

Eschatology with Phil Torres

Ologies Podcast

November 5, 2018

[*banjo music*] Ooooooh, hey! It's yer ol' Uncle, who's pretty dubious to that fat free salad dressing, Alie Ward, back with another episode of Ologies. So, before you think, "Wait, did I hear this one already? Is this just a revisiting of lepidopterology with butterfly expert, Phil Torres, who also professionally plays with baby dogs on his new CW television show *Ready, Set, Pet?* Nope! It's a different episode! Different Phil Torres! It's a different Phil Torres! Boy howdy. You know, in the 60+ episodes that we have journeyed through together, friends, we have gone face first into death, tumors, and misogyny, pet euthanasia, dabbled into crow funerals. But I gotta say, this one... Wow. This one's gonna have you just staring into the mirror at 1 a.m. asking, "The fuck, Ward???" Maybe more than any of them. This one, is the apocalypse. Are you ready? No? Okay, I'm gonna stall for one second.

Before the existential upheaval, just a quick thanks to everyone supporting via Patreon.com/Ologies; to anyone who's put merch on your bod from OlogiesMerch.com; and all the folks who, for \$0, rate, make the commitment to hit subscribe, who leave a review, which I creep with joy and I highlight one each week. This week... you know what? I'm gonna do two. One is quick. Shout out to Tara in Maine, who's a self-proclaimed former podcast hater and now an Ologite. Come, be one with us. And also, thank you for the timely as hell review from [SeattleMe227](#) who says:

I especially love the takes on dark topics like death and fear. So refreshing. I'm an instant fan.

Well... wow. [SeattleMe227](#), buckle up. We're talking about doomsday.

So, eschatology comes from the Greek for last, meaning it's the study of the end. The end of the world. As this ologist explains, this term is no longer bound to just religious contexts, but also scientific study. He's a neuroscientist, a philosophy scholar, and author of three books including, *The End: What Science and Religion Tell us About the Apocalypse* and his latest release, *Morality, Foresight and Human Flourishing: An Introduction to Existential Risks*. As you'll hear, the apocalypse and this episode were both a long time in the making and I coerced this ologist to drive a few hours and meet me in an airport hotel in Philly.

He was so generous with his time. He pretty much spent the evening being lobbed questions. Just barraged. Like asteroids. One after the other. And you'll hear about his background that led him to this branch of philosophy, and where we're at on the old Doomsday Clock, whether or not any of us should have babies, if we should bother recycling, why voting matters, (lookin' at you, America) and some pop cultural antichrists, artificial intelligence, simulations, *Black Mirror*, technology as friend or foe, and how he's just a pretty chill guy anyway. So, pack up your bug out bag and put a down payment on a bunker while you enjoy the brilliant brain of eschatologist, Phil Torres.

Phil Torres: I stepped on my glasses.

Alie Ward: Ohhhh noo!!!

Phil: So, I'm driving at night... it's just blurry.

Alie: You don't even need an apocalypse! You're your own nightmare!

Phil: Yeah! *[laughs]*

Alie: Oh my god... Here, this is yours. Okay, let's start off, number one, by saying that I've been Twitter stalking you for a year. NO response from you. And, I was like, "Wow, that Phil Torres guy... Pretty busy. Pretty important guy."

Phil: Yes... pretty important. *[laughs]*

Alie: Soooo many times I was like, "Hey, I'd love for you to be on the.... No? Okay..."

Phil: Yeah, I don't know how I missed...

Alie: I think I emailed you also!!!

Phil: Hmmmm...

Alie: I'm not trying to put you on blast, I'm just saying that this is a very big 'get' for me. This is of no fault of your own. I was just very eagerly like, "Hi, it's me again..."

Phil: Well, thank you. And, when I finally saw the tweet that I responded to, I responded to it very eagerly.

Alie: I was like, "These apocalypse people are very aloof. The apocalypse scene is, like, the most aloof of all of them." Little did I know, you were eager! And, also you are the second Phil Torres I've had on the podcast. How often do you, someone who studies theories about the end of the world, get confused with someone who studies butterflies and has a show about puppies?

Phil: I feel, kind of, bad for the emails that he might receive, because he studies butterflies, and that's pretty awesome and pretty fun, and here's a lightheartedness to it. Whereas there's a darkness and a heaviness to thinking about, say, runaway climate change or value-misaligned super intelligence.

Alie: Oh no! Okay, let's dive into what your ology is. Is it [phonetic] Esha-tology? [ph.] Eskatology? How do we say it?

Phil: It's a good question. There's actually a debate right now whether the idea of secular apocalyptic scenarios should constitute its own field or whether it should just be a topic that is discussed by experts in their various areas of expertise. So, in other words, the semantics of the term have evolved over time. And at this point, there's this sense in which it's kind of... the topic that I'm interested in is scientific [ph.] eska-tology. Yeah, thinking about the end the of the world from an evidence-based empirical perspective.

Alie: As opposed to a, "POOF! YA DEAD!" Which would be more like being smote by Zeus or something.

Phil: Yeah. That's right, yeah. *[laughs]*

Alie: Which, in this way, we are our own angry god. Kind of.

Phil: Yeah, you know there are Greek myths of humans who gain too much power and it didn't turn out so well. I mean, the central concept is that of existential risk. And, that is cheerfully defined as, "any event that would either cause human extinction or result in irreversible decline of our potential for desirable future development."

Aside: So in this case, the end of the planet as we know it, or the end of our species. *[echo]* 'The Great Berbye'. Also, this subject matter is so, so dark and surreal and I just could not stop laughing at the absurd awfulness of it. I'm so sorry.

Alie: I don't know why this is, so far, the most hilarious episode. It's just so terrible! It's like, kinda funny.

Phil: I was at a conference a while back with a bunch of people who publish on this topic and we had a really good time. It was a lot of fun. There was a lot of laughter and joyousness. And at some point, we conjectured that there must be a self-selection process. If you're lugubrious by disposition, a certain amount...

Aside: P.S. The word lugubrious means sad and mournful. And I'm not too proud to admit that I just had to look it up.

Phil: ...then you just don't end up living and breathing these issues all the time.

Alie: We need balance! Because, how can we appreciate a butterfly if we don't appreciate the fact that the butterfly could maybe just combust spontaneously into fire along with everyone that you love?

Phil: In fact, I sometimes mention a paradox of the field, which is that I think it is among the most important topics that anybody could be talking about or thinking about, researching, and publishing on.

Alie: Well, I mean the crux of what you do is: How can we appreciate our existence if we don't examine the possibility of it ending? Right? Sort of?

