

Everybuddies Podcast Episode 9 – Rolling Boulders and Briefcases: A Cosmic Conversation

[00:00:00] We are recording episode nine of Everybuddies Podcast. We did episode seven, twice, and we are now broadcasting our pirate code and hacking into the Matrix. Everybuddies Podcast coming straight at you from Burnsville, Minnesota. Protect your Neighbors. Fuck Nazis. It's not controversial to say fuck Nazis.

wherever you are on the political spectrum, you can take that however you want. Have you ever heard of Sisyphus? Yes. What do you know about Sisyphus? He's a titan, correct? No. Is he not half, is he not half God? As far as I know, no. But if you wanna open up the, you've got it right there.

Yeah. Sisyphus was punished by the gods. he has to push a rock up the mountain and before it reaches the top it rolls back down on [00:01:00] him. That's basically it. we must imagine Sisyphus as happy.

We can get to that. Why should we imagine Sisyphus is happy?

Because he's gotta do it either way. That's fair. That's a fair assessment. So on the upper left there, that piece of pottery, that is Zeus and, the nymph, I can't remember her name. She was a river nymph, and, Zeus kidnapped her and took her to an island. her father went looking for her.

Now, Sisyphus, he was actually the king who founded the city state of Corinth. He was neither God nor half God. And he founded the city of Corin. But what he did, this nymph, and I think her name was Ionis, he told her father where to find her.

Her dad was out looking for her. He told her father where to find her. Okay. So Zeus commanded Tartars. That's who I've got on the [00:02:00] lower left there. there were a couple different names for the God of the other world, Tartus in Hades.

And what Zeus told Tartarus to do was go capture Sisyphus and bind him in the underworld, basically kill him, drag him down to hell. Tartarus did that. But since Sisyphus knew he was gonna die, he told his wife, don't bury me, have my body taken out in the marketplace for everybody to see.

he told her, this is a test of your obedience. So she did that. And what Sisyphus did was he convinced her to, that, that his wife had so deeply disrespected him that she should let him go back, basically tell his wife off. And, then he'd come back,

Don't worry, you let me go, I'll come back. He didn't come back. he basically prevented other people from being [00:03:00] killed. He, I believe he, he bound up Hades or he bound up Tartarus, so that. No one could die. And that really bothered Aries.

on the upper right there, that's, a relief from the Parthenon. it depicts Ares, Persephone, Hermes, I can't remember who the fourth one is, Ares, the god of war, got pissed off because he's what's the point of having me around if nobody can die? He complained to Zeus, and Zeus sent Sisyphus back to the underworld.

And, like you said, he was made to roll the boulder up the hill all day long. He rolls the boulder up the hill, then sunsets and the boulder rolls back down and he has to walk back down all night and get back to the boulder. And on the lower right, that piece of pottery depicts having to watch him do it, having to make him keep rolling the boulder up the mountain.

So a Sisyphean [00:04:00] task is one where it can never be accomplished. keep on chipping at that block. But Your sculpture will never be finished. that repeated kind of punishment also shows up, in, the myth of the titan.

The titan Prometheus gave men fire, Prometheus, the myth of Prometheus, where Prometheus basically saw all of humanity down on the earth just struggling and suffering. And he said, ah, you know what? I'll give him fire. Zeus didn't want him to have fire. But, and Prometheus was actually a titan. went and gave people fire, and as punishment, he was tied up on a cliff.

every day an eagle comes down and eats his liver, and then he regrows it overnight. Okay. And then the eagle comes again and eats his liver. So it's this repeated cycle, right? That,

that myth, that, or that story [00:05:00] that someone gave man some kind of tool or some kind of knowledge they shouldn't have,

And then gets eternally punished for it. That's actually not uncommon. it's not too different from the serpent, tempting eve in the Garden of Eden, to eat of the tree of the knowledge of good and evil. And then the serpent has to be made to suffer forever because he was not supposed to give them that.

when you talk about Sisyphus being happy, that's at the end of, an essay called The Myth of Sisyphus. The Myth of Sisyphus by Albert Camus. Okay. And Camus was writing during the time when the French were under Nazi occupation. you have to look at his point of view from this very dark angle that he was living in.

You have to say he was living in a society where it wasn't really possible to live free, and there really was no progress that could be made. [00:06:00] Because any positive thing that the French produced, the Nazis just stole. They were just reaming out that whole society.

when you talk about, the Nazi's whole ideology, the antisemitism basically they were robbing the Jews and then, they went on to rob the pols and rob the gypsies, and yeah, they were killing 'em. But Herman Goring, Adolf Hitler, Himler with his Ss, they became very wealthy, basically off of stealing money and riches.

Kamus was writing at this time where they were just under occupation and brutalization. But basically what Kamus said is, you get up, you go to work, you go home, you go back to bed, you get up, you go to work, you go home, you go back to bed, You just keep repeating this same task.

So it's Sian, and it's absurd, because you look [00:07:00] to the universe and say, what purpose is there in this, how does this make anything better? And there's no reply, no response. The universe can't tell you. The society around you can't tell you, so you're forced to try to find meaning within it, right? you can't look to the state and you can't look to religion. So what can you look to, a lot of people look to their family, My family is doing well, so that gives me some purpose here, But Camus is basically saying you create your family so you're creating your own purpose, what he says is, during that time when Sisyphus is walking down the mountain, that's when he is truly free. he isn't pushing the boulder. He doesn't have

anything he has to do except think, except be free in his own mind,

to find comfort in the absurdity of it all. To me it sounds almost like stoicism okay. To [00:08:00] say, what matter? So if you're, if you were being stoic, you'd say the thing that matters most is my own virtue, my own character. To be happy in what you're doing because it's a reflection of your character.

So my question to you is, do you feel like there's purpose in the repetitive nature of life?

that's an interesting question, but

it's similar to asking why ever have more than one cigarette? why ever eat a steak once? Why not just eat a steak once? Every time is a little bit different, I'm getting that from, actually that's something that Jane said to Jesse and, a breaking bed.

Okay. So that's where, oh, when she was talking about drug use no. They were talking about. I forgot her name, but this artist had drawn [00:09:00] a door like 20 times her front door, 20 times, Jesse was like, why? Keep painting the same door over and over again.

Okay. And then Jane's response to that was, should we only have one cigarette? Should we only fuck once? No. 'cause every time it's different. Okay. All right. So the fact that every day is a little bit different from the one before, is it some level of purpose? Also, we force ourselves to work, the biggest issue, right? The reason why you will think that none of it's worth anything or that it's meaningless is because the reason you work, right? The reason why we have these specialized jobs is so that you actually have to do less, but we're not doing less. We're doing it more.

We're working way more. You can find more [00:10:00] purpose in life. You'll have more space for the things you want to do, if you do this specialized job, but that's not usually true. At least not in American society. And surely not Nazi occupied French society.

So you and I, like to hike. Most people like to go on trips. Most people like to meet new people. That's what that specialized job is supposed to give you, the freedom to do that. When you are nomadic and just taking care of yourself

and your family, you actually don't need to work that much,
You don't need to produce that much,

If you're just hunting and collecting berries and shit like that. So I read that the average hunter gatherer, works less than 30 hours a week, right? as far as collecting food and taking care of their shelter and clothing It's actually less than 30 hours a week of work.

Yeah. And it's social work. they are socializing as they [00:11:00] work. And that's a huge problem with our society is that we are not really getting any ROI on the amount of work that we do. Is that also because we're not sharing space, we have this whole house and our neighbors have their whole house.

There are, 800 billionaires in the US and between them and the rest of that top 1%, they own more collectively than, I believe 50% than the bottom 50%. that's completely inequitable and there's no way they could ever make that money themselves.

you and I, don't get much ROI on the work that we do. so much of it is going to profits and expansion. Oh, okay. But it's not ending up where you and I actually see any return on investment.

Okay. I hear what you're saying. my taxes [00:12:00] should not be going to bailing out malicious acting corporations. Yeah. I don't want, I don't wanna give them that money because I already gave them the money and I gave them the work. Yet I would like, if I'm going to work so damn much to have my own healthcare paid for without fucking having to rebuy it.

And having to fight your insurance company when you get sick. You want to guarantee that when I needed coverage, my insurance company just took care of it. They didn't fight me at all. So when you say that basically your money is going to a lot of profits, and not only that, but you are being taxed to provide a safety net for those profit margins.

A lot of what the Federal Reserve does is try to keep the financial system stable. They do that by shifting interest rates. They also do [00:13:00] qe, they will also extend lines of credits to banks that are in trouble, things like that. But basically they push cash into the banking system.

The first economist to actually say we should just have a universal basic income was, Milton Friedman. He was a very conservative economist. a conservative libertarian. And basically what he said is, the government has to push cash into the economy.

you have to keep pushing cash in or else, you're gonna wind up having loans that go bad. then the whole financial system will eventually collapse. when loans go bad, those are bad assets. they have to pull in more cash. you get cascading defaults.

to avoid that, you have to keep adding cash. So you have to have some price inflation. Wage inflation in the economy. And what he said is really the equitable way to do that is just say, here's what [00:14:00] the inflation rate is. Here's what the unemployment rate is, right? And when inflation is too high, you take this amount of money that you give everybody every month.

