perturbations. Of course, that doesn't mean that they are not created, but rather that we just can't measure them.” With that he pointedly looked at Jen to see if she would take the opportunity to accept her null hypothesis. She showed remarkable restraint.

Josh was impatient and thought having negative results would hurt the project and kill any chances of a published paper. “Maybe the quantum changes we are making are too small to measure. Could we do something bigger? You know, maybe put together a chemical reaction that in one state would be stable, but in another would be highly exothermic.”

We all stared at him. “You want to bomb a parallel timeline?” I had to ask.

“Not a big bomb, but enough that would change the observer allowing us to measure the impact. It would only be in that single timeline where it exploded. The alternative timeline would be perfectly fine.”

I looked over at Jen, and could tell she was getting worked up. Sure enough, when she started talking, it was in her quiet and intense voice. “What if there is only one timeline? What if your bomb blows the observer right out of the time pipe? That is a lose-lose experiment. If you are right that there are multiple timelines and you can change the future, then your experiment will harm somebody's future. If the future is immutable, then whatever will happen has already been determined and your experiment

will demonstrate nothing.”

I wanted to defuse the bomb that was building in Jen before it harmed a poor freshman observer. “How about finding a way to test whether the future can be changed?”

Brad was ready to challenge that idea. “That would be great if we had a time traveler who came back from the future with a report of all that will happen in this so called time pipe. But we don’t have that option, and therefore Jen would argue that any future that happens, regardless of what happens, always was going to happen.”

Jen nodded her head, “Congrats, you finally understand. That’s why time travel is so difficult, and we need a risk analyst.” She looked at me, and I felt insufficient to the task.

She continued, “Suppose, I told you that the Cubs were set to win the World Series in the seventh game, but a fan got in the way of a foul ball that was to be caught for the last out. Now this possibility is pretty crazy, so you wouldn’t believe me, until I told you that the Cubs would sweep the Pirates in the NLDS, and they do. Then I say they will beat the Royals in five on a walk off homer, and they do. Now, I have developed some street cred as a regular Nostradamus. When the Cubs lose the sixth game forcing a game seven with the Tigers, you are amazed, and also happen to be a huge Cubs fan. So, what do you do? You buy a scalped ticket, and lurk in the second row along the third base. Then, in the top of the ninth inning with two outs, a foul ball comes your way. It looks like the Cubs third baseman will get to it, but a stupid fan with a mitt is sticking his arm out. Just when it is about to go horribly wrong, you pull the fan back, the third baseman makes the catch, and ‘The Cubs win the Series, the Cubs win the

Series!'

But, as it turns out, my future father is a huge Tigers fan. So, instead of going to bed with my future mother and conceiving future and present me, he sits in his chair drinking beer with a horrible feeling that it shouldn't have ended that way.

But now, I don't exist, and not existing, I can't tell you what will happen and you don't save the Cubs. Wait, that means that there is a celebration to be had in the marital bed, and I'm back to existing. You start to see my problem?

So, you say, my coming back in time creates a new timeline, set back by say twenty years from my original timeline. So, I am an orphan in this timeline. My parents happen to be eight and ten, and I clearly don't have a birth certificate. You think the government has problems with illegal immigrants, well Physics is even worse. Because, not only did I come back into an existence from nothing, but I also brought a bar of gold. Now, people grow old, die, and eventually decompose back into dirt so maybe a person could just pop into existence, but a bar of gold is a valuable element and elements can't be created out of nothing. If they could, we'd be awash in gold, platinum and any other rare element our future time traveling selves could bring back. We'd have amazing technologies, we'd have knowledge, we would change the future for the better. But we are not. We're stuck on the same damn path to destruction we have been on since time immemorial.

"I know the future is immutable because we are exactly where we are right fucking now, and this is the future from 10 minutes, 10 days, and 10 years ago.

Oh yeah, and the Cubs never win the World Series, EVER!"

Brad recovered the quickest. "You joined a time travel research project, knowing



that time travel was impossible? Why bother?"

"No, you don't get it, I'm not saying it is impossible. I am saying all time travel that will happen has already happened, and the results of that time travel are exactly what you see in front of you. A traveler can't change the future, just like you can't change the past, all a traveler can do is play her role the same as she always has and always will."

It was time to defuse this meeting, so I excused Jen and myself. We left the building for our customary walk to the cafeteria. The sun beat down on us from a clear blue sky. Jen turned her face up to the sky soaking in the spring rays.

"Its beautiful you know." She took off her shoes and socks to walk in the grass barefoot. "You don't realize how amazing it is unless you've been without. That's your problem now."

I laughed at that. "It was a bad winter sure, but you seemed to like the snow the first time you saw it!"

Ensnared in her own world, she didn't pay any attention to me, but just continued on reflecting. "The seasons, they're great. The tulips coming up, cherry and crab apple trees flowering." She breathed deeply. "You know, I was wondering if I would be allergic. I almost wish I was allergic."