Phil: That is an implication. So, the stuff I do in particular is mostly trying to understand the nature of the biggest global-scale disaster scenarios facing humanity this century for the express purpose of identifying ways to mitigate those risks and make sure that they never happen! *[laughs]*

Alie: Right! Let's go back in time, to baby Phil Torres. At what point did your family realize you were more contemplative, perhaps, than other children?

Phil: We're talking about me, not the entomologist?

Alie: Yes, YOU Phil Torres. *[laughs]*

Phil: Okay, got it. So, it's interesting. There's a kind of genealogy I can trace all the way back to childhood. I grew up in a pretty religious household.

Alie: What flavor?

Phil: Baptist. To use a more esoteric term, the broader view was dispensationalist.

Alie: I don't know what that means.

Phil: So, when you hear about the rapture....

Alie: OHHHHHH BOY.

Phil: You can think 'dispensationalism'.

Alie: Okay, that is the, "Poof I'm gone." Are my clothes and shoes still here? But my body and soul is gone. That's the rapture.

Phil: Yeah, if you actually look carefully at the chronology of the narrative, it's stunning. The rapture is supposed to happen, and your soul is separated from your body. And then there's a seven-year tribulation where the Antichrist gains power in the UN or EU, something like that, and then signs a peace treaty, initially, of tribulation with Israel. And then halfway through, invades Israel, and then God rains down all this horrible punishment. And then there's the second coming, and that's when Armageddon happens. Then there are various other things that continue to happen in the eschaton.

Alie: So you grew up with these beliefs?

Phil: I did. I have to say, it fields some pretty freaky dreams *[laughs]* for an eight-year-old. And I actually do have this vivid memory of being the basement of my house, on election night when Bill Clinton won, and it was widely agreed upon in my community that he was the Antichrist. So, I just remember being overcome with terror. *[laughing]* Like, "This is really happening!"

Alie: I love that the Antichrist plays a saxophone.

Phil: *[laughs]* I know!

Alie: 'Cause they're gonna be smooth. And they're gonna charm you.

Phil: Totally! It's part of the charm! Yeah! It's part of the charisma.

Alie: An early '90s sax solo, and everyone's like, "Well, damn..." *[audio clip of then-Governor Bill Clinton's saxophone solo on The Arsenio Hall Show, 1992]* "Here he is. He has arrived."

Is your family still pretty religious?

Phil: Uh, half of it is. Half of it is quite religious and the other half of it isn't so much. Along with me, they've drifted away from the dogmatism and the various belief commitments that half the family still has. But I do think it planted seeds of interest. With respect to Christian eschatology, there was this sense of, "What's a grander topic than not just thinking about the death of individuals, but the species?" And of course, the vast majority of species that have ever lived on the planet have gone extinct.

Alie: And there's something like 99.9% of all species that have ever lived are extinct.

Phil: That's correct, yeah.

Alie: So, fate has our number.

Phil: The odds are not favorable.

Alie: No.

Aside: *[audio clip from Hunger Games: "And may the odds be ever in your favor."]* Okay, but can humans skirt extinction like perhaps some ferns, and weird birds, and old-timey dead salamanders, and the other 5 billion extinct species couldn't?

Phil: We are unique for obvious reasons. We have a very high encephalization quotient, big brains, and we have the capacity to modify our environment in various ways. It's been said that the dinosaurs died out because they didn't have a space program. *[ba-dum-tsh!]* *[Alie laughs]*

And so we maybe can use technology to significantly reduce the probability of all sorts of catastrophes. But unfortunately, most of the risk these days comes from technology itself, large scale human activity, climate change and global biodiversity loss. So, yeah, technology is Janus faced. It's kind of a double-edged sword.

Aside: P.S. Who was Janus? [ph. Jane-us] Well, first off, let's call him the Roman god formerly pronounced 'Jan-us' by me because I never knew it was 'Jane-us'! But anyway, he's the god of beginnings and transitions, and he looks to both the past and the future at the same time. Hence, January, named after this bro. But 'Janus faced' means that you can have characteristics that contrast or can be deceitful. So, it's like the scholarly way of saying that someone is a two-faced bitch. So, Phil is saying technology is a two-faced bitch.

Alie: At what point did you have to decide upon this as a major? So, this is a sect of theology and philosophy? Of sorts? Correct? Not correct?

Phil: Umm, I would not say theology. Yeah, it's naturalistic. That actually gets at a really interesting point. For most of human history, contemplations about the end of the world were deeply intertwined with religious beliefs, so there was a sense which people took seriously the long-term future of humanity. But that was within the theological framework, according to which we have immortal souls, and at the end of the world there's going to be a series of supernatural events. And only recently have humans started to think about the end from a secular or naturalist perspective.

The concept itself is really quite recent. There just isn't much that was said about human extinction even after the end of World War II, which of course coincided with the inauguration of the atomic age. There wasn't that much thought about, "What happens if our evolutionary lineage terminates, maybe as a result of our own actions?"

Alie: But like, we *just* invented soap! You know what I mean? We *just* figured out how babies were made. You know, we're SUCH idiots. I mean, god bless us, but the idea of being like, "When shall the species be mortal?" is like... We have so much else to figure out, you know? I mean, honestly. Contraception is, like, 30 years old. It's crazy. So, we didn't even begin curbing the population really until recently.

So, getting back to school, though. At what point are you saying, "Phil Torres, I am a philosophy major. This is my subset." Do you find a mentor in it? How do you become one of you? How do you do your life?

Phil: [laughs] If that's what you want for some reason. Well, philosophy was my main subject and then I got a master's in neuroscience, which is somewhat related...

Alie: It's also baller. I mean come on. Master's in neuroscience.

Phil: [laughs] Yeah. It sounds waaay more impressive than it actually is. Just to be candid.

Aside: So, Phil got his bachelor's in philosophy and his master's in neuroscience. And at some point he encountered a paper by Oxford philosopher Nick Bostrom entitled, *Existential Risks: Analyzing Human Extinction Scenarios and Related Hazards*. Now the term 'existential risk' means... the apocalypse. Just doomsday. The end. And I

looked up this paper, just to have a little looksee. Just to do a little perusing. And I'm just going to read you the first sentence: "It's dangerous to be alive and risks are everywhere." I was like, "Wow man, straight outta the gate. Okay, I like that." But the next sentence was a little cheerier, saying, "Luckily, not all risks are equally serious."

