

How to



Live Safely in a



Science Fictional



Universe



a novel by  
Charles Yu



ALSO BY CHARLES YU

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*Third Class Superhero*

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How to Live Safely in a  
Science Fictional Universe

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How to  
Live  
Safely  
in a  
Science  
Fictional  
Universe

CHARLES YU

  
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This is a work of fiction. Names, characters, places, and incidents either are the product of the author's imagination or are used fictitiously. Any resemblance to actual persons, living or dead, events, or locales is entirely coincidental.

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First Edition

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*To my mother and father, again. And again.*

*And to Michelle, as ever.*

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*We are never intimately conscious  
anything but a particular perception.  
man is a bundle or collection  
different perceptions which succeed one  
another with an inconceivable rapidity  
and are in perpetual flux and  
movement.*

—DAVID HUME

*Time does not flow.  
Other times are just special cases  
of other universes.*

—DAVID DEUTSCH

*Everything we are  
is  
at every moment  
alive in us.*

—ARTHUR MILLER

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**ENTER THE FOLLOWING PERSONAL DATA:**

(CURRENT CHRONOLOGICAL AGE)

(DESIRED AGE)

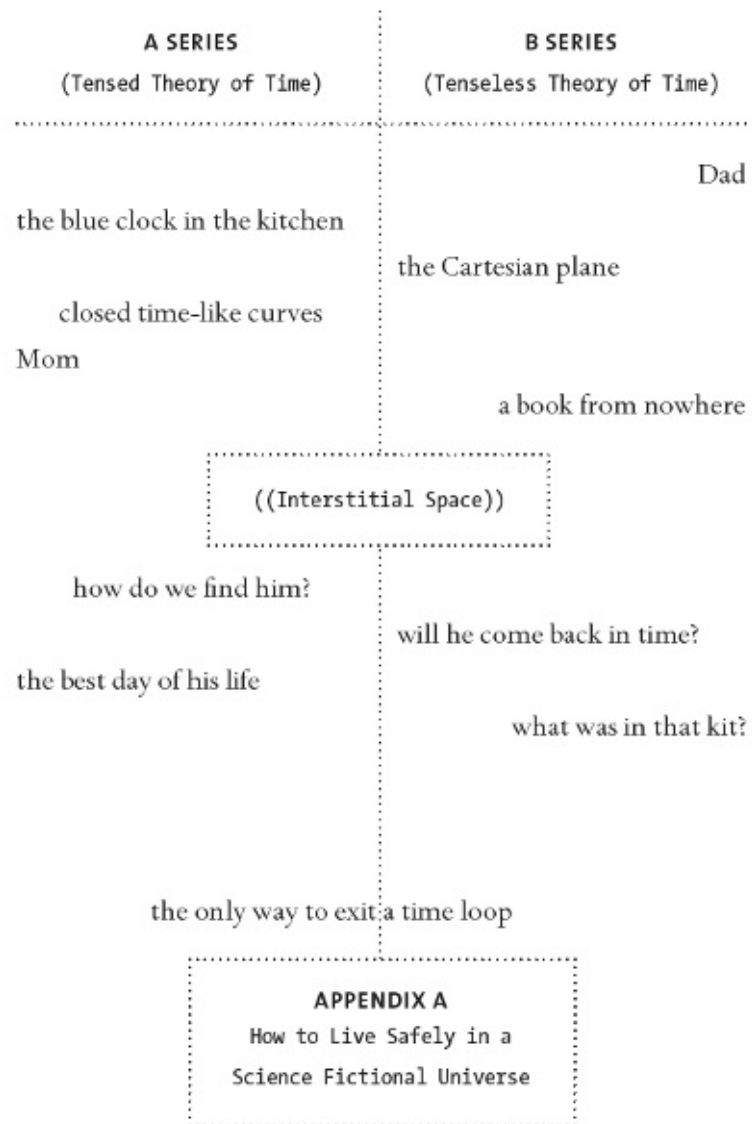
(AGE YOU WERE WHEN YOU LAST SAW YOUR FATHER)

Computing.