And basically what he said was, give everybody the same amount of money. If inflation gets too high, you just start reducing that amount of money. When inflation falls below your target, you just start increasing that amount of money. So it would basically be like a universal income, right?

I don't know if you'd call it universal basic income 'cause you're not guaranteeing people enough to survive. But that would be, in my opinion, what I would like to see is the Federal Reserve. Do something more like that instead of creating cash and pushing it into the banking system.

Create cash and just send it to consumers. To keep the inflation rate at Target, and if inflation gets a little high, you just cut back [00:15:00] that. So everybody could have a federal Reserve debit card. And then you have the added benefit of you don't have to have the government surveilling people to see how much money they make and what their healthcare costs are

The government just pushes the same amount to everyone. What do you think, that would be a correction to the system as it exists now? I'm at the point where I think all of it just needs to be redone Elon Musk says, 20 years from now, money won't matter because robots and AI are gonna make it everything so productive and do so much work that you're just gonna be able to have everything you want without money. okay. And I'm sure he is building that future.

Yes. And basically it'll be Tesla robots ai. And in order to make that happen, all you have to do is give him a trillion dollars right now. It's not a scam. Because AI to this point has been so capable. It's [00:16:00] capable of some things.

Yeah. It edits our podcast. Which shakes the foundation of our society that AI is capable of editing our podcast. AI is super useful Yeah. For some things, right?

When companies saying, oh, we're implementing ai, we don't need we're cutting back higher. We haven't hired in a year or two years because we're using ai, they'll say, oh, the workforce here has reduced by 3000 or 500 because we're using AI instead. After COVID, when things reopened, you had these huge growth expectations, right?

Like growth just took off and hiring Companies hired like crazy, like anybody they could get their hands on, right? Because during COVID and immediately after you had the great resignation where anybody who could afford to quit working basically said, you know what, this is crazy. I know a fair number of [00:17:00] men over 50 who had friends or family members who died of COVID.

they said, why should I work another five years? I'm not gonna make \$10 million in the next five years. Why not just retire as soon as I can? Because a lot of people to reevaluate the value of their life and the value of their time,

Right after COVID, you had this huge hiring spree, but then inflation got too high. Interest rates went up, government spending went down, and, growth slowed. So all these employees were no longer needed. companies just stopped hiring and allowed attrition,

to reduce their workforce. if a company says, growth expectations have gone down, so we don't need as many people. Then they look like, oh, we're losing money, and investors are like, oh, no, forget it right then their stock price goes down.

But if they say, oh, we're investing in AI so [00:18:00] we don't need as many employees, then you look like you're innovative and you're cutting edge. Yeah. people I've talked to in these companies are saying, AI is not getting implemented at that high of a level. And like a lot of the people there that, how do I put this?

Where the companies say, oh, we don't need to hire to replace 'em. Like they're winding up hiring to replace 'em. It's just, it's delayed by a few months. So I think there's a lot of hype there and a lot of, we will just say there's a lot of, shining the turd. You know what I mean? Anyway, that was a long discussion from the myth of Sisyphus. the biggest point I wanted to make is that We are taxed the most we have ever been we don't get a whole lot for it. We aren't getting more than we got before. Return on investment would mean not your money, going [00:19:00] to pad these corporations that when they fail it's usually not a bad thing because they've been problematic.

That said, rather than the money going there, I'd like it to go towards feeding everyone, because I have my health Right now. You have your health right now, right? We're both able to work. We could get t-boned by someone running a stop sign today, We were both in the same car today.

If both of us went down, who would feed us? Oh yeah. Yeah. We'd be in deep trouble. there isn't, a very good safety net for the amount of taxes we pay. if you take, what you pay in taxes plus health insurance and all that, you actually pay a higher percentage of your income in the US towards healthcare.

Yeah. If you take for worse healthcare for healthcare, that has some of the worst outcomes. Like in the world, in the developed world, we pay more [00:20:00] in taxes plus health insurance than they pay in just healthcare taxes. So I agree with you. We should get a better return for what we spend.

I would rather the safety net be for the common person than for these mega corporations. Completely agree. It's ridiculous. if the government has to bail out your company because it's too big to fail, the shareholders should lose everything.

But that's not what happens. The government bails the company out and the shareholders don't lose any value. If the government bailed out a company and said. We had to bail it out, now we're gonna chop it up and sell off the pieces to reimburse the government, to reimburse the taxpayers.

But what they do is they give the company a lifeline and the shareholders still get paid dividends It's crazy. And it never trickles down. It hasn't yet. it's only been 45 years since we had the beginning of [00:21:00] trickle down economics, so bound to happen anytime now.

Any minute now? Yeah. You wanna look at some comments? Yeah, I think we have some regular commenters now. Ian Wilson has talked to us before. Ian Wilson, 42 62. This is where I was talking about solar panels and how there isn't really the infrastructure to recycle 'em.

at least not in the US they can be a toxic waste nightmare. in the US we don't have the infrastructure. nationwide we don't have an infrastructure. For recycling solar panels. But Ian Wilson, 42 62 says up to 99% of a solar panel can be recycled.

You could get your solar panels recycled for free. Under UK law, solar panel recycling is getting even more eco-friendly.

That's also news. I [00:22:00] totally believe that the components are, very recyclable. The components are very recoverable. I just, in the US unfortunately, we don't have that infrastructure. Yeah. Yeah. Kudos to our neighbors, Good job. Folks across the pond. now they just need to build that infrastructure for lithium batteries.

I've seen a recycling process for lithium batteries. they'd basically throw the whole thing in a vat and it would get chopped up into a slurry. all the metal pieces and everything would go to the bottom. And the lithium would be caught in the solution in the acid bath.

Then they'd just draw off the solution. Okay. And then all the plastic and metal and everything would be at the bottom. Cool. And they'd send all that off to its own recycling? Yeah. The only reason I mentioned the lithium battery recycling is there in the uk the EV car [00:23:00] problem. There are tons of EVs that are just abandoned on the side of the road because the lithium batteries become unusable.

Really? What's causing 'em to become unusable? Just, low quality lithium. Lithium ion batteries that are made by, cheap Chinese EVs. And the way the UK has it set up right now, at least my understanding of it is if you wanna run a mid two thousands vehicle they're going to charge you an old car tax,

it's a higher road tax, higher insurance premiums, and, really the government is just trying to convince you to move on to an ev. And then having an EV with the lease and insurance and everything is about 200 euros a month. But not counting how much you use it, right?

Oh, wait, there's no gas. So not counting charge fees. And that's if you don't just charge it [00:24:00] at your house, because they, all of their outlets are two 40. Okay. They're trying to motivate people moving into EVs. And these cheap EVs are, they're cheap. But they're problematic because nobody can recycle it. Oh, I see. Okay. So the vehicle itself is not recoverable. So there's no way to dispose of the car when it no longer works.

And so people leave it, some of these things have lifespans that have been as low as three years. Oh, that's terrible. That's a disgrace. Hopefully that improves. I understand now why there's a lot of people in the UK have animosity toward electric vehicles. Yeah.

there's a lot to be said about. Our government, especially right now. But UK government is screwing the people on that, on the EVs? And it's because people are being [00:25:00] bought by these companies. When really it doesn't make sense.

I think what would make sense is pushing hybrids. Okay. Because, Toyota Priuses, I still see o fives out here. Yeah, that's true. And yeah, the lithium battery by now has had to have been replaced. Multiple times. But those kits are getting cheaper and improving.

Okay. You know what I mean? the worst case scenario, that car holistically can just run on gas, right? Which creates a safety net for the end consumer The car might be operating in limp mode, but they have a car that works. Because you still gotta get to work the whole car isn't dumped.

you recycle a lithium battery pack, At a minimum, if you take it to a recycling plant, assuming they're following EPA laws is not going to end up in your fucking water. Yeah. Even if the only thing they do is [00:26:00] incinerated it, whoa. Yeah. I don't know if they just incinerated it, but they shouldn't.

They should be recycling it, but if they incinerated it, that's better than letting it get into the groundwater. You would still have lithium oxide. It wouldn't become airborne. So you'd just be putting the lithium in another chemical compound.

I'm with you. to have a bunch of vehicles on the side of the road because they're not recoverable, doesn't make any sense.

And to push people into vehicles that are only gonna last three years. people gotta live, people gotta work. But all in 200 bucks a month. They, or 200 euros, which would what be two 50 here? Yeah, I think so. Maybe 300 about that. Yeah, about two 50. So to own and operate, the whole vehicle is 200 a month, but it might only last three years. You don't own it. It's leasing. which protects the consumer well.