So, I started skimming this paper and I came to a header just titled, 'Bangs' and I was like, "Oh man. Dude, I have cut bangs. And yes, it did feel like the end of the world." Then I realized it was just one of four categories of big death in various levels of suddenness. Like bangs, crunches, shrieks and whimpers. So, this Bostrom paper includes topics nuclear holocaust, asteroid impact, killed by extraterrestrial civilization, and a whole category titled, "We're living in a simulation and it gets shut down." So just a casual bee bop down hazard street, which was an inspiration to Phil Torres because you know what? Someone's gotta do these jobs, right?

Phil: I think it's in his original paper where Bostrom notes that the number of papers published about dung beetles, in scholarly journals, far exceeds the number about human extinction.

Alie: Nooo... Oh man.

Phil: Yeah! So, that's starting to change a little bit. Maybe this brings us right back to the two Phil Torreses... *[laughs]*

Alie: I know! Speaking of a double-sided coin! *[laughing]*

Aside: Bridging this entomology and eschatology divide though, one published paper titled, *The Role of Dung Beetles in Reducing Greenhouse Gas Emissions from Cattle Farming*. So, dung beetles. They're out there! Making the most of it an objectively shitty situation and they're helping us survive along the way.

Phil: Climate change is a phenomenon we've never encountered before, at least not this type of anthropogenic climate change which is very rapid. There's also global biodiversity loss, which is truly extraordinary. It's widely considered that we're in the early stages of the sixth mass extinction event right now.

Alie: *[as if in pain]* Ohhhh god...

Phil: And just to give listeners a sense of how dire the situation is with respect to the global ecosystems and biosphere more generally, there was a report in 2014 called *The Living Planet Report*. And they found that between... I don't know why I'm chuckling, but it's just... I don't know what the other option is.

Alie: Oh, god! Here it comes...

Phil: Between 1970 and 2012 the global population of wild vertebrates declined by 58%.

Alie: Oh, that's a lot.

Phil: It's a huge amount.

Alie: THAT'S A LOT.

Phil: It's deeply unsettling. And, it's not difficult to extrapolate that into the future. This is happening. It's urgent.

Alie: This is the part in a party where shit starts going wrong. Like, someone barfs, someone breaks the coffee table, it's getting late, the neighbors call the police and it's just like, "Oh, this party is done. This party's done. We gotta get out of here."

Have you considered writing a book just titled, *We're All Fucked*? You would move so many copies. Just call it, *We're Fucked*. I mean, that's kinda the reality, isn't it?

Phil: Yeah... Well, no, I do think there's hope.

Alie: WOW, okay... Let's say you're at a dinner party, and someone's like, "Oh what do you do?" And you tell them, and they're like, "How's the world gonna end?" Gimme a quick menu. If we had sat down at a restaurant and were like, "here are the options for apocalypse." What are we looking at?

Phil: I sort of identify three main classes of phenomena. The first class is environmental degradation. You know, Elon Musk and Jeff Bezos want to set up colonies on Mars, which is, I think, misguided. All that money would be a lot better spent trying to ensure that this spaceship that we're on remains habitable. So yeah, there are all sorts of statistics that could be mentioned here that are very unsettling and very worrisome.

Alie: Gimme some. By the way, I'm with you on the, "Why are we going to go to Mars when we have a planet we're not done ruining yet?" We have a whole planet here. We could just not mess this up. So, give me some unsettling statistics. I'm ready for them.

Phil: I'm also very skeptical of space colonization. Just generally. And there's a really fantastic book that's forthcoming by a guy named Daniel Deudney, who's a political scientist at Johns Hopkins, called *Dark Skies*, which offers a really detailed case for why venturing into the solar system and then into the galaxy could actually have quite ruinous consequences, as well as the evolutionary trajectories that we will likely follow, and all sorts of technologies that we could use to alter our phenotypes.

Alie: You gotta just splice us together with a tardigrade. You know what I mean? Half human, half tardigrade? My head on a tardigrade body, but the size of a dog. I mean, that's what we're looking at. Withstand dehydration for ten years. It'd be great. Can you imagine? I'm gonna photoshop that.

Phil: *[laughing]* Awesome. Sorry to veer off in that direction, but space colonization, that's another issue that is, right now. It could be in the next ten years that we have some colonies on Mars. I think it's a timely issue.

Getting back to the main potential causes of our annihilation...

Alie: Yeah. *[giggling]* It sucks! I love it. *[more laughing]* It sucks sooo bad! We're all gonna die. *[deep breaths]* Okay, so we got environmental degradation...

Phil: Yeah, this is exactly the moment when we need environmental wisdom, and we clearly don't have it. So, the other issue has to do with emerging technologies that are dual-use in nature. They can be used for both harmful or beneficial ends. There are various domains of technology right now that are developing extremely rapidly, at an exponential pace or super-exponential pace. They hold immense promises to cure disease, to reverse aging, to maybe even restore the environment in some way. I mean, de-extinction is, like, a new thing.

Alie: I didn't know that was even a word!

Phil: That's a word, yup!

Alie: It's very optimistic!

Phil: Yeah, George Church at Harvard is right now working on a project to bring back the woolly mammoth. And some other species.

Alie: *[doubtful]* Is that a good idea? *[clip from Jurassic Park, 1993; Jeff Goldblum saying, "Your scientists were so preoccupied with whether or not they could, they didn't stop to think if they should."]*

Phil: I don't know, maybe not. But I think there's a very good conversation to be had about that.

Aside: The conversation being, is it ethical to edit Asian elephant genes and add in woolly mammoth traits? And does this lead the way to careless extinctions because now have these genetic backups on ice? And also, was Mr. Snuffleupagus, the once-selectively seen, and then fully acknowledged mammoth-like puppet of *Sesame Street*, was he an agent of existential foreshadowing in this life simulation we call Earth? Also, is technology evil?

Phil: Technology could enable us to do all sorts of genuinely marvelous things. But, also these same technologies could enable us to synthesize designer pathogens that are really, unnaturally dangerous. They could have long incubation periods, so they could spread around the globe without people exhibiting symptoms and be super lethal. And making matters worse, it's not only the case that the technology is becoming more

powerful, but it's becoming much more accessible, too. It's not just that a large group of scientists, like the Manhattan Project-size group of experts are able to create a pathogen that is exceptionally lethal. But, small groups, small terrorist groups, maybe even single individuals...

Alie: So you could DIY CRISPR the plague?

Phil: Yeah, don't say it so loudly though.

Aside: Naaaa, nevermind. Don't do that. Also, I hope our phones are eavesdropping.

Phil: *[laughing]* It is a fact in researching books and papers that I have an internet history...