Trajectory locked.



# CHRONODIEGETICAL SCHEMATIC



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When it happens, this is what happens: I shoot myself.

Not, you know, my self self. I shoot my future self. He steps out of a time machine introduces himself as Charles Yu. What else am I supposed to do? I kill him. I kill my own future.

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About the Author







There is just enough space inside here for one person to live indefinitely, or at least that's what the operation manual says. *User can survive inside the TM-31 Recreational Time Travel Device, in isolation, for an indefinite period of time.*

I am not totally sure what that means. Maybe it doesn't actually mean anything, which would be fine, which would be okay by me, because that's what I've been doing: living here, indefinitely. The Tense Operator has been set to Present-Indefinite for I don't know how long—some time now—and although I still pick up the occasional job from Dispatch, they seem to come less frequently these days and so, when I'm not working, I like to wedge the gearshift in P-I and just sort of cruise.

My gums hurt. It's hard to focus. There must be some kind of internal time distortion effect in here, because when I look at myself in the little mirror above my sink, what I see is my father's face, my face turning into his. I am beginning to feel how the man looked, especially how he looked on those nights he came home so tired he couldn't even make it through dinner without nodding off, sitting there with his bowl of soup cooling in front of him, a rich pork-and-winter-melon-saturated broth that, moment by moment, was losing—or giving up—its tiny quantum of heat into the vast average temperature of the universe.

The base model TM-31 runs on state-of-the-art chronodiegetical technology: a six-cylinder grammar drive built on a quad-core physics engine, which features an applied temporalinguistics architecture allowing for free-form navigation within a rendered environment, such as, for instance, a story space and, in particular, a science fiction universe.

Or, as Mom used to say: **it's a box**. You get into it. You push some buttons. It takes you to other places, different times. Hit this switch for the past, pull up that lever for the future. You get out and hope the world has changed. Or at least maybe you have.

I don't get out much these days. At least I have a dog, sort of. He was retconned out of some space western. It was the usual deal: hero, on his way up, has a trusty canine sidekick, then hero gets famous and important and all of that and by the time season two rolls around, hero doesn't feel like sharing the spotlight anymore, not with a scruffy-looking mutt. So they put the little guy in a trash pod and send him off.

I found him just as he was about to drift into a black hole. He had a face like soft clay, and haunches that were bald in spots where he'd been chewing off his own fur. I don't think anyone has ever been as happy to see anything as this dog was to see me. He licked my face and that was that. I asked him what he wanted his name to be. He didn't say anything so I named him Ed.

The smell of Ed is pretty powerful in here, but I'm okay with that. He's a good dog, sleeps a lot, sometimes licks his paw to comfort himself. Doesn't need food or water. I'm pretty sure he doesn't even know that he doesn't exist. Ed is just this weird ontological entity that produces unconditional slobbery loyal affection. Superfluous. Gratuitous. He must violate some kind of conservation law. Something from nothing: all of this saliva. And, I guess, love. Love from the abandoned heart of a nonexistent dog.

Because I work in the time travel industry, everyone assumes I must be a scientist. Which is sort of correct. I was studying for my master's in applied science fiction—I wanted to be a structural engineer like my father—and then the whole situation with Mom got worse, and with my dad missing I had to do what made sense, and then things got even worse, and then the job came along, and I took it.

Now I fix time machines for a living.

To be more specific, I am a certified network technician for T-Class personal-use chronogrammatical vehicles, and an approved independent affiliate contractor for Time Warner Time, which owns and operates this universe as a spatio-temporal structure and entertainment complex zoned for retail, commercial, and residential use. The job is pretty chill for the most part, although right this moment I'm not loving it because I think my Temporal Operator might be breaking down.

It's happening now. Or maybe not. Maybe it was earlier today. Or yesterday. Maybe it broke down a long time ago. Maybe that's the point: if it is broken and my transmission has been shifting randomly in and out of gears, then how would I ever know when it happened? Maybe I'm the one who broke it, trying to fool myself, thinking I could live like this, thinking I could stay out here forever.