We walked through the quad and stopped on top of a small bridge over a man made pond with a fountain bubbling water down a rock wall into the pond. Colorful Koi swam lazily below us hoping for some food.

Jen started laughing, "There you go, they're here for you." She was pointing at a bunch of geese and other birds pecking around the grass.

"What?"

“It’s a pair a ducks, you should add them to your report.”

“Um, I don’t think a bad pun is appropriate for a serious academic paper.”

“Well, you should at least put a picture of them on the cover page. Future readers will appreciate it I’m sure.”

When Jen was in one of her reflective happy go-lucky moods, it was always fun. In order to encourage it, I just had to ask, “So, Miss Futurist Historian, what do you see in the cards for us, certainly you weren’t serious about the Cubs never winning a World Series!”

“Sorry about that, it was cruel to break it to you like that.”

“How do you even know I am a Cubs fan?” I had been since first seeing them with my mother in the friendly confines of Wrigley for my first ball game.

“You have that long suffering wounded look.”

“Actually, that look only started when you ‘Ewwed’ at the prospect of us getting naked together, I was perfectly happy before that.”

“Trust me, you’ll thank me for that.”

“Hmph, not sure about that. Do you have any other cheerful insights, my fully dressed oracle?”

She thought a bit, “Well, I guess it won’t hurt to tell you now. The good news is I foresee you actually seeing a woman naked in your future, and you will be very happy about it.”

“Wow, way to go out on a limb there.”

“Let’s see, there’s more bad news than good I’m afraid. This won’t be around for very long.” She gestured widely.

“What, the campus?”

“The park, the grass, pond, flowers. Students sunbathing. Depletion of the ozone will make being in the sun a thing of the past. Global warming and extreme temps take care of much of the rest. The Cubs will only have about 15 years of additional futurity before baseball becomes a thing of the past altogether. Humanity was increasingly forced into the protected indoors. They can’t afford to spend limited natural resources on luxuries.” As intelligent as she was, Jen had major problems keeping her tenses consistent.

“Wow, you’re just Debbie Downer all of a sudden.”

“Its okay, people adapt. Science finds ways, not soon enough to prevent, but in time to facilitate survival. Every generation has always told the next generation about how much better it was back in their day. Youth, not knowing anything different, shrug it off as reminiscing old folk and continue on with their life.”

“Maybe I shouldn’t have asked you.”

“Oh, but for you, I see good things in your immediate future. I see a cold beer, good company, and dancing, definitely some awkward actuary dancing.”

I had to laugh; I don’t dance, but I did have the awkward part of the prediction nailed. “I question your magic 8 ball, but it sounds like we’re headed to Barr’s Bar rather than the cafeteria.”

“Not ‘we’ Kimosabi, I’m staying here and lying in the sun!”

And you know, Jen was right. At Barr’s Bar, I had a cold beer, or three, met some friends, and had a great conversation with Rhonda. I’m embarrassed to admit there was even some awkward actuary dancing. I initially objected, but even I know you don’t let a

pretty girl go on the dancer floor alone if you want to continue your night with her.

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Two weeks later after our last final exam, and finally handing in our respective papers on the project, Jen and I were again walking across the quad. Rain clouds threatened a spring storm. The heavy air seemed to weigh on Jen as we walked.

“So, now that we are done with the semester, what are your plans, Ms. Futurist?” I liked to kid her about her soothsaying since the time she successfully predicted my successful evening with Rhonda. But, as much as I prodded, that had been the last of her predictions.

“I don’t know. The future may be immutable, but after tonight my future is unknown.”

“Well, you’ll be back for fall semester right?”

“No, I will be moving on.”

I was surprised how much that hurt me. I felt like we had really connected this past semester. I had hoped that there would be a future for us, even if it was as fully clothed friends. “I’m sad to hear that Jen. I hardly know you, and now you’re moving on without me? It seems like you know more about me, my past and my future, than I know myself. Yet, I know nothing about you.”

“Unfortunately, you never could know me as much as we both would have liked. I’m happy we had this semester.”

“So, tell me something about yourself, are you going back to family now?”

“No, I had to leave my mother to come here, and I don’t think I can go back to her. I hadn’t known my father. He died during my birth.”

“What? That doesn’t make any sense. Child birth isn’t generally risky for the father.”

“We were driving to the hospital, my mother was in labor and worried we wouldn’t make it. The weather is not good, and we are t-boned by another car. The paramedics are able to treat my mother and assist in delivering me, but, well, I’m sorry.”

She looked at me with tears running down her cheeks as fat drops of rain fell. We hugged. She whispered, “What will be, has been already. Now, go have yourself a great date. I heard that the third date is an important one.”

Jenifer turned around, and as the rain fell, I watched my daughter walk away.