Yeah, I was gonna say, can't you just take it back to the company? you lease a new one, [00:27:00] and then that one gets thrown away, and then you lease a new one and then that one gets thrown away. Yeah. No, I'd do that if I could do that. Yeah, totally would do that. Right?

That would make you part of the problem. But the thing is, I think most of these systemic issues, it's not on the end consumer to make a moral choice. You know what I mean? Okay, sure. An animal is going to protect itself. So the moral thing then is to not build a system like that.

And if you have the means, Keep your car. That's not gonna end up on the side of the road in three years. But if you don't have the means, I'm not gonna judge you for choosing that economical choice. So that's just where I'm at with it is really on the system.

' cause I doubt many of the people supporting this EV system, either A, understand or B supported. Okay. On that note onto the next, yeah. The Matrix Red Pill Truth versus Happy [00:28:00] Fantasy, malal 6 5 1 2 says it is better to, is it better to know the truth no matter how brutal it is? Or better to live a happy lie?

It's up to you to decide. Which was kind of, the point we were getting at in that portion I kinda stand at the point where it's better to know the truth. 'cause you can always fix the truth. I don't know. Sometimes you can, sometimes you just gotta live with it.

You can fix the truth. Okay. there's a saying, People who hand out the brutal truth, enjoy the brutality as much as the truth. I'm not talking about being a fucking dick. Okay. If you're a burn victim and your face has been disfigured by that, I'm not going to give

Present you the brutal truth every time I see you. Okay. I understand what you're saying. For me personally, given the

position I'm in life, I prefer the brutal truth [00:29:00] to the comforting lie. Okay. Because I can't do anything with the law. The brutal truth. Yeah. I'd rather somebody say it nicely or in a way that doesn't make me defensive, where I don't have to become defensive in the moment.

But I would also rather have the data, I'd rather have the true information, than have myself put at risk by running on falsehoods. Yeah. Anyway, that's what said to be said on that one. Evolution of emotions. Why positive feelings? Basically what good, what's the evolutionary value of positive emotions?

And you said, if you're sad too often, it's actually unhealthy for you. And Sage 14, 12, who I swear has commented before. Said, I like that. If you're sad too often. Thank you. Dude, our comments have been much more positive this time, right? Yeah, no kidding. social media addictions, the nineties versus today's world.

So that one I was talking about the [00:30:00] Ian speech in the Matrix four, where he comes back as a homeless person and basically says, yeah, back in the nineties we had elegance and all that. But now all we've got is social media, like people don't even meet face to face, it's all through screens.

Mega Capo 12 says, Jesus, the Matrix was about the filmmakers transition. Everyone just making shit up.

I didn't get that sense from the movie. I know the Wachowskis both transitioned.

But I didn't get the impression that the entire, series was about transitioning. they said it's all a transgender allegory. Really? So the directors of the Matrix said the whole series is a transgender allegory.

Lily Wachowski says the Matrix films are about being transgender. The Trilogy's co-director says That was the original intention, [00:31:00] but the world wasn't quite ready, says Lily, who came out as trans along with her sister Lana. After the films came out, fans have speculated about potential meanings behind the iconic films, and Lily confirmed the theory to Netflix.

I'm glad that it has gotten out The Matrix. The Matrix first screens in 1999 when Lily says the corporate world wasn't

ready for an allegory. about transgender people. The last one, agent Smith, it's where you were saying Agent Smith is your favorite character and, Elon. Dans, yeah. Elon Dans, 38 89 riveting content lens. I appreciate it, man. we're doing well in the uk man. I'll take it. all the love from us to the land across the pond, part of the reason we might not be getting the hate comments we're used to is we're not being shown to, [00:32:00] hateful people here in the us.

Yeah. all of these companies that have been supporting the size shit, they've been trying to not show Americans. All the speaking out against it. So by putting it in our content, we may be getting silenced. Oh, really? Yeah. But that said, I can tell you Our shorts and everything are getting plenty of exposure. may not be as much in the us It may just be an alert to them also that this ain't their podcast. I couldn't have said it better. So you saw for the first time the other day night Yeah. Pul fiction.

Pulp fiction. Yeah. So I want to get your opinion, but I thought, we'll just look at a few scenes. Okay. So this scene is where Vincent Vega takes Mrs. Wallace to Jack Rabbit Slims. they have the twist contest.

And the two of them, they rock [00:33:00] it and win the trophy. So what are your thoughts on Vincent Vega and Mrs. Wallace?

Vincent was put in a pretty impossible situation there. I described it to you last night that,

Marcellus. As far as Vincent knows to this point. Marcellus is a merciless person. Vincent believes that he has thrown someone off of a four story building for massaging his wife's feet. And then Marcellus sets up this date for his wife and Vincent. And then the entire time his wife is essentially provoking him to do more and more intimate shit with her. And so I really felt for Vincent in that moment.

Because he couldn't tell her to fuck off, he couldn't leave himself, but as far as Vincent goes, as a man, he was [00:34:00] overall a pretty brutal person. So Vincent Vega is extremely, he just strikes me as just not very intelligent. Yeah. He's ruled by his impulses.

He's the only one who's shooting up heroin, right? He's always saying, oh, I gotta take a piss. Oh, I gotta take a shit. the way

he dies, Butch. Yeah. He left his gun, right? You're supposed to take your gun with you. for that exact reason, right?

Yeah. He leaves his gun in the kitchen For sure. And then when he comes outta the bathroom, if you were wondering if you have a condition one through four, weapon, which is just a gun with a loaded magazine, it stays on. That makes sense.

Just for safety. An interesting thing where Vincent keeps saying that he just got back from Amsterdam. Quentin Tarantino, his movie that did well before Pulp Fiction was Reservoir [00:35:00] Dogs. And, he made enough money from Reservoir Dogs, to be able to take some time off

From working at a video store. Okay. And, he went to Amsterdam and that's where he wrote Pulp Fiction. Oh, okay. That's pretty funny that's why it talks so much about the differences between Europe and America Yeah. He wanted to throw some fun facts that he learned out there. Yeah. Little Big Mo. Yes. And the royale with cheese. Yes. Because of the metrics. Yeah.

Oh yeah. The captain. Yeah. That's Christopher Walken. That's the actor. I love that actor. this is when he is talking to Butch as a kid. Yeah. And he basically hands him this watch, this cursed ass watch. tell me. 'cause I had never picked up that the watch was cursed.

He basically describes to Butch as a child. Your great-grandfather died while he was wearing this. Your grandfather died while he was [00:36:00] wearing this. Your father died with it up his butt. And now it's come to you. You were the one who pointed out to me that watch Sounds like a death sentence.

And then he nearly dies for that watch. He risked his life. And then once he was left and he had it on his wrist, Marcellus nearly killed him. the only thing that saved him was he stopped Marcellus from continuously being raped.

We'll get to that, but you ready to go to the next one? Yeah. This scene? Where, I for, what's it, what's, Samuel l Jackson's character's name? Jules. Jules, yeah. Yeah. Where Jules is. And I believe the girl is Roxy and I can't remember the other guy's name. What did Jules call him?

Ringo, yeah. that's an interesting scene. It's the final scene of the movie. And they break it up from when it actually

happens. Because he [00:37:00] gets shown. The first half of that scene at the beginning of the movie, and then the second half at the end, and at the end, Vincent is already dead.

the whole thing, it's nonlinear, The segments are not in chronological order. Because everything with Butch would've happened after this. maybe the point of this scene or the point that Quentin Tarantino was trying to get across is Jules had experienced this divine intervention. He had this religious experience when he was shot at by a revolver six times, and all six of the bullets miss 'em. And the way the camera is set up, it's actually some of the bullets land directly behind them. Where there's no way, the idea of how the camera is set up is that if you were the guy who was shooting at him, you would be seeing through his eyes. not all of the shots [00:38:00] were. Were around them. Some of them were right through them. Jules chose to see this for what Quentin Tarantino is trying to show for what it was divine intervention. Jules takes that moment, Maggie. He's you know what? Really, I'm the evil in this world. But I am trying so hard in this moment to be the shepherd.

And so Jules miraculously, shuts down these robbers leaves with his life and their lives. Vincent stays, presumably so the scene with Butch where they're in the bar. And Butch is talking to Marcellus Jules and Vincent walk in

and They're not wearing their suits anymore. chronologically that happens after, everything in the restaurant Jules moves on after that. We assume he did. He ain't in the rest. That's right. He's [00:39:00] not.

Vince says, oh, I'm staying. Yeah. It was clear from the beginning. Vincent dies. It was also clear from the beginning that Jules was more capable. He's clearly the smarter person. Also more capable he's better at that job. Yes. Vincent is, like I was saying, he's a slave to his carnal desires.

he can't say no to his addictions. But Jules has this higher view, he's like a step up because he says, there's something spiritual in this, that I need to follow. we can assume that saves his life. And Marcel his goal is, money and power, right?

So he stays alive by pursuing money in power. And Butch just wants to get free and hang out with his girl.