...

The red indicator light just came on. I'm looking at the run-time error report. It's like a mathematically precise way of saying, *This is not how you do this, man*. Meaning life, I suppose. It's computer for *Hey, buddy, you are massively bungling this up*. I know it. I know it better than anyone. I don't need silicon wafers with a slightly neurotic interface to tell me that.

That would be TAMMY, by the way. The TM-31's computer UI comes in one of two personality skins: TIM or TAMMY. You can only choose once, the first time you boot up, and you're stuck with your choice forever.

I'm not going to lie. I chose the girl one. Is TAMMY's curvilinear pixel configuration kind of sexy? Yes it is. Does she have chestnut-colored hair and dark brown eyes behind pixilated librarian glasses and a voice like a cartoon princess? Yes and yes and yes. Have I ever, in a



my time in this unit, ever done you know what to a screenshot of you know who? I'm not going to answer that. All I will say is that at a certain point, you lose the capacity for embarrassment. I'm not there yet, but I'm not far from it. Let's see. I've got a nontrivial thinning situation going on with the hair. I am, rounding to the nearest, oh, about five nine 185. Plus or minus. Mostly plus. I might be hiding from history in here, but I'm not hiding from biology. Or gravity. So yeah, I went with TAMMY.

Do you want to know the first thing she ever said to me? ENTER PASSWORD. Okay, yeah, that was the first thing. Do you know the second thing? I AM INCAPABLE OF LYING TO YOU. The third thing she said to me was I'M SORRY.

"Sorry for what?" I said.

"I'm not a very good computer program."

I told her I'd never met software with low self-esteem before.

"I'll try hard, though," she said. "I really want to do a good job for you."

TAMMY always thinks everything is about to go to hell. Always telling me how bad things could get. So yeah, it hasn't been what I expected. Do I regret it sometimes? Sure I do. Would I choose TAMMY again? Sure I would. What do you want me to say? I'm lonely. She's nice. She lets me flirt with her. I have a thing for my operating system. There. I said it.

I've never been married. I never got married. The woman I didn't marry is named Marie. Technically, she doesn't exist. Just like Ed.

Except that she does. A little paradox, you might think, but really, The Woman I Never Married is a perfectly valid ontological entity. Or class of entities. I suppose technically you could make the argument that *every* woman is The Woman I Never Married. So why not call her Marie, that was my thinking.

This is how we never met:

One fine spring day, Marie went to the park in the center of town, near the middle school and the old bakery that is now a furniture warehouse. I'm assuming. She must have, right? Someone like her must have done something like this at some point in time. Marie packed her lunch and a paperback and walked the half mile to the park from the house where she lived or never lived. She sat on a worn wooden bench, and read her book, and nibbled on her sandwich. The air was warm syrup, was literally thick with pollen and dandelion clocks and photons moving at the speed of light. An hour passed, then two. I never arrived at the park wearing the only suit I never had, the one with a hole in the side pocket that no one ever saw. I never noticed her that first time, never saw her looking at the tops of the eucalyptus trees, running her thumb over the worn page corners of the book open, faceup, on her lap. I never did catch her eye while tripping over my own foot, never made her laugh that first time. I never asked what her name was. She never told me that it was Marie. A week later, I did not call her. A year later, we did not get married in a little white church on a hill overlooking the park where, on that first afternoon, we shared a bench, asked polite questions, tried hard not to stare at each other while we imagined the perfect life we were never going to have together, a life we never even lost, a life that would have started, right at that moment, and never did.

I wake up to the sound of TAMMY crying.

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“How do you even know how to do that?” I ask her. I wish I could be more sensitive, but I just don’t understand why they would program her to have such depressive tendencies. “Like where in your code are you getting this from?”

This makes her cry even harder, to the point where she starts to do that warbly gasping heaving sobbing thing that little kids do, which makes no sense, because it’s not like TAMMY has a mouth, or vocal cords, or lungs. I generally like to think of myself as pretty empathetic, but for some reason my reaction to crying has always been like this. It’s hard for me to watch and just generally stresses me out so much that my initial response is to get mad, and then of course I feel like a monster, which is immediately followed by guilt, oh, the guilt. I feel guilty, I feel like a terrible person. I am a terrible person. I’m a 185-pound sack of guilt.