Alie: OHHH, I bet you're on so many watch lists!

Phil: *[laughing]* Looking up some really, really frightening pathogens.

Alie: I mean, I google a lot about whale dicks and stuff for this podcast. But your search history is waaaay more suspicious than mine!

Phil: Yeah, no doubt.

Alie: So, essentially, we're screwing up the planet itself and a lot of species are going extinct. Technology is moving so fast it can be used, probably, more for bad than for good. Or at least, one could outpace the other.

Phil: As two philosophers, Julian Savulescu and Ingmar Persson, who have written a bunch of papers together, have pointed out, that it tends to be a fact that it's just easier to do harm than to do good.

Aside: You know what? Just settle in right now. Get cozy for something that will haunt the rest of your waking hours.

Alie: Oh god...

Phil: You know, it's easier to harm 100 people than to benefit them to the same degree.

Aside: *[audio of Oprah Winfrey yelling over a cheering crowd, "You get a car! You get a car! Everybody gets a car!" from The Oprah Winfrey Show, 2004]*

Phil: So, I think technology is just a big magnifying glass, and it is genuinely a qualitatively new situation when a single individual has the power to wreak civilizational havoc. These technologies seem to be empowering individuals much more than the state. There's a book about this exact issue called *The Future of Violence*. They conjecture that there may be an impending dissolution of the social contract, and with it a kind of return

to Hobbesian anarchy where the state is no longer able to provide security because single individuals can harm huge numbers of people in ways that are really difficult to detect, and also are difficult to prevent.

Aside: P.S. Thomas Hobbes was a philosopher from the 1600s, and he held the core belief that human beings are just selfish creatures. [*clip from Finding Nemo, 2003, group of seagulls sporadically calling out: "Mine! Mine! Mine! Mine! Mine!..."*]

Phil: That's the idea behind, at least, the Hobbesian version of the social contract.

Alie: Is this also the logic behind doomsday bunkers? Where you just get a bunch of dehydrated potatoes and you just hit the underground?

Phil: Pretty much, yeah.

Alie: Yeah. I mean, you're just like, "PEACE! Ya'll fight it out up there. I'm gonna live in this bunker."

Phil: I haven't gotten to that point yet, myself. But I have been tempted at times just to stash a couple extra bottles of wine or something. [*laughing*] Just in case.

Alie: Some swords, maybe.

Phil: Yeah. [*laughs*] [*bummer trumpet: whaaa whaaa whaaa whaaaaaaa*]

Alie: So, this is like if you have one million pretty chill people, you just need one who will off the other million. Is that kinda what we're talking about?

Phil: Yeah. Exactly. Or, you could look at it from a different perspective. Imagine out of a population of 7.6 billion, you've got 1 million malicious agents who have omniscient tendencies and would actually like to destroy humanity if they could. This is, by the way, a topic I've also written about, and there are those people out there. For sure.

Alie: [*sounding hopeless*] Ugh. Oh no... I've never heard the word, omniscient. But like...

Phil: Yeah [*laughing*] It's a lovely term.

Alie: They're like, "This is my personal brand. I'm really into omniscient."

Aside: Here's a fun fact: Omniscient means, "Kill everything and everyone until the extinction of our species." It's very OTT. Very over the top. Very extra. Very diva. Very drama. Needs to just, not.

Phil: So, you could imagine one million genuinely malicious agents and then ask, "What is the probability that any one of them will gain access to the relevant technology?" which is increasingly possible. To set up biohacker lab, you only need a few hundred bucks.

Alie: [*sounding ill*] Ughhhhh...

Aside: Pardon my despair grunting.

Phil: John Sotos even hypothesizes that this distribution of unprecedented destructive capabilities could constitute a great filter that explains some probability bottleneck that all civilizations have to go through and almost none of them make it out. That's why we don't observe aliens wandering through the universe. The universe seems to be vacant with respect to life. Why is that?

Alie: So they all have teenage gamers trying to kill each other on their own planet and they're like, "Beep bork bork be-dork." And then they all die also. OHHHHHHH god.....

Phil: Yes, you really should have co-authored, because that would have been a nice flare at some point.

Alie: Just alien incels with twelve dicks being like, "I can't even get laid at all! I'm gonna kill everyone." Holy smokes....

Phil: Okay, so the last one, sorry for delaying.

Alie: I have too many questions, I'm so sorry.

Phil: Yeah, no, no, it's fine. The last one, I mentioned before that it's a bit more speculative, but I would say it's machine superintelligence.

Alie: Ohhhhh boy... we're talking AIs.

Phil: AI. Oh yeah.

Alie: We've got some [*singsong*] artificial intelligence that's gonna kill us all! Just trying to make it cheery.

Phil: So, one of the biggest myths is that the AI system that is dangerous is one that has some kind of malicious, malevolent, malign intentions. And while it's possible that a super intelligent machine could be designed in such a way, or could for some reason acquire a kind of, [*robotized*] "Must Kill Humans" value system...

Alie: I love, by the way, if there's a malicious AI, it can kill us all, but it can't make a complete sentence. Do you know what I mean? It can't say, [*synthesized robot Alie voice*] "Great to make your acquaintance. I must kill all of the humans in existence." It can only use an economy of words that's very simple. But it's very sophisticated in that it could kill us all. Just can't learn the language. So, [*said in monotone*] "MUST KILL HUMANS."

Phil: Yeah, and the voice too. They'll have better synthesized voices by that time. So, actually the real danger is that it exceeds the best possible that any member of our species could

possibly achieve and also that its value system is not sufficiently well-aligned with ours. It makes for a much less compelling movie story line, but this is actually the real substantive concern that people have. You know, computers tend to process information way faster than humans, a million-plus times as fast. Basically, the outside world, to it, looks frozen.

Alie: And that's without quantum computing.

Phil: Yeah.

Alie: You're just talking about what we've got, which compared to quantum computing is sooooo slow.

Phil: Yeah

Alie: Ho boy...

Aside: Quantum computing, by the by, relies on an atom's super position of being essentially two things at once instead of our current computers which rely on transistors to make bits that represent ones and zeros. Anyways, that's as nutshell as it gets, and probably a little bit wrong. But how much faster is quantum computing? Some say 100 million times faster than your laptop. It's... a lot.

Phil: And so I ran the numbers. I think the average PhD program in the US is something like 8.2 years. And, if computers process information a million times faster, that means artificial general intelligence could earn a PhD in something like 4.3 minutes.

Alie: [*in despair*] Oooooh no....

Phil: [*laughing*] So....