Butch goes about that by ripping people off, right? Yeah. He also has his [00:40:00] father's watch, his great granddaddy's watch. That he'll sacrifice anything to keep with him. So even he has some higher purpose. But Vincent Vega, his only goal is just to chase the next pleasure.

Which he might have had a realization after, Mrs. Wallace nearly dies

when she nearly dies, and he saves her life, by giving her the adrenaline shot. Isn't that right? Yeah. The epi epinephrine. Yeah. Yeah. It, her whole interpretation of that, she makes it evident at the end when she says to him, until the next time. Okay. Makes it evident to him that she interpreted all of that on the summation, on the whole as fun.

Okay. Just another day in her life. Just the thing that happened. Yeah. and Vincent is looking at her like, what the fuck? [00:41:00] So is part of the idea there then though that she's able to pursue this hedonistic lifestyle, but she doesn't have to worry about paying for it or making it work?

Because Marcellus makes it work For her. And she does have this belief that she's invincible too. But it's because other people keep her alive. Vincent knows that he has to keep this going himself, and he knows he has to keep himself alive, and yet he still just keeps on going.

Vincent is easily the most problematic character. Is he really stupid or is he just weak minded? he has an appreciation for his own mortality. So that gives him some intelligence. But then. Leaving the gun on the counter when he goes to take a shit.

Oh yeah. It's insanely stupid. And especially given the business he's in. The question is whether Vincent had the realization, determination between whether he is [00:42:00] stupid or weak minded.

When he is placing that gun on the counter and choosing to leave it there, when he goes to take a shit, is he forgetting that he should take his gun with him? Or is he remembering but doesn't want to deal with the hassle? Just apathetic. Doesn't want to deal with the hassle of lugging the gun with him.

That's a fair question. That would answer the question. If only he didn't get the moment to explain himself. You ready for the next scene? Sure. The end of Marvin for no fault of his own. And Vincent was being careless with his weapon.

So it's never the victim's fault. But Marvin, my guy. Like in the apartment, Marvin just sits there and watches, right? Apparently he works for Jules and Vincent, he didn't come in with him. But apparently he's, is he the one that informed on his friends?

My assumption was from the way they just took him and were talking to him and asking him questions that he was [00:43:00] part of their crew. Yeah, Marvin. Marvin was the informant. Okay. so he wasn't necessarily part of the crew.

Yeah, he was the informant. the rat. So the way I viewed it before was that Marvin was just part of the group and they were taking him because Marvin was a witness and they didn't want to kill him. They wanted to remove Marvin from the scene

They might have paid him off later or something, right? I was saying Marvin should have left that apartment. Oh yeah. Especially before they first addressed him, And during the shooting, he should have been gone. Yeah.

Even before bullets started flying. He should have been out that door. So I'm guessing Marvin was owed money. That's why he went with him. He was probably gonna get a debriefing by Marcellus, basically saying, you talk, you double cross us. That it's the end of you.

Yeah. You've seen how we operate. Here's your stack, since he was part of that [00:44:00] game,

did he deserve it? I don't know, but he was in the game. A fair assessment. Also, Marvin crossed his homeboys. Every single one of 'em died. That's true. He was in the Hotel California, man. Like he could inform on his friends, but he couldn't escape their fate.

And so Marvin, through that take, he got what he deserved. it's hard to say what people deserve and what they don't. Because we didn't see a summation of his life. we don't know what was in the briefcase, but I will say this, we don't know if Marvin's friend was the legitimate owner of that briefcase. We know that it was stolen, but was it stolen back or was it something

that had no ownership and it was just a race to get? The briefcase with Marcellus shiny golden thing, whatever it was that everybody loves and thinks is so beautiful, but we never [00:45:00] get to see what it actually is.

Do you, what kinda allegory do you think there is in that briefcase? it's any overwhelmingly positive, valuable thing. You can assume it's valuable because Marcellus wants it. You can assume it's positive because even bystanders think it's wonderful. The thing is, it's all super underworldy, like crummy kind of people. That you wouldn't hang out with, and yet they're in possession of this incredibly beautiful something super cumul.

Ready for the next Oh this is The most famous scene from pulp Fiction. Where they're in the basement of the pawn shop with the ball gags in their mouth. The choice to rape Marcellus probably saved Butch's life.

Okay. Why Rules reversed. If I were Marcellus, this guy's already crossed me. My moral code would probably, I'd probably give [00:46:00] myself kudos in Marcellus his position if I see Butch getting raped and I just put him down. So you're saying Marcellus would not have saved Butch. I agree with that.

I think Marcellus probably would've just killed him both. Done everybody in there Wouldn't Marcellus have been able to get his hands loose? 'cause Butch was able to get his hands free. Yeah. But Butch just overpowered it. he didn't really use that much technique.

He just overpowered those knots. And if you look at Marcelo's build compared to Butch's. Oh yeah. Marcellus is much bigger. Yeah. Ving Rames, he was built like nobody's business. I don't think he's actually still alive. I think Ving Rames passed away. And Bruce Willis right now is he's, he has frontotemporal dementia and he's in long-term care.

Like he's nearing the end. Gotcha. It's interesting to me because [00:47:00] this movie came out when I was 17 years old. I saw it in the dollar theater, After the movies played in the regular theater where it was like five or six bucks to go see it, then they'd play it in the dollar theater.

Okay. And actually the dollar theater was better than the regular theater. 'cause you could go there and you'd see the

movie for a dollar and there was video games. There was, like the, even the popcorn and everything was cheaper and oh, the dollar theater was better than the regular theater.

I don't think they're around anymore. You got screwed, dude. Sorry. when we saw Gremlins, how much did they charge you? You know what? I didn't check. It was like \$30, but I think the tickets were like 16 bucks each. Oh, okay. You got ripped then. It was so cool to go to Parkway Theater.

Yeah. Parkway Theater in Minneapolis. It's fricking and awesome venue. If you're up here, if you're visiting here, [00:48:00] go to Parkway Theater. See a show. Yeah. It And they can't really be cheap anymore. 'cause not everyone wants to go watch a movie. Yeah. I tend to just download my shit that I wanna see.

Yeah. That's the thing is streaming is eliminating theaters. I don't stream. Downloading, whatever. We watched Pulp Fiction on YouTube. That's true. Vicariously. I streamed it.

what I was gonna say is it's weird for me to have watched that when I was 17 years old and now all these characters, they're old men now. Some are dead, some are dying. they're in their seventies. So strange for me because

30 years from now, it feels like yesterday. I was In the dollar theater watching this movie. Hopefully you and I both be watching these videos, like, damn, that was yesterday. Remember yesterday when we made this podcast?

[00:49:00] And you'll be starting to have FTD and I'll just, man, I hope not. Dementia is just the one thing I do not want. Okay. I don't want cancer either. But you'll live long enough to get it, dude. I hope not. I hope I live long and don't get it.

I hope so too. But cerebral atrophy is what it is. if you look at married people married people tend to outlive unmarried people. it's huge. Like it's for men, it's, you live 12 years longer for women on average, seven years longer. Part of it. So in happiness surveys, it's been found that married people on average are happier than single people.

there have been studies that found happier people are more likely to get married. There's some nuance there. Does marriage actually make you happier? Or does being happier

make you, what? Is that what actually leads to you getting married?

I tend to think maybe one builds on the other. You're [00:50:00] already a happy person. being married on average makes you even happier. If you're also describing people that make it to end of life with their marriage. The,

the biggest impact There has not been formal research on this, so this is what the data looks like to me. Having another person you live with. That you talk to every day just reduces your risk of dementia And memory loss, it kicks out those neurological problems so much further.

I think the bulk of that life extension is probably the socializing. And it protects you a little bit from dementia. it probably also has a positive impact as far as heart disease because your sympathetic nervous system wouldn't be as active all the time.

Marcellus being the chosen victim probably saved Butch, saved him both. Yeah. Because Butch went and saved him. Butch nearly ran [00:51:00] out the door, but then he chose to look back and once you reconsider that he's sentimental.

he went back to his apartment to get his watch when he knew someone would probably be waiting there to care. And the, he abused the person in front of him over forgetting it. Yeah. Yeah, that's true. He abused, he Fabian, right? Yeah. His girlfriend. Yeah. Which the person in front of you is way more important than the watch.

I agree.

Butch's character was volatile. I am saying Bruce Willis is an asshole. But the character, Butch was very impulsive. He had enough forward thinking though. He knew that if he rigged

the fight, he would have a bunch of people who bet on it. So he bet on himself. In another town, he was in LA and he had his bookie in Nashville, set all the bats. Yeah. And so he puts a bunch of money on himself.

He goes in. Beats the guy [00:52:00] till he is dead. it worked out, but going for the watch was a mistake. There was no plan or anything. But I'm glad he went back. pulp fiction is about

Vincent and Jules, to me Butch is Deus, ex McKinna God in the machine.