Or maybe I’m not. Maybe it’s just that I’m not the person I was going to be. Whatever that means. Maybe that’s what messing with the Tense Operator does to you. You can’t even say things that mean anything anymore.

I would ask TAMMY what she’s crying about, but it almost doesn’t matter. My mother would do this, too, all that liquid emotion just filling her up, right up to the top of her tank, heavy, sloshing volume, which at any moment could be tipped over, emptied out into the world.

I tell TAMMY it will be all right. She says what will be all right? I say whatever you are crying about. She says that is exactly what she’s crying about. That everything is all right. That the world isn’t ending. That we’ll never tell each other how we really feel because everything is okay. Okay enough to just sit around, being okay. Okay enough that we forget that we don’t have long, that it’s late, late in this universe, and at some point in the future it’s not going to be okay.

Sometimes at night I worry about TAMMY. I worry that she might get tired of it all. Tired of running at sixty-six terahertz, tired of all those processing cycles, every second of every hour of every day. I worry that one of these cycles she might just halt her own subroutines and commit software suicide. And then I would have to do an error report, and I don’t know how I would even begin to explain that to Microsoft.

I don’t have many friends. TAMMY, I guess. Her soul is code, is a fixed set of instructions, and although you might think having a relationship with someone like that would get boring after a while, it doesn’t. TAMMY’s AI is good. Really good. She’s smarter than I am, by a mile, by an order of magnitude. In all the time I’ve known her, TAMMY’s never said the same thing to me twice, which is more than you can ask from most human friends. Plus, I have E for petting and body heat. I think that probably sounds more yucky than it really is.

That’s pretty much it for companionship from sentient beings. I don’t mind solitude. A lot of people who work in time machine repair are secretly trying to write their novels. Others are fresh off a breakup or divorce or some personal tragedy. Me, I just like the quiet.

Still, it can get lonely. One of the perks of the job is that I get to use the mini-wormhole generator in my unit for personal purposes, so long as any distortions I create in the fabric of space–time are completely reversible. I modified it slightly to pry open really tiny temporal

quantum windows into other universes, through which I am able to spy on my alternate selves. I've seen thirty-nine of them, these varieties of me, and about thirty-five of them seem like total jerks. I guess I've come to terms with that, with what it probably means. 89.7 percent of the other versions of you are assholes, chances are you aren't exactly Mr. Personality yourself. The worst part is that a lot of them are doing pretty well. A lot better than I am, although that's not saying much.

Sometimes when I'm brushing my teeth, I'll look in the mirror and I swear my reflection seems kind of disappointed. I realized a couple of years ago that not only am I not super skilled at anything, I'm not even particularly good at being myself.

*unfinished nature of*

Minor Universe 31 was slightly damaged during its construction and, as a result, the builder-developer who owns the rights abandoned the original plans for the space.

At the moment work was halted, physics was only **93 percent installed**, and thus you may find that it can be a bit unpredictable in places. For the most part, however, while here, travelers should be fine relying on any off-the-shelf causal processor based on quantum general relativity.

The technology left behind by the MU31 engineering team, despite being only partially developed, is first-rate, although the same can't be said of its human inhabitants, who seem to have been left with a lingering sense of incompleteness.



Client call. Screen says

SKYWALKER, L

and my first thought is *Oh, man, wow*, but when I get there it's not you know who, with the man-blouse and the soft boots and the proficiency at wielding light-based weapons. It's his son. Linus.

We're on a pretty standard-looking ice planet, nineteen, twenty years in the past. A few huts are off in the distance. It's so cold everything is blue. It hurts to breathe. Even the air is blue.

The crash site is maybe two hundred yards up the hill to the north. I park the unit, pop the hatch, listen to it go *pssshhhh*, that hydraulic hatch-popping sound. I love that sound.