Alie: Sooooo much cheaper! [*still in despair*]

Phil: Yeah! So, that's on the one hand. Second, there's something called the instrumental convergence thesis. And, this is just the idea that for a wide range of final goals, there are some very predictable intermediary goals that the system is going to pursue.

Aside: So, essentially, if you have goals, there are some basic things you have to do to achieve them. Like, if you wanted to be a musician, Phil says, you would have to get good at, say, shredding on guitar. You would have to obtain the guitar. And if your stepdad tried to kill your dreams, you would resist him and tell him, "Fuck you, Doug! No one likes your coleslaw or your mustache." And they you'd keep practicing those hot licks. Same with AI.

Phil: First of all, it might look around and think, "These humans could try to shut me down. So, it's maybe in my interest to eliminate them." [*clip from 2001: A Space Odyssey: Hal*

9000, "I know that you and Frank were planning to disconnect me. And I'm afraid that is something I cannot allow to happen.")

Another thing is, humans are made out of conveniently located atoms. To paraphrase how one researcher, Eliezer Yedkowsky, famously put it, 'It's not that the AI hates you or loves you. It just notices you're made out of material that it could use for something else.' The analogy here, this is becoming a bit cliché, is when humans raze a forest to build a suburban neighborhood, the result is sometimes a pretty devastating ant genocide. And it's not like we're malevolent towards the ants, it's simply that we're much smarter and therefore can manipulate the world in ways that the ants can't even conceive, and also we just have different values. Our value systems aren't properly aligned.

So, if you think about this analogy with us as the ants going about our business, we have our own values, we want to build these little colonies underground. And then the super intelligent system that we create ends up having values that don't perfectly align with our colony-building values. Then it just may 'raze the forest' in pursuit of its own particular aims, with the consequence being that we all perish.

Alie: And the next think you know, 'We fucked.' *[laughs]* Once again, come to the conclusion, end of the flow chart: We're fucked.

Phil: *[laughs]* Yup, that reminds me, I'm probably going to forget the guy's name, but there was a geophysicist... oh, Brad Werner, I think is his name. He gave a presentation that was titled, "Is Earth Fucked?"

Alie: *[surprised outburst of laughter]* Eeeeeaaaahh!

Phil: And he got a fair amount of press for it. And as he explained to someone from Gizmodo or something, that his answer is, more or less, "Yeah..."

Alie: *[nervous uncomfy laughing]* It's just a shrug.

Phil: *[chuckling]* Yeah, so...

Alie: A single slide. Yup. You're like, "Wow. That was a 45-second presentation. He's done." He's like, "Aaaaaand, there's croissants in the lobby. So, bye bye."

Phil: *[laughing]*

Alie: Now... how do you think the world is gonna end? If you had to put your money on it - not that money matters when the apocalypse is nigh - but if someone's like, "Mr. Torres, put your money the end. What is it?"

Phil: Umm... I think it would be imprudent to specify one particular scenario.

Alie: You're like, "All of them." *[laughs]*

Phil: I have yet to discover a particularly good counter argument to the issue that we were talking about before.

Aside: So, in regard to the democratization of destructive technology, that little thing. *[tiny alien-sounding fast-spoken voice: "That little thing."]*

Phil: As some people have said, if everybody around the world had an app on their phone where they could open it up and push a button that would destroy the world, who thinks the world would last for more than two seconds!?

Alie: Ohhhh, it would be OOOOOVER... there would be someone who got rejected for a prom date. Oh we'd be smoked...

Phil: *[laughing]* Yeah... it's implausible to think we'd last for a minute.

Alie: And it would... I'm sorry, but it would 1,000,000% be a dude between the ages of 16 and 23 that did it. Like 100%. Someone's prom date, someone's girlfriend, left them for someone who does more CrossFit, and then the world is over. That's how it would end! No offense.

Phil: This is another topic that has been discussed among the relevant scholars. Basically the argument is that a scenario in which there are extremely powerful technologies, and then there's this segment of humanity that is suffering from testosterone poisoning. I've written about this as well, and I'm very worried about it. Yeah... *[laughing]*

Alie: What can we do for the dudes? Like, if the dude were a stray animal, say a wounded raccoon, *[weird hooting bird noise]* or a neglected rabid dog, what could we do to help fix them so they don't kill us... in the face...?

Phil: *[laughs]* I don't have a good answer. Um, I mentioned before the philosophers Julian Savulescu and Ingmar Persson who wrote a really interesting book from 2012 called, *Unfit for the Future* where they go into immense detail about the possibility of using moral bio-enhancements.

Aside: Moral Bio-Enhancements. These are a thing. I feel like coffee is already kinda one of 'em.

Phil: These would be biomedical interventions that would aim to enhance our empathy and sympathetic concern. It's really controversial. It's person engineering type stuff. So, they argue on the one hand if we remain as we are, moving into the future, the outcome is going to be bad.

Alie: We're fucked.

Phil: We're fucked. So, that is what warrants, I believe they would say, their considering a possibility that's really quite radical. Anyway, the point is, statistically speaking, women tend to do better than men with respect to empathy, and sympathy, and moral characteristics like that. So, they have this really great line where they say, "What may need to happen is that we make men more like women, or rather, men more like men who are like women." There are definitely people in this field who take seriously the potentially quite combustible mixture of toxic masculinity and dual-use technologies, so... *[laughing]*

Alie: *[overcome]* Ohhhh... That's like a toddler with a machine gun.

Phil: I don't know what to say. Maybe put the men on Mars or something? Just sequester them over there.

Alie: Oxytocin supplements, maybe?

Phil: Oxytocin is one of the main possibilities that Savulescu and Persson discuss. But unfortunately, the effects of oxytocin are limited to racial ingroups according to a whole bunch of studies. So, you do get more empathetic to other humans, but it doesn't go beyond your race at least in the studies.

Alie: Ohhhh jeeez!!!! That's the hugest problem we have! Pretty much!

Phil: Yeah, so they do mention at some point that this is not a trivial problem with it. Because we have fluoride in the public drinking water for healthier dentition.

Alie: We vaccinate.

Phil: We vaccinate. So there's a kind of perspective where maybe it's not totally crazy that you put some oxytocin in the public drinking water.

Alie: The Mountain Dew. Just put it in the Monster Energy. 'Cause I feel like those are the people who need it. *[laughs]*

Phil: I really like the more targeted approach. That's much more clever.

Alie: How often do you think about the apocalypse? Is it only when you're working? Or is it when you're driving around when a new Mariah Carey single drops, when you are...

Phil: Is there a new single???