He's the character that pushes the story along. But in a sense, he also is a main character of his own story within the story.

you had it, Butch is an entirely different story. It's a separate story from Vincent, and it's like a subplot. Yeah. I guess that's what I'm saying. Yeah. if you look at it. From the shooter's eyes, I believe those two center bullets would've gone through JUULs. Yeah. They should have gone right through 'em. Yeah. And the bullets to the right of those should have gone through Vincent. Like one of 'em should have hit [00:53:00] Vincent.

And Jules describes feeling God there. That's what's significant. Vincent and Jules, get into this argument where Vincent's like, that was just dumb luck. It shook out our way. And Jules says, maybe, but what's significant is that I felt touched.

Which demonstrates to him that it was divine intervention. But Vincent didn't, how much of that was Vincent? Just not letting himself feel that? And how much of that was Jules choosing to see meaning where there wasn't any? Because objectively you and I can both say that's a risky way of living.

Yeah. The way that Jules and Vincent did. Yeah. They were living on the edge. How many cronies do you think died before. Marcel has got those two. Oh, yeah. I'm sure he goes through a lot. so there's this idea of, fast life history, strategy. And [00:54:00] basically what it is as a child, you are subjected to extreme adversity and deprivation trauma or extreme illness, right?

Okay. Or just being sick, right? your body and brain adjust to say, how do we survive and reproduce, the gas gets pressed on everything about maturity. You go into puberty earlier, you become more of a pleasure seeking creature, your brain cells, create more, dopamine receptors, okay?

So you become more dopamine sensitive, right? So that leads you to become more active and pursue more pleasure, You have a higher feeling of motivation. The other side of it though is it also makes you more prone to things like psychosis. Jules and Vince are pursuing this fast life history strategy. Okay.

The other [00:55:00] side is a slow life history strategy. And basically if you grow up in this super stable environment where things are stable and abundant, then all of those maturity posts, all those sign posts get pushed out a little bit.

Okay? So there, there are a lot of people who say, the reason you see so much delay in childbirth, in the developed world is because more people are naturally pursuing a slow life history strategy. All these underworld figures, all these criminals,

They're all pursuing this fast life history strategy you literally age faster. What about Marcellus? He's much more calculating and look at the wolf. Oh yeah, the wolf. I think it's the Wolf's side hustle. he does it for the love of the game.

Okay. That he's otherwise actually wealthy on his own. Yeah. Or maybe he did [00:56:00] this kinda shit coming up. He made it and that's how he pays his dues. Oh, okay. The funny thing about Hollywood and TV shows is they portray the craziest part of the wolf was Vincent's indignation with him wanting him to say, please, oh yeah.

When the Wolf is there cleaning up, Vincent's mess. he just directs, he knows what to do. The three of them. Jules, Vincent and the homeowner. Uhhuh. They could have figured that shit out.

The homeowner is played by Quentin Tarantino, by the way. Oh, that's awesome. Yeah. He puts himself in all, he gives himself a role in all his movies. Cool. Yeah. The good for him, man. Anyway, back to the homeowner. Yeah. The three of them could have figured that shit out, but the wolf had, the wolf just had better control of the situation

the wolf's [00:57:00] value is undeniable, right? Jules might've been capable of that kind of decision making, but, the homeowner, right? He was apprehensive about his sheets, giving up his bedding, Uhhuh.

And the wolf was able to quell that response. Yeah. Just buy him off. Really? Say How about I get you a better one? Yeah. the wolf had to address the sentimental value. And given Jules and his relationship, him and the homeowner, I don't know that Jules would've been able to convince him even if he said the exact same things that the Wolf did.

And we both know Jules wouldn't have worded it that way. Oh, So I really like the way Jules talks in the movie. He's straight up, man, check out the brain on Brad. You are one smart motherfucker. I think that role actually created Samuel L Jackson's actor persona.

Because the whole rest of his career, he's talked kinda like Jules. He did an excellent job. so I would say that [00:58:00] role was a, that role of playing Jewels, that was a, that was, I put a pivotal moment. I put that Yeah.

personally I think the best performance by a movie actor. was Tom Hanks in Forrest Gump. Okay. Like that's just,

I cannot think of a better performance of a character by an actor. But, Samuel L Jackson's portrayal of Jules was, I can't put it quite in the same category but maybe the next category down. It's a com it's, yeah. He, and one that jumps out to me as a hateable character.

The mo probably one of the most hateable characters in cinematic history is played by Samuel Jackson in Django. Oh, Django and Chain. Yeah. Yes. Oh yeah. He, that was an off the chain role. He played it perfectly and I hated that character.

The actor who plays the Commandant of [00:59:00] Auschwitz in Schindler's List. plays that role so convincingly that You will hate that man. He plays that role so well. in fact, the real person he's playing, was so reviled that the SFS even executed him.

Oh, wow. Yeah. 'cause he was even awful by their standards. Okay. You can look up the name of the guy who played the Commandant in Schindler's List.

he won Best Supporting Actor for playing that role.

A Amen. A Amen. Goth is the, was the name was played by Ralph Fian. Ralph Pianists. So Ralph Pianists played a Amen Goth. A Amen Goth what really was the Nazi Commandant of Auschwitz. And you know what, we'll watch Schindler's List. If you're pissed off that movie will piss you off even more.

Samuel L Jackson's ability to act is, without him, I don't think that movie could have been Without Jules. I personally think [01:00:00] any other character, you could swap out the

actor for someone else, but I don't know that anyone other than Samuel L.

Jackson could play Jules. I'm trying to think of the county argument and I'm not really coming up with one. Okay. since we're talking about divine intervention do you have any thoughts on divine intervention? Is it a real thing? It's for sure something people perceive.

Because you can. We've talked about this point a couple times where overcoming addiction, you gotta get some really true, deep prayer in. Or some really true deep meditation in. And divine intervention is something that happens to people. They are able to make fundamental life changes So it has to be something that occurs in your brain that affects your neuroplasticity. That said, I don't believe in God. I don't believe in a God. So [01:01:00] do you believe in anything divine? Outside of unobservable. so you recognize that it's a possibility.

Yes. But, you think it's less likely? Yeah. More likely than not, there is no God. Gotcha. That's how I see it. Okay. that said, there's, been a shit ton in value to a lot of religion. especially on the individual level, when it is not institutionalized,

I can't make a substantial argument against it on an individual level. Obviously institutions like the Catholic church, we can easily dify, right? A ISIS has their religious component to it. The whole thing is religious extremism. What I would say is it's, extremism with a veneer of religion.

Most Muslims, detest isis. Oh, yeah. Uhhuh, it's, oh, my [01:02:00] bad. No, you're okay. But yeah, so as far as an institution goes, for the most part, I for the most part, institutionally it can be a good thing. I think 'cause it's a way to put communities together.

A shared belief structure. That said, using it as a justification for violence or systematic, oppression, it's unacceptable. Yeah. And there is no space for it.

So I'm gonna tell you about the Hubble tension. To do that, I gotta start at the beginning. Okay. And that Instanton is a single particle where time and space, all space time is all one dimension. Like they're completely collapsed into a

single point. So when you call it an instant time, it's because all of time exists within that one point.

And in [01:03:00] fact, you don't even have what we would call a chronological sense of time. Stephen Hawking describes it as imaginary time. if you thought of a globe, Where you have a north and south pole, You have lines of latitude that go around it.

And lines of longitude that go from pole to pole. So you could say those lines of latitude are real time, and those lines of longitude are imaginary time. it's a mathematical idea. Complex numbers where you have the real component. Four, an imaginary component, so four plus i .

Yeah. Four plus two, i four plus three i , So the real component situates you along a line of latitude. A specific track of real time, And then the line of longitude puts you at a spot in imaginary time, it's that imaginary time that [01:04:00] gives the universe shape. in that instant time, there is no real time.

All there is the imaginary time, okay? So just like with moving along a line of longitude, you go from pole to pole. Whenever you move in time on an instanton, you are just moving from pole to pole, One moment is not separate from another, But if that imaginary time inflates out just a little bit, then you can see on the right, you get a track of real time,

That it can then follow. And that point at which you inflate from purely imaginary time to having a real component.

so it's pure conjecture right? How the big bang happened. The big bang, just quantum [01:05:00] fluctuation within an instant time it inflates out, it grows out a little bit. now you can have a realtime component And you start moving along that realtime track Okay. Or multiple realtime track.

So you have that initial moment when the instanton begins to, when the instanton begins to grow. you have a time track, a track of real time. you get all these little quantum fluctuations within this super tiny universe. smaller than a proton.

Okay. within that, you get all these quantum fluctuations. you've gone from a universe where there is no separation

between time and points. it's the same throughout, wherever you went within it, everything would look exactly the same.

Time would feel the same. now you have this expansion and these fluctuations within this little sphere or whatever the shape is,

and then you have this moment where [01:06:00] all of a sudden it inflates faster than the speed of light. If you look at this timeline, you see this period of inflation, right? And that period of inflation is over by the time you get to 10 to the negative, 32 seconds after the big bang.