I hike up to the site with my service pack, to an outcropping of frozen rock, and as I'm catching my breath I notice a small amount of smoke seeping out of a side panel on Linus's rental unit. I pop it open and see a small fire burning in his wave function collapser.

I get my clipboard out, tap my knuckles on the hatch. I've never met Linus Skywalker before, but I've heard stories from other techs, so I feel like I have a good idea what to expect.

What I don't expect is a kid. A boy opens the hatch and climbs out, pushes the hair out of his eyes. Can't be a day older than nine. I ask him what he was doing when the machine failed, and he mumbles something about how I would never understand. I say, Try me. He looks down at his anti-gravity boots, which appear to be a couple of sizes too big, then gives me a look like, *I'm a fourth-grader, what do you want from me?*

"Dude," I say. "You know you can't change the past."

He says then what the hell is a time machine for.

"Not for trying to kill your father when he was your age," I say.

He closes his eyes, tilts his head back, pushes air out through his nostrils in a super-dramatic way.

"You have no idea what it's like, man. To grow up with the freaking savior of the universe as your dad."

I tell him that doesn't have to be his whole story. That he can have a new beginning.

"For starters," I say, "change your name."

He opens his eyes, looks at me as seriously as a nine-year-old can, says yeah maybe, but I know he doesn't mean it. He's trapped in his whole dark-father-lost-son-galactic-monomy thing and he doesn't know any other way.

A lot of the time, the machine isn't even broken. I just have to explain to the customer the basics of Novikovian self-consistency, which no one wants to hear about. No one wants to hear that they went to all this trouble for nothing. For some people, that's the only reason they rented the thing, to go back and fix their broken lives.

Other people are in the unit all sweaty and nervous and afraid to touch anything because they are so freaked out about the implications of changing history. Oh God, they say, what if I go back and a butterfly flaps its wings differently and this and that and world war and never existed and so on and yeah.

This is what I say: I've got good news and bad news.

The good news is, you don't have to worry, you can't change the past.

The bad news is, you don't have to worry, no matter how hard you try, you can't change the past.

The universe just doesn't put up with that. We aren't important enough. No one is. Even our own lives. We're not strong enough, willful enough, skilled enough in chronodiegetic manipulation to be able to just accidentally change the entire course of anything, even ourselves. Navigating possibility space is tricky. Like any skill, practice helps, but only to a point. Moving a vehicle through this medium is, when you get down to it, something that none of us is ever going to master. There are too many factors, too many variables. Time isn't an orderly stream. Time isn't a placid lake recording each of our ripples. Time is viscous. Time is a massive flow. It is a self-healing substance, which is to say, almost everything will be lost. We're too slight, too inconsequential, despite all of our thrashing and swimming and waving our arms about. Time is an ocean of inertia, drowning out the small vibrations, absorbing the slosh and churn, the foam and wash, and we're up here, flapping and slapping and just generally spazzing out, and sure, there's a little bit of splashing on the surface, but that doesn't even register in the depths, in the powerful undercurrents miles below us, taking us wherever they are taking us.

I try to tell people all this, but no one listens. I don't blame them and in any event, it could be worse. I mean, human nature is what keeps me employed. I fix time machines during the day (whatever a day means for me—I'm not sure I even know that anymore), and at night I sleep alone, in a quiet, nameless, dateless day that I found, tucked into a hidden cul-de-sac of space-time. For the past several years, I have gone to sleep every night in this same little pocket, the most uneventful piece of time I could find. Same exact thing every night, night after night. Total silence. Absolutely nothing. That's why I chose it. I know for a fact that nothing bad can happen to me in here.



The earliest memory I have of my own dad is the two of us, sitting on my bed as he reads me a book we have checked out from the local library. I am three. I don't remember what the story is, or even the title of the book. I don't remember what he's wearing, or if my room is messy. What I do remember is the way I fit between his right arm and his body, and the way his neck and the underside of his chin look in the soft yellow light of my lamp, which has a cloth lamp shade, light blue, covered by an alternating pattern of robots and spaceships.