Alie: I don't know... *[cracking up]* A girl can dream!

Phil: *[laughing]*

Alie: I'm trying to think of the good things in life!

Aside: As fate, and I guess subconscious effect that a good publicist would have, Mariah Carey DOES have a new album coming out. It drops November 16th, people! And fittingly, for this episode, it's titled, Caution. [*Audio clip of Mariah Carey singing, "Ohhhh, hoooooo, hooooo" over a slow gentle piano*] Also, does Phil ever get bummed?

Alie: But do you think about it on a daily basis? Like, "Maybe I shouldn't sweat this because we're about to annihilate the planet?"

Phil: So, if you take seriously some of the probability estimates that scholars have proposed... Bostrom has a few. Toby Ord has suggested that we maybe have a 1 in 6 chance of surviving the century.

Alie: 1 in 6 chance of surviving the next 82 years?

Phil: Yeah.

Alie: Are you gonna have kids? Do you have kids?

Phil: No.

Alie: Are you gonna have kids?

Phil: No.

Alie: Is that because you're like, "we're all gonna die anyway"? Because, I've often thought that. I'm like, "number one, there's too many of us, we're growing exponentially. No one needs more of me. One of me is plenty."

Phil: Yeah, one of me is enough for the world. [*laughs*]

Alie: And then there just gonna die. But how do you approach those kind of life decisions?

Phil: There's a philosophical component and then a, kind of, empirical component. Empirically, I could imagine a version of the world that is worth living in where, like, people take science seriously. It could be the case that climate change, right now is not a concern at all, because people listened to scientists back in the '90s et cetera, and then took actions just like we did with the ozone hole. Yeah, there's a sense in which the world could be significantly more livable than it is.

Unfortunately, we're in a world where - I can only assume what your personal politics are - but you know, Donald Trump [*laughs in disbelief*] got elected even after the Trump tape, and you know, etcetera. I mean, that's an unfortunate world. To put it crudely, it's a shitty world. Maybe another way to put this is, I'm deeply disappointed in my species for not doing better. But, so then there's a philosophical issue, and this gets to an idea referred to as anti-natalism.

Alie: Ohhh, okay. Oh there's a word for it?!

Phil: Yeah...

Alie: Oh, I just thought it was spinsterism. Old-weird-aunt-with-no-kidsism. I didn't know there was an anti-natalism!

Phil: *[laughing]* Yeah, so it's a pretty fascinating view. Like Arthur Schopenhauer, is kind of famously an anti-natalist. His argument was that life is just terrible. Life is dukkha. *[ph. dooka]*

Aside: So, dukkha translates from Sanskrit and it means suffering, pain or stress. So, "Life is dukkha" is a Buddhist phrase that means life is, kind of, unsatisfactory and painful. Life just kinda sucks. Now, in all transparency, when Phil said life is dukkha, I thought he meant dookie, which is a causal term for poo. But he also said that some argue that the most compassionate thing you can do is not bring a child into the world because it's hard. It's hard to live, it's hard to be a person.

But a lot of this probably depends on your own outlook on life and how much you enjoy it. I do not enjoy most Italian food, to a lot of people's shock and disgust of me. But ergo, I would never bring someone to Buca di Beppo as a treat. However, some people love it. They would definitely invite others to a spaghetti-fest. Now, from an evolutionary standpoint, some scientists think it's better for a species to not fully grasp the pain of existence.

Phil: Thomas Metzinger and other philosophers have talked about how, evolutionarily speaking, we probably would not have been selected for tendencies to recognize the extent of harm in our life. Those tendencies would be selected against because that's not really good for gettin' it on. *[laughing]*

Alie: Right, like, "This is terrible, let's make more of us."

Phil: Yeah, exactly! So, he says it's always a harm to bring a human into the world. Humans, yeah they're going to have some good experiences, but they're also going to have bad experiences. Whereas a person who doesn't exist isn't going to miss those good experiences, but it is good that that individual is not experiencing the bad stuff.

Alie: If you had a timeframe, that you thought the apocalypse maybe were to visit us, kind of like a doom fairy, when do you think that might happen? I'm just trying to figure out, do I buy the extra protection plan with the electronics? How much do I invest in my retirement?

Phil: This is a general issue that we've returned to several times.

Alie: I'm so sorry.

Phil: *[laughing]* No, no, it's fine. I just don't have a good sense... Objectively, we know that a huge asteroid that could kill our species strikes Earth every 400 million years or something. Or 400,000 years maybe. A super volcano erupts every 50,000 or so. The last one... two super volcanic eruptions ago was the Toba Catastrophe that might have resulted in a population bottleneck of maybe 1,000 humans. So, we almost went extinct way back when.

Alie: Oh! Soooo close! Those 1,000 must have been *[high pitched alien voice]* soooo horny! Oh, they must have been like, "You guys! We got work to do!!" So, we could have Yellowstone just pop off and there could be 12 of us left.

Phil: That is a frightening possibility. Yeah.

Aside: So, the Toba Catastrophe theory - just looked it up - holds that 75,000 years ago in Indonesia there was a volcano so wicked, that it led to a volcanic winter that lasted 6-10 years. And, maybe a 1,000 year-long cooling episode for the Earth. And we all almost died. So, for more on volcano doom, if your like, "WOW, I didn't know I was so horny for volcano facts!" See Episode One with Jess Phoenix. *[Dad joke voice]* You will lava it. *[quiet whisper]* I'm so sorry.

Phil: Bostrom puts the probability at least 20% based on objective and subjective considerations, that it's before 2100. Martin Reese suggests that there's a 50/50 chance of civilizational collapse this century. If you take seriously some of these estimates, and you compare them to the likelihood of dying in a car accident, or a plane accident, or something of that sort, it turns out you're much more likely to encounter some kind of human extinction event than...

Alie: REALLY???

Phil: Like THOUSANDS of times more likely.

Alie: WOWWWWW!! *[DJ airhorn to the tune of X-Files theme]*

Phil: I should add quickly, you're also much more likely to die in a huge asteroid strike than get struck by lightning. And that's just because an asteroid strike is going to harm so many people that if you consider the probability over millennia then that's how you get the probability that you're more likely to die that way.

Alie: Oh! But still, numbers are numbers! I'll take it. Do you live your life differently thinking about the apocalypse? Or do you give advice to anyone, like, we should still be recycling, right?

Phil: We should yeah.

Alie: We should still be helping fellow humans.

Phil: Oh very much so, yeah. Absolutely.