Okay? Think of how small,

yeah. What is, plank time? I don't know. I think 10 to the negative 43.

Is it plank? P-L-A-N-C-K

10 to the negative 44. 10 to the negative 44. So you can actually have many moments of plank time. You can have a trillion moments of playing time, within that 10 to the negative 32, so you can have a lot happen. How do you calculate that? How do you come up with that 10 to the negative 32 10 , negative 44?

You can look up how, what it is those are units at which all the known laws of physics still apply. Once you get to time [01:07:00] periods shorter than plank time. You can't, not all of the known physical constant supply anymore. Oh, okay. So

you have this little ball that has gone from being, unbearably small to the size of a proton. in just an instant it inflates from being the size of a proton to the size of a tennis ball. it happens faster than the speed of light. if it happened at the speed of light, then you would still have all those different fluctuations moving back and forth within it, and one would be able to get to the end of the other.

Okay. And so you'd wind up with a universe that was. Completely the same throughout like homogenous. So now you can have a universe that's heterogeneous, right? And then the universe continues to expand from that tennis ball [01:08:00] size. if you go to the previous slide, there are some conjectures or theories, that suggest that inflation actually never stops.

Like you have inflation within one part becomes inflation in another part, and so you wind up with all these universes, you wind up with a multiverse. one way to picture that multiverse is you have all these Hubble bubbles, basically spherical universes out there separate from each other.

The inflation just goes on and on one inflates out of ano of out of the next, or one inflates outta the one before it, and then another inflates out of that. And it's just eternal inflation, right? Another way to describe it is to say each one is sitting on its own. Surface of space time.

So they can actually all be stacked up one on top of [01:09:00] the other, just like these little flat panels. But each is within its own surface of space time, so they can't interact. If you go down to the next, you can see that after inflation, you get to a microsecond and that's when things have cooled enough for protons to begin to form. you have this period of time where you have protons and electrons, you have barons. Obviously you would've dark matter too.

But it's so hot that the electrons are flying around free. they cannot stick to the nuclei. Okay. photons are released when electrons drop in their orbitals. But since there's no electrons in any orbitals, there's no photons, all the photons that were released after the initial inflation or the Big Bang.

All the protons that were released or created in that process, [01:10:00] are basically run into this soup of protons and electrons and get absorbed, right? They just become part of the heat. about four sevenths of all the matter in the universe becomes helium, right?

Because helium is two protons to neutrons, right? So the bulk of that matter at the bar matter actually becomes helium, right? But, because of how much heavier helium is, you wind up with three times as much hydrogen as helium, Coming out of that 25% of the gas in the universe is helium,

Okay. you have this point where nuclear fusion ends because the universe becomes diluted enough at three minutes, and for the next 380,000 years, there's no light. In the universe, [01:11:00] right? So the next slide just kinda, it's free electrons if you go to the next slide, it's free electrons out in outer space.

Thank you Google Gemini for creating that for me. There, obviously there wouldn't have been galaxies or clouds either, there wouldn't have been atoms as we know them. If you go to the next slide, this is NASA's video on, acoustic oscillations,

So what happens is you have this universe where there's this matter and yeah, so there's the big bang. You basically have what looks like sound waves bouncing through it because it's so close together, And those sound waves keep propagating through the whole thing.

you get these bands where there's just more matter than on other places. And when you look out into the [01:12:00] cosmos and measure where galaxies are, you're able to see that there's a group, there's a grouping of galaxies. There's a point where there's an increased number, at around 480 million light years.

And they show it right there on that graph. You see the bump? Yeah. Yeah. So those are called onic acoustic oscillations. And they're basically like primordial sound waves. So if you want to go to the next slide.

Are you seeing the rest? There is something that I wanted to see again.

So the probability of seeing another galaxy is higher the closer they are. So they're more likely to be grouped together than not. So that's how you get this spider web looking view of the cosmic web, with dark matter rivers that stretch across the universe.

[01:13:00] It's a result of these oscillations that occurred before there was really even light. Now that did continue a little bit after the birth of light. If you want to go to the next slide. What is that? That is the cosmic microwave background. the cosmic microwave background, basically the universe cooled to a little bit below 3000 Kelvin,

So think about 3000 Kelvin, How hot that is. And it was enough for electrons to be able to enter those orbitals.

Do you know the boiling? You can look up the boiling point of steel,

or I guess that would be the boiling point of iron

3000 C. Okay. So this is the point where electrons enter the orbitals of those protons and you have like fully formed atoms, right? And so you get this huge release of [01:14:00] light during this period of time, this huge release of basically gamma x-rays, right? But by now it's so redshift that we perceive it as fo, it's basically fossilized light.

It's static that you see anywhere you point up. A radio telescope. And these red and blue parts are variations in heat. These variations are like three micro degrees, So just, one micro degree, it's so little fluctuation, But. What those fluctuations show is that there were places where there was more matter and places where there was less,

so you had all these atoms that formed, but you didn't yet have stars. So that's when you enter the dark age of the universe and you [01:15:00] have a couple hundred million years before stars start to form, this image, on the right, is believed to be the oldest star that we've ever observed, A strong Helium two emitter with an extremely blue UV spectral slope at Z equals 8.16, Z is Redshift

at the bottom of that. Picture of the universe.

So Z is Redshift and you can see at the bottom they have Redshift and it gets higher as you go backward. And then at the top it shows you years after the Big Bang. So a redshift of A is about a billion years after the Big Bang. And a way to think about it too is the universe was an eighth, the size it is now.

And on the bottom left you can see [01:16:00] it's spectrum and you can see it has that spike at Helium two. And that's kinda all it's got. You've got hydrogen and you've got helium. What's helium two?

it would be helium four. That's the helium two spike. That's helium two. What I'm saying is that's the helium's second. Spike. Oh, okay. Yeah. So that helium spike, it's basically the whole spectrum on this thing is just hydrogen and helium. They said there's a little bit of lithium that they could measure.

it's believed that is one of the oldest stars. prior to those initial primordial stars forming, you had almost a billion years with no light. after that initial collapse of electrons

onto those [01:17:00] protons, the initial formation of atoms, you wouldn't have any ionized atoms.

There was no ionizing radiation. There was no starlight, so you would've just had atoms that were completely formed. if you go, you can see on this, you have this period of reionization. After the stars form. But if you go to the next slide,

Those stars were not enough. The starlight of one star. Is not enough to clear the gas and be able to ionize all the gas that's floating in the universe. What you had to have was a formation. You had to have galaxies begin to form. these on here are called faint dwarf galaxies. And you have sculptor A, B, and C, right?

And they are these super tiny dwarf galaxies where they only have [01:18:00] dozens to maybe hundreds of stars, right? And it was believed all the way up until just a couple years ago that it really was impossible for galaxies to start to form like this early in the universe. But two different things happen. One with the JWST, they were able to see actual tiny dwarf galaxies that were formed all the way back at that early redshift, that Redshift of 8, 9, 10.

They also, have found that these super faint dwarf galaxies That orbit, full size spiral galaxies. have almost no heavy elements in them. They have almost no metals. They're almost purely hydrogen and helium gas with a little bit of lithium. they were made up of these primordial stars that, are estimated to have been, anywhere from [01:19:00] 10 to 30 times the size of the sun and only burned for a few million years before they went supernova.

And with how big they were, you wouldn't have even gotten black holes out of, when a star that big collapses, you basically get this huge anti-matter reaction in the center that blows the whole thing apart. You can't even get a black hole out of it. So all the black holes that were forming were actually from the massive gas.

It was just collapsing of gas. it wasn't because of stars. So it would've been like two stars consuming each other.

Even then I don't think it would've been possible because of how big and hot these stars were. Gotcha. It's my understanding. Matter will always form a star before it forms

a black hole with things as they are now. But there's less gas in the universe [01:20:00] now than there was then.

The universe was much more dense. My guess is if you're talking about the super massive black holes in our universe, those probably all started to form even prior to the cosmic microwave background because things would've been dense enough that they could have started to form.

If you go to the next slide, there you go. Most of the photons that reionized the universe came from dwarf galaxies. And this is basically from the results of A-J-W-S-T survey. And so these dwarf galaxies had enough stars massed together that they could shine out enough light to clear the gas to ionize all that gas.

It's like the difference between having one light and having a ton of search lights. Or the difference between having one fan and hundreds of fans.

Yeah. And if you go to the next slide, this is Henrietta [01:21:00] LLL, one of the most important astronomers, as far as our understanding of the universe goes, what she did this all by hand in the 18 and 19 hundreds. she worked for Harvard University, the astronomy department, and she was given all these photographic plates from, Southern Telescope.

she was looking at Cepheid variable stars. the way a Cepheid variable works, and these are stars typically in the 10 to 20 solar mass range, although, some have been found that are as small as three solar masses. what happens is, they produce helium,

And that helium collects within the Corona. And when you have double ionized helium, there's no electrons going around it, right? So if it gets hit with more light, it just absorbs it, it just gets hotter, okay? [01:22:00] It just expands out, It doesn't re-release light so that helium two is opaque. what happens with these Cepheid variables is you get this collection of helium two in an outer shell, and it actually kinda darkens the star until that helium two expands out far enough.