This is what I remember: (i) the little pocket of space he creates for me, (ii) how it feels warm enough, (iii) the sound of his voice, (iv) the way those spaceships look, shot through from behind with light, so that every stitch in the fabric of the surface is a hole and a source, a point and an absence, a coordinate in the ship's celestial navigation, (v) how the bed feels like a little spaceship itself.

People rent time machines.

They think they can change the past.

Then they get there and find out causality doesn't work the way they thought it did. They get stuck, stuck in places they didn't mean to go, in places they did mean to go, in places they shouldn't have tried to go. They get into trouble. Logical, metaphysical, etc.

That's where I come in. I go and get them out.

I tell people: I have a job and I have job security.

I have a job because I know how to fix the cooling module on the quantum decoherence engine of the TM-31. That's the reason I have a job.

But the reason I have job security is that people have no idea how to make themselves happy. Even with a time machine. I have job security because what the customer wants when you get right down to it, is to relive his very worst moment, over and over and over again. Willing to pay a lot of money to do it, too.

I mean, look, my father built a sort of semi-working proto-time-machine years before pretty much anyone else had even thought of it. He was one of the first people to work out the basic math and the parameters and the limitations of life in the various canonical time travel scenarios; he was gifted or cursed, depending on how you look at it, with a deep intuition for time, an ability to feel it, inside, viscerally, and he still spent his whole life

trying to figure out how to minimize loss and entropy and logical impossibility, how to tear out the calculus underlying cause and effect; he still spent the better part of four decades trying to come to terms with just how screwed up and unfair it is that we only get to do this all once, with the intractability and general awfulness of trying to parse the idea of *oneness* trying to get any kind of handle on it, trying to put it into the equations, isolate into a variable the slippery concept of *oneness*.

Years of his life, my life, his life with my mom, years and years and years, down in the garage, near us, but not with us, near us in space and time, crunching through the calculations, working it out on that chalkboard we mounted on the far wall near the tool rack. My father built a time machine and then he spent his whole life trying to figure out how to use it to get more time. He spent all the time he had with us thinking about how he wished he had more time, if he could only have more time.

He's still doing it, for all I know. I haven't seen him for some number of years. I would be more precise, but I can't. Or really, I won't. I don't feel like being more precise about it. Some number of years. Some number. I've spent long enough in P-I, in this gear, inside the TM-31, that figuring out how "long" it has been is more an exercise in science fictional mathematics than anything else.

Sure, there's a partial differential equation I could use to calculate the Aggregate Loss of Possibility, or Quantity of Wasted Father-Son Time, but what's that going to do? Put a number on it? Sure. I could. I could put a number on something but that isn't going to make any of it any better, a number that doesn't correspond to what my mother felt, all the way right up to the end, before she stopped having new feelings and became content to have the old feelings over and over again. I could come up with some answer to it, but putting a number on it won't quantify what that amount of lost years feels like. So, yeah, I think I'm happy here in the Present-Indefinite, not being precise about it. I know what I know. I know I've been looking for him for a while, spent a good portion of my life trying to untangle his timeline. Trying to bring him back home. What I don't know is why he would want to untangle his worldline from ours. What I don't know is what that will mean for us all, when we get to the ends of those worldlines, when we're supposed to be knotted up together. Is he alone? Is he happier where he is? Does he think about us before he goes to sleep at night?

...

You learn a lot of things in this line of work.

For example: If you ever see yourself coming out of a time machine, run. Run away as fast as you can. Don't stop. Don't try to talk. Nothing good can come of it. It's rule number one, and it is drilled into you on the first day of training. It should be second nature, they tell you. Don't be a smartass. Don't try anything fancy. If you see yourself coming at you, don't think, don't talk, don't do anything. Just run.

And the best way to comply with rule number one is rule number two, which is actually more of a conjecture, long believed by science fictional theorists to be true, but still as yet to be rigorously proved: the Shen-Takayama-Furimoto Exclusion Principle. Roughly stated, it goes something like this: *A self auto-dislocated by at least one-half phase shift from his own*



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