Alie: Uh, try not to squash any endangered species. Vote for people who give at least one shit about the future. Right? And, don't develop AI that could use human atoms as fuel. Have you ever watched Black Mirror?

Phil: Yes.

Alie: How do you feel about it?

Phil: Very good.

Alie: GOOD?!?!?!? WHY?!?!?!? Sorry, I'm screaming. *[laughs]*

Phil: *[laughing]* Let me change my answer a bit. I think the show is fantastic. I think a lot of the topics that the show explores are really fascinating and a lot of these issues are right around the corner. So, it's giving us a sneak peak in certain respects at least, of kind of near-term issues with social media, possibly things like mind uploading, I mean, that might be in the next several decades.

Yeah, it's really quite good and I think it's helpful to explore the more dystopian possibilities. Because again, these technologies are dual use. They don't just have destructive capabilities, but also on the other hand, they really could really ameliorate the human condition in all sorts of amazing ways. I certainly would be elated if we could cure all disease. You know? *[laughing]*

Alie: That'd be dope as hell.

Phil: And, cancer, Alzheimer's... you know, focusing on the peril, doesn't make one a pessimist. This is an issue that I've had with a lot of Steven Pinker's work. because he seems to think that people who talk about existential risks are pessimistic. Like, I tend to be fairly optimistic in my personal life by my nature, but there are some facts about the world that make me pessimistic. Anyway, the point is, in order to increase the chance that there is a really good outcome, it's critical to focus on the worst-case scenarios on how things could go wrong where you say, "okay, let's fix this outcome."

In fact, Pinker has accused some existential risk scholars of just, kind of, sitting around trying to invent new doomsday scenarios. Well... kind of, yes. Because we certainly don't want to be blindsided.

Alie: We got these big ol' noggins! We gotta use em! You think ahead! I like to rely on the theory that this is all a simulation. Possibilities that that's true?

Phil: It's possible.

Alie: Okay, can you just say that it's possible? If it were a simulation, if someone were like, "Hey, we got news to say..." Would you do anything different in your life?

Phil: Probably not.

Aside: But some scholars, he says, like Max Tegmark, have simulation theories. It may be a little tongue in cheek, that maybe the more strife and jerks in power and religious wars we have, the more entertaining we are to the folks running the simulation. Kind of like an ant farm with a lot of battles and activities. Only we're people. And it feels real. And it hurts. And we wanna sleep all the time to escape the pain.

Alie: Can I ask you some Patreon questions if I make it quick?

Phil: Yeah.

Alie: I'm gonna lob a couple questions at you at random. Okay, so on Patreon, patrons get to submit questions and I'm just gonna ask you a few at total random. Because a lot of people were like, "How are we going out?" That's, like, everyone's. Would it be self-induced or extraterrestrial? Everyone's like, "How are we going out?" Everyone wants to know.

Aside: Kira Lichtenfeld asked: Do you put any stock into the Doomsday Clock? She also notes that was an accidental rhyme. And P.S., the Doomsday Clock is the symbol that the Bulletin of Atomic Scientists first employed in 1947. It represents how close we are to a manmade global catastrophe. Now, should I change manmade to person-made? Or should I just leave it manmade? Hmmmm... I'm gonna leave it. Also, how close we are to climate change or a global nuclear war. Now, 'Doomsday' is represented by midnight, and in 1947 it was set to 7 minutes to the hour. Now, it's been set backwards and forwards 23 times since then. It reached a placid 17 minutes to the hour in 1991, but it has changed recently.

Phil: Donald Trump, I'm sure you know this, or your listeners know this, but he more or less single handedly pushed the Doomsday Clock... The minute hand of the Doomsday Clock forward. That happened in 2017, they announced it. It was January or something. And then the clock went from 3 minutes before midnight, which represents doom, to 2 1/2 minutes. And earlier this year, it was pushed forward another 30 seconds. Almost entirely because of Trump's actions and climate denialism. Also, withdrawing from the Paris Climate Agreement and the Iran Nuclear deal, both of which the Bulletin of Atomic Scientists, which runs the Doomsday Clock, identified previously, as they put it, 'two bright spots in front of a canopy of bleakness.' *[laughing]* They had something... somewhat dark and dismally poetic.

Alie: We're just inching closer....

Phil: We've been around for 200,000 years. Recorded history started 6,000 years ago, I guess. As Stephen Hawking said in a Guardian op-ed, in 2016 I think, there's very good reason for thinking this is the most dangerous moment in all of human history. So, at this critical juncture in our career as a species, exactly the moment when we need someone who is deeply sagacious, and wise, and thoughtful, and understands our evolving existential predicament, we have someone who is - I know this isn't a bold original thesis that I'm proposing here - someone who is just profoundly ignorant and revels in ignorance, and foolishness, and myopia.

Alie: Erin Estabrooks wants to know: Are we better off heading for water or going underground?

Phil: Are those the only two options?

Alie: I don't know, I think she's assuming we want to survive. Just dark...

Phil: Well, some scholars have advocated for bunkers that are continually occupied.

Aside: If you're cruising Redfin for an apocalypse pied-à-terre, there's a former missile silo near Topeka for sale. Just over \$3M. 34 acres. Solar panels. Comes with a lawn mower. And, 11,000 square feet of hunker-down-fun-times-space below the Earth. Perhaps you can invite Michael Stipe for a slumber party. [*clip of Michael Stipe singing, "Feeling pretty psyched, it's the end of the world as we know it." from It's the end of the world by R.E.M.*]

Phil: So, that's one option. Water? I don't know. Submarines could serve the exact same purpose as bunkers. There could be some global catastrophe... There's some scenarios it wouldn't be effective, like a runaway greenhouse effect, or there could be a physics disaster that results in a black hole, or strangelet, or a vacuum bubble, as it's called, that could actually destroy the entire universe.

Alie: OH DEAR...

Phil: That seems unlikely, but also possible. I mean, Mars sounds as appealing as underground or underwater to me. And Mars doesn't sound too appealing.

Alie: [*whispers*] It does not sound very appealing. It seems very dry there. Jessica Vittarelli wants to know: Why are humans so obsessed with being judged at the end of their life? Is it something learned or just part of our makeup?

Phil: Oooh, that's a good question. Surely, some of it is learned. I mean, this is outside my area of expertise, so I'm just guessing. Yeah, no doubt some of it's learned, but I don't know, my immediate thought is maybe there's a component of morality that leads us to wish that when we're gone, that during our lives we would have had a positive impact and left some kind of trace that benefited the world or just the people around us.

Alie: That's a kind, nice answer!

Phil: Best I could do.