That light can escape That heat can escape. That light can escape, okay? And then all that helium just suddenly ionizes. And you get this release of light, it suddenly gets bright again, and then it slowly darkens. And you can see on the

bottom right, that's what you're seeing is the variability. And as it turns out, the variability of a PHE variable star, the period at which you have that variability and brightness correlates [01:23:00] perfectly with the brightness.

So the brighter it is, the longer the period. So what she discovered was the first universal candle. If you can find one of these stars anywhere in the universe, you can watch its period, and know exactly how much light is actually coming off it. from that, you can tell how far away it is.

Okay. So using those, you can determine the distance. The more accurately you can measure it, the more accurately you can measure the distance. Henrietta Levitt, just to say one more quick thing about her, she had five kids. She also had Crohn's disease at a time when there was no treatment for it.

She lived into her fifties and, she passed away. And when she passed away, people like at her funeral said, not only was she [01:24:00] brilliant and a great colleague and so great to work with, but she was actually the kindest person I knew. Could you imagine people saying that? Yeah. The world lost to Jim when she passed away, but look at the title of that paper.

1,777 variables in the Ma Atlantic Clouds. if you read that paper, it is just table after table that she did by hand of looking at the period and the brightness of each of those 1,777. Can you imagine? Got it now I understand. If you go to the next slide

She did that by hand. While she had that illness and took care of five kids. that is Edwin Hubble. He worked out of the telescope, in Flagstaff, Arizona. And what he did was he looked at, he took that universal [01:25:00] candle that Henrietta Levitt discovered PHE variable stars.

he specifically looked at was M 31 and M 33, and they are both in the local group of galaxies. that map there has the Milky Way in the center, right? Milky Way isn't really in the center of the local group. It's not the heaviest it definitely isn't the center of gravity, right?

So if you go toward that little cluster on the right, you can find, M 31, M 33 is 22. You can see how close they are together, right? M 31 is the largest galaxy in the local group, and it is the Andromeda Galaxy. And M 33 is the third largest in the local group.

The Milky Way is the second largest, right? he was looking at these [01:26:00] variable stars. within the Andromeda Galaxy And in the galaxy next door to it. I have marked in red what his paper says and what he calculated was that the corresponding distance is 285,000 parsecs.

Right now, a parsec is about three and a quarter light years. I don't know why parsecs were chosen.

A parsec is 3.26 light years because it's a unit derived from Earth's orbit and parallax.

So the distance from the earth to the sun is one eu. And that is a single arc second. And so the distance between that of them coming to a point together, Is 3.26 light years. I don't know why you would use that, because then you're just looking at arc [01:27:00] seconds.

Like how far apart are these two objects in the sky? That makes sense. Because parsec would correlate directly to your measuring instrument, your telescope. So by his calculation, the Andromeda Nebula,

M 31, was not even a million light years away, but now we know it's over 2 million light years away. So his instrumentation wasn't super accurate. But you're still talking about photographic plates and measuring by hand. prior to that, there was some debate is the Milky Way. All there the whole universe.

Or are all these little spiral nebula? Are they other island universes? That was Emmanuel K. That was how he described them. He said these are island universes. He was saying that, a couple hundred years ago, but there was debate for a long time, like how big is the universe [01:28:00] really? And what Hubble proved using this universal candle is that the universe is enormous.

There are millions of milky ways right now. We know there's quadrillions of galaxies out there. So if you go to the next slide, that's so huge.

One thing that Hubble found, in a later paper that he published, was that when he looked at galaxies, he kept finding that the further away they were, the faster they were moving. Or the more redshift they were, the faster they were moving away from us.

he found that it was a linear relationship. velocity equals H zero, which is the Hubble constant times distance. for decades after he found this, astronomers kept observing the universe and documenting how fast things [01:29:00] were moving and where things were. they assumed we had this big bang and everything was expanding out, but that expansion is going to slow.

Gravity is going to pull everything back together. In 1998 and 1999, a bunch of papers were published, that relied on data from the Hubble Telescope. The Hubble telescope went up in the late eighties, and started getting all these great images and data, You also had computers that could be used to calculate all this stuff. they looked at type one A and type two. Super Novi. type one a supernova are, where a white dwarf draws enough material off a companion that it explodes, Or two white dwarves run into each other and they explode.

And when that happens, you would think, you would actually get a neutron star or a black hole, but no, what you have is this instant anti-matter reaction [01:30:00] that just blows the whole thing apart, right? And you can see that type one supernova, on the top sitting next to that galaxy.

That type one supernova is as bright as the center of that galaxy. That's how much energy is released. On the bottom you have, a type two supernova. Type two supernovas are basically where a star explodes, Where, a star, eight to 12 times the size of our sun collapses.

And you have enough material left to form a neutron star or a black hole, So what they did was they looked at this and determined the Hubble count to be 71.5 they found that the universe, wasn't slowing down no matter where they looked, it wasn't slowing down the expand the rate of acceleration of 71.5 kilometers per second per mega partex.

[01:31:00] So 3.26 million light years becomes 3.26 million light years, plus 70 kilometers every second. And what they found was everywhere they looked, that was the average rate of expansion, the universe wasn't slowing down. In fact, it was speeding up

And that was 1999. if you go to the next slide, on the upper left, you have this expanding universe, It just keeps on going faster and faster. when I was in elementary school, people talked about there being a big crunch. There was a big bang.

Now the universe will eventually slow down and then accelerate back together.

There'll be a big crunch and the cycle just repeats,

But what this showed was that cycle, there's no reason to believe it will repeat. The universe just inflates [01:32:00] forever, keeps on expanding forever. instead of all that energy being recaptured, it just dissipates, eventually all the matter in the universe will be too thin to form stars anymore

The only energy you'll have left is the energy from matter falling apart from matter degenerating. And then after that, all you'll have is the energy from black holes, right? eventually all those black holes will evaporate, and once they get to a low enough weight, they explode. And you have this flash, right?

But nothing reforms. eventually you just have this. Complete cooling of the universe to where there is no matter anymore. all that's left is photons spreading out in this ever expanding medium of space time. photons are ageless. Photons don't [01:33:00] experience time so effectively, time ceases to exist.

It becomes a thing with no meaning. It becomes absurd. It's interesting, right? So the myth of Sisyphus where he pushes up the boulder, right? You have this big bang where he pushes up the boulder and then this big crunch when it rolls back down and it repeats. You don't even have that.

You just have this universe that expands out till it cools off and becomes completely meaningless. at that point after the nineties, you had two satellites that went up. One is WW Map or MAM Wap, microwave something. Anyway, W Map. and basically it mapped the microwaves in the universe,

And then, you had ESA set up the plank satellite. And what they both did was they mapped the [01:34:00] cosmic microwave background, and they both did this independently. So you have two instruments, and based on the observations in the Cosmic Microwave background, they came up with a Hubble constant of 67.4 kilometers per second per mega parsec.

And they were both so close and so accurate that the chances that they measured this incorrectly is like in the five to six sigma range. So go to the next slide.

What you had next is the shoes collaboration, where it was, the Hubble Telescope, the James Webb Space Telescope and the Gaia Telescope, European Space Agencies Gaia Telescope. And they measured the rate of expansion, the Hubble constant within the local universe, beyond our, local group,

this was called the shoes Collaboration. shoes [01:35:00] basically stands for the things they looked at, supernova and variable stars and things like that, they came up with a Hubble constant of 73. they had many measurements independently by three different instruments.

And again, they have this five to six sigma certainty of this constant. And if you go to the next slide, you can see where back in 2001 you had that 1999 value, right? And it continues to narrow down that band of uncertainty in the blue, that's your shoes collaboration.

And in red you have plank and W map, right? And they're coming out with this lower value and the uncertainty bars just keep getting smaller you have this value for the Hubble constant that's recent and [01:36:00] within our local group, And then you have this value for the Hubble constant that's ancient and covers the whole universe at that time,

And you have this huge disparity between the two, and that's the Hubble tension. And so you have all these possible explanations that are boiling out of it, some researchers are saying, dark energy is evolving.

The value is changing. as the universe ages and as it increases, it'll eventually just rip the whole universe apart, So you'll have this gradual cooling and expansion right now, and suddenly have this runaway expansion that destroys all matter, But then what's the mechanism that's causing that? And is it causing it the same way throughout the whole universe? What is the dynamic there? You have this other idea on the upper right that [01:37:00] the Hubble constant isn't actually that high. What it is we're in a void.

We are inside one of those bubbles. We're not on the edge of one of those bubbles where there's all these other galaxies. Our local group is within a void. So it looks like everything is

moving away It looks like the cosmological concept is larger than it actually is because of where we're situated within the universe.

And then there's, I've read where other people have said what it actually is these other universes within the multiverse, we are feeling their gravity and their gravity is pulling things away from us faster, right? So you have this whole new era where you have All these new conjectures.

How do you find data to prove it? How do you develop a model that's internally consistent? And then how do you test [01:38:00] it, with data? So anyway, now you understand the hub tension. So what are your thoughts? I like the third theory the most, but I think the second theory is probably the most realistic.

Explain the third theory and why you like it the most. that there's other universes versus pulling on ours and ripping it apart. That's pretty cool. the second one, factors in perspective so that's why I'm inclined to call that one the most realistic that we're within a void.

The first one, obviously I'm no expert. So the idea that it just evolves over time. That sounds like an interesting idea, but that means there has to be something pushing it to change. There has to be some cause for the change. So I guess the reason it feels the most believable is, it addresses our own [01:39:00] Fallibility, And then the first one, you have more than one factor that you would have to figure out for.

The other thing is, Just because it's evolving in this way where we're at, does that mean it's evolving in the same way everywhere else in the universe? Who knows? that would somewhat explain how you get this sudden inflationary era I've seen, the expansion of the universe, explained as a balloon inflating.

And you're on the onset of the balloon. But what if it's not a homogenous shape like a balloon? What if there are points that are going like this and actually other parts that are shrinking and other parts that are growing that could be happening at this moment and we wouldn't be able to see it.

Yeah. And then you could actually have parts that expand so quickly and then over here it kind of [01:40:00] contracts and

then you'd have a part break off. That's the idea of continuous inflation, where you just have one universe branching off of

I bet throughout our entire lifetimes, this theory is gonna change. But it's really fun. There's a lot of people gonna get entire careers out of trying to explain this. Too bad. I'm not in a position to be one of 'em yet, one of the other things though you're talking about a period of 125 years where humanity's entire understanding of the universe was changed. By Hubble's discovery that the Andromeda Galaxy was outside of our own. That Andromeda and M 33 are outside of our galaxy.

Not just his discovery is proof of it. And then in 1999, our understanding of the universe was changed again when it was found that the expansion goes on and on and it just keeps getting faster. [01:41:00] It doesn't slow down. We're not going back to the big bang. We're not going back to the instant time. We're going to keep expanding out.

And now it's changed again when we're finding that, oh wait, this constant itself is changing. This constant isn't necessarily the same everywhere. Or at least it doesn't look the same everywhere. So now the question is, what is it really? What is it doing?

Interesting. I think each discovery has been less radical than the last though. Really? Yeah. Yeah. It believing that the Milky Way is its own

universe and then finding out there's another universe. Yeah. That's true. Not just one, but millions. Yeah, millions were known at the time. Now quadrillions are known. That's off the chain by the way. That's such an unfathomable, it's insane. Yeah.

that would mean if you took [01:42:00] all the grains of sand on the beach, there's probably more galaxies in the universe than there are grains of sand, on planet earth. And there's definitely more stars in the universe than there are grains of sand on planet Earth.

7.5 quintillion, grains of sand. So there might be more grains of sand than there are galaxies. But that's assuming we're seeing all there is to see

20 quadrillion ants. So there are as many. Galaxies in the observable universe as there are ants on the planet, That's so

cool. Think about how many ants, like you've accidentally stepped on, you're destroying entire galaxy,

How insignificant a single ant seems. So if you were looking at the universe as a whole, I would, our galaxy seem insignificant. [01:43:00] Yeah. Inarguably. Yeah. Yeah, that's true. Yeah. Interesting, huh?

Yeah, that's a tough perspective, dude. It doesn't really weigh on me, but that's an interesting perspective. So I can tell you for me, growing up when the big crunch was the most commonly accepted theory, right? And then all of a sudden that going away, like I paid a lot of attention.

to the space stuff in school. Oh, okay. And like for me, that actually changed my whole point of view of how the universe operated. See there's a lot of people your age that they're still reeling from the fact that PDOs changed PDOs. What's PDOs Order of Operations.

'Cause it's to the left of multiplication. You actually do the division first now. Oh, really? Do you still not know that you're supposed to [01:44:00] do division first? No. If you have three, divide two times five. You do it as it reads three, divide two times five.

The M and the D are interchangeable. When there are no parentheses three divide two times five. If it was three times two, divide five, you do the three times two first. Does that actually make a difference though? Yes. Three times two divided by five, so six over 5, 1

So take two, divide by five times three. Either way you get the same.

All right. I can understand what you're saying, the P-E-M-D-A-S is not all hard set. And you do the same with addition and subtraction. You do it as it reads. So three minus two plus five versus three [01:45:00] plus two minus five.

you do it as it reads instead of adding first. what I learned was it was multiply, divide, add, subtract. always. so it was parentheses Exponent, Those are still the same But now, it's just more reliant

put parentheses on the things you want to notate first. Yeah. That's what I always do. I prefer to eliminate confusion for the next person who's gotta look at it, assuming anybody does.

any other thoughts today? Three divide, two times five is 6.53. Divide two times five. But it wouldn't matter if you did three times five divide by two you have 15 over two. keeping the numbers in the same order, but the operations flipped.

3, 2, 5. Okay. Three divide, two times five. Three times two divided. Oh, you're saying, okay, so what you're saying is [01:46:00] three divide two times five. That would be three. Three tenths while three divide two times five. It's six. 6.5. 7.5. 7.5. Okay. Yes. Okay. I see what you're saying. so now the correct answer would be 7.5.

using the one I grew up with, it would be three tenths maybe. Yeah. It's also not three tenths. Three. Three times two. Divide five, six fifths. Six fifths. Oh, okay. I see what you're saying. Okay. Anyway, matters not, okay. Three divide two times five. Yeah. Three divide two times five. So three divide two times five is, that would be three divided by 10.

Yeah. So three divided by two times five would be 7.5. So yeah, you get [01:47:00] significantly different answers. An entire order of magnitude difference. I didn't know it had completely changed. Thanks for educating me.

So yeah, there's a lot of people that found out when that change occurred, that they're still reeling from it. Gotcha. Do you want to go back to our slideshow? To our last slide, a Noiseless patient spider. Do you know who wrote this? Is it in Li Rats? It actually is.

Yeah. It's Walt Whitman. He wrote this as he was basically dying. he had a stroke that left him debilitated, and he couldn't travel anymore, had to walk with a cane.

And during that time, he revised leaves of grass and added some poems to it. this is one of the ones that he added. you can think about this as almost an end of life poem. Okay. By Walt Women, a Noiseless patient Spider. I Market [01:48:00] where On a little, montary toy.

It stood isolated. What's a promontory? A spot where you can look at the world.

marked a little promontory where it stood isolated. Marked how to explore the vacant vast surrounding. It launched fourth filament. Filament. Filament out of itself. Ever railing them, ever tireless, tirelessly. Speeding them. And you owe my soul. Where you stand, surrounded, detached in measureless oceans of space, ceaselessly, musing, venturing, throwing, seeking the spears to connect them.

Till the bridge be formed till the ductile on show. Hold till the ductile anchor. Anchor. Hold till the gomer thread. You fling. Catch somewhere. Oh my soul. Interesting. What do you think it's [01:49:00] about?

I think he's imagining himself as a spider. Spinning his web to New things. But he's still just a spider. Yeah. He's stuck in his spot until one of those thread catches. Yeah. Which kind of describes how I approached the absurdity, the myth of Sisyphus, the Sis cian task.

I am always trying to find the meaning and the purpose until something I look out on

reflects that meaning back to me. Gotcha. Yeah. I think, a lot of the nihilism in our culture did. I think a lot of it is just a product of being depressed, dude, I don't think most people, when they're thinking healthily within their norm, their true norm, their healthy norm.

I don't think they're that nihilistic dude. I agree. the nihilistic experience is a kind of an isolation, The [01:50:00] nihilistic experience in a lot of ways is born out of isolation. You didn't have nihilistic philosophy really prior to Nietzsche.

Which was late 18 hundreds. society had become sufficiently industrialized that there were a lot of people who could basically live with a pension. They didn't really have to do the manual labor to keep themselves going anymore.

they could buy the things they need, you didn't have to make so many things of your own to meet your needs. The isolation makes it feel like you're gonna die. Which is where that nihilistic thinking comes from.

And I think it's people discrediting their own biology, when they choose to think that everything is going to shit, when really, yeah, your whole world is going to shit, but the whole

world isn't going to shit. Is your whole world actually going to shit though?

or is it just feels like it is. it's your body's reaction [01:51:00] to your isolation, which you cannot survive. You will die sooner. Like we were talking about, you just become more prone to dementia and heart disease.

And every malady, which has been a recurring theme for me on this podcast, reach out to your communities, right? Hang out with people. Talk to your friends, right? Talk to people who aren't your friends. And on that note, I believe the ideal life is a nonstop process of learning and growing.

Thanks for learning and growing with us. Stay on your game and we'll see you next time on Everybuddies Podcast.