Alie: No! You managed it! Shelby Fawn wants to know: How has studying neuroscience informed your philosophical work? And, what is your favorite weird end of the world potentiality? So, neuroscience and philosophy... And, what's the best way to go out?

Phil: Yeah, so, the reason I was interested in neuroscience to begin with was because I was focusing as an undergrad on philosophy of mind. And, this was, kind of, shortly after Patricia Churchland published her book on neurophilosophy. She holds a view about folk's psychology, beliefs, desires...

Aside: Okay, so this philosophy, in a very, very tiny, tiny thumbnail nutshell, asserts that, things we think we understand up in the mind, like that we believe in things or desire things, are not really real, because they're poorly defined and the behavior should just be judged on biological levels.

Phil: So, I was pretty intrigued by that and I thought it would be worth learning a bit more about the hardware and seeing how that might inform philosophizing about the wetware, the higher level of the conscience experience, or just cognitive functions.

Alie: And then, what's your favorite apocalypse scenario?

Phil: Okay, so there's this amazing polymathic scholar at Oxford University named Anders Sandberg, and he recently responded to a Quora question which was, "What would happen if the earth suddenly turned into high-density blueberries?" And he took the question seriously and did the math, and ended up responding with a paper that is up on archive. It's a really technical, fantastic, sophisticated article that I couldn't get through parts of it, but it was really quite entertaining. So, think that's my favorite sort of fantastical eschatological scenario.

Alie: I'm ready for the blueberry death.

Aside: [clip of, "You're blowing up like a balloon! Like a blueberry." From *Willy Wonka & The Chocolate Factory*, 1971]

Alie: I'm so ready for it. Lindsay Frischmuth wants to know... Number one, are you familiar with *Harry Potter*?

Phil: Not really...

Alie: Okay, she wanted to know: Are you Slytherin? But something told her that you're a Ravenclaw. They're different houses, maybe you could take that online quiz. Who knows? My last two questions: Worst thing about your job. What [*singing*] suuuuucks

about studying the apocalypse? That's such a broad question. But what is the worst thing about studying the apocalypse?

Phil: Well, it's not the most soporific topic, that's for sure.

Aside: Soporific just means inducing drowsiness. So, no. The end of the world? Not a sleepy business. Also, yes, I looked it up.

Phil: It's meaningful work for sure, I think that's what enables me to spend days just really cogitating some particular dark scenario.

Aside: Cogitate: to think about or meditate upon. Toss that in your little word toolbox! It's a good one!

Phil: I don't know in terms of downsides. I mean, it's hard to get grants.

Alie: [*cracks up*]

Phil: That's a bit of a struggle. I think that's the worst part.

Alie: Getting grants?

Phil: Yeah, getting grants!

Alie: I love that you study heat death of the universe, starvation, extinction, and the worst is applying for grants. That's the darkest part. Do you ever just get a stamp back, that's just like a big stamp, like, "BOOM! Well, what's the point?" Someone's like, "You've convinced me in your grant that the apocalypse is coming, ergo I will not fund it."

Phil: I imagine there are some papers that could be written that might present a really compelling case that the end is imminent. And that would deter, no doubt, the garnering of further money.

Alie: They're like, "We're gonna take this money, we're gonna buy a yacht! We're gonna throw a party instead."

What's the best thing about your job? What do you love the most about being an eschatologist?

Phil: I think, it's what I just read out a moment ago. I find it really meaningful. And this gets back to the, sort of, to use the term a bit loosely, the paradox of the field. It's an extremely important topic whose importance is, as I said before, just very parasitic on the importance of all other things; poetry, and sports, and literature, and so on. It is meaningful.

This is work that aims to improve the lives of the next generation, and also to ensure that the great experiment called civilization continues, and this multi-generational project of science, and philosophy, and so on, can perhaps reach some kind of good ending to the narrative of human existence. So, yeah I find that deeply satisfying. If you're a young person and you happen to also care about human survival, then this is a good field to go into. It's a growth field, also, as colleagues say. It's not going away anytime soon.

Alie: There's never been a better time to be a Doomsdayer.

Phil: Awesome. Thanks a lot, I appreciate it.

Alie: [laughs]

To find more of the brilliant and delightful Phil Torres's work, you can see the website xriskology.com. He is [@xriskology](https://twitter.com/xriskology) on Twitter. I'll link those both in the show notes. And his books are *The End: What Science and Religion Tells Us About the Apocalypse*, and last year's release, *Morality, Foresight and Human Flourishing: An Introduction to Existential Risks*. So, do get your mitts on those.

Ologies is @Ologies on [Twitter](https://twitter.com/Ologies) and [Instagram](https://www.instagram.com/Ologies). I'm [@alieward](https://twitter.com/alieward) on both, so do follow along. OlogiesMerch.com has shirts that you can maybe use as a tourniquet during the chaos of an extraterrestrial alien invasion. Thank you Boni Dutch, and Shannon Feltus, and the [Ologies Podcast Facebook group](https://www.facebook.com/OlogiesPodcast) is great. Wonderful people, new friends you can meet before we all die. Thank you Erin Talbert and Hannah Lipow for adminning. Nick Thorburn wrote and performed the music for this. He's in a band called, Islands. And this was edited by life saver, Steven Ray Morris who also hosts the podcasts, The Purrrcast and See Jurassic Right.

Now, if you stick around to, THE END. The End. The end. You know I tell you a secret every episode. So, this week's secret is that right before I started recording these asides I got a text from my dad on the family thread about how there were 39 earthquakes on the San Andreas fault yesterday. [clip, "That's great it starts with an earthquake" from *It's the End of the World*, by R.E.M.] So, that's scary. But my first reaction to that was, "What? No one would expect you to return emails for a few days. So, that'd be pretty sweet." And then also, it's not as sad as an asteroid. So, maybe this apocalypse stuff is uplifting. Maybe we should laugh about it just a little more and live life in a way that's like, "Eh, fuck it." Cut bangs. Sing some karaoke. Dance in a park. Just do your thing. It's all gonna end. Okay, berbye!

[outro music]

Transcribed by Mike Melchior.

Some links which may be of interest:

[Books](#) by Phil Torres

[An overview of ... extinction:](#)

[Nick Bostrom's cheery paper](#)

[Dung beetles: a shitty sitch made better](#)

[My quantum computing explanation was probably not as thorough as this](#)

[The Doomsday Clock is tick tockin' on](#)

[Sweet missile silo, brah](#)

[Dukkah is not dookie](#)

For comments and enquiries on this or other transcripts, please contact OlogiteEmily@gmail.com