Your Questions Answered - Bret and Heather 97th DarkHorse Po...

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**SPEAKERS**

Bret, Heather

**Bret** 00:11

Hey folks, welcome back to the Dark Horse podcast live stream number 97 Q and A is catedrais. Although our cat has just left the studio

**Heather** 00:23

now he left us after deputy to produce something. Yep. Okay, we're gonna try to keep it to an hour today. Because we have been in front of the screens so much, we really have so much. We might even go less than an hour. Let's just see. We'll see the discord question this week. So every week, people in either of our Patreon is get access to our discord and people in the discord post questions and then they vote on them. And we answer one question from the discord every week. This week's question is why isn't the way that marijuana modulates these two pathways which seem to play a major role in the inflammation caused by COVID-19 being looked at by science? That question was surprising to me. I hadn't. I hadn't occurred to me and now of course, I don't know why I can't find what I'm looking for. The one thing that I found that seems to suggest that some scientists are investigating this was this preprint Zack if he would show now this is a this is something that's been a preprint since April 2020. So I don't know what that means about about its future or whether or not the author's still consider this robust. But the title is in search of preventative strategies novel anti inflammatory high CBD, cannabis city of extracts modulate ease to expression in COVID-19 gateway tissues. And the idea is that it is thought that sativa in particular or not even particular about CBD, in particular being the molecule that seems to modulate ease to expression may therefore effectively impair the ability of saris Coby to, to use those same pathways to infect people. And then these authors of our developing sativa strains that that they think may be particularly effective. This is consistent with some stuff that we were talking about early in the pandemic, like April, May, I think of 2020. Right around when this was first shock was appropriate, not that we knew that were this seemingly paradoxical result about former smokers were at some considerable risk, I think, if memory serves from developing COVID-19, but current smokers actually seem to have something protective, and turns out that nicotine, also, nicotine like cannabis seems to be involved in the regulation of the ACE to expression. So, you know, maybe that's consistent with this, but that's sort of all I've got at the moment.

**Bret** 03:04

Question is, why is science not investigating? Okay. Yeah, what I would say is, first of all, I'm not sure that it's the pathway you want to go down if we had nothing else, okay. But basically, if I understand it correctly, the idea is that CBD alters the rate of expression of the h2 receptor genes, which means that it interferes with normal functionality in what they're calling COVID gateway tissues. Now, it could be that in a pandemic, that's worth doing, that the cost of altering those tissues that they function sub optimally, is worthwhile. I mean, you know, costs and benefits and all things. But it isn't obvious that you need to do this. So I would just point people to, if you look at the desert news recently did a, an extensive discussion on the difference between Indian states in their rates of COVID. And once again, it tells us what we've been telling you here, which is that we have tools that work. So the question is, why are we not using the tools that work? And I don't know what the answer to that question is. I find it shocking that we wouldn't be it could be in competence, although at a breathtaking

**Heather** 04:21

does it review level. It's gonna be the desert review. Yeah, Valley.

**Bret** 04:27

Yeah. And look, as I said, I can't tell I don't think so. But in any case, there was a article about the difference between Indian states, those that have embraced early treatment and those that have rejected it and those that have embraced early treatment and prophylaxis have driven their rates of COVID through the floor. So

**Heather** 04:50

yeah, so this this is going to be at I think, Zack, you can show this quickly. This is the desert review with an article called India's ivermectin blackout published August 9 updated sector Great. So talking about the different results in Indian states

**Bret** 05:04

anyway, I think the point is what sort of seems like we have a policy in which we oppose that which works and that seems bad. I, it's hard to imagine what else we can say except if we've gotten that level of breathtaking and competence we ought to do away with it. And if it's not in competence, then we ought to be asking what is driving but but damn, but damn, but doubt. Yeah, so anyway, I guess the answer to the discord question is, yes, if it was all it was the only hopeful sign, the only hopeful pathway, of course, it should be studied and probably should be studied anyway. But is it the path forward? No, we've got paths forward and we're not using them. So. Yep. So what gives?

**Heather** 05:46

Alright. First question from the darker submissions comm site this week, would the Dark Horse moderator be willing to put me in touch with other dark foals who wish to join forces and saving their friend from the work? In my case, it's trans, let's pool our experiences, we can reach them through understanding, consider this the start of the save your friends initiative, they're too important to lose to the walk. So there's not exactly a question there except to the Dark Horse moderator. Yeah, about you know how I'm not sure that our mod has the mic. I don't know what that should look like. We've definitely talked before about facilitating people finding one another. And it's important, I'm not sure.

**Bret** 06:32

One way would be through the distort. Yeah,

**Heather** 06:34

I guess one way would be just the discord. Although there's a little bit of not purely functional stuff going on there at the moment, apparently. So, yes, in terms of the spirit of this, and we have been, it has not been top of our mind, but we have been on again off again, trying to figure out how to facilitate people getting in touch with one another because there are lots lots of you out there who would like to find each other. But yeah, I think the discord is a good at least first pass. Yep. Next question. I overheard colleagues at work laughing at the death of an elderly Republican who was apparently against COVID. What do you think happens if we get through this to the people who have embraced the cruelty allowed by current Vax, anti Vax, lockdown, anti lockdown, dehumanizing narratives, a lot of ashamed people, people in denial? What what are the possibilities?

**Bret** 07:30

I would expect intense denial. I think

**Heather** 07:35

a reframing of what people's positions actually were Yeah, people will will people will drop one ambiguous thing into social media at one point. And they'll point to that and say, See, I wasn't, I wasn't so sure.

**Bret** 07:45

Yeah, no, I think we have a terrible problem here because people have their compassion has been turned off, as we've talked about before, that's a familiar pattern in history, it proceeds certain kinds of terrible events, atrocities, and the like. And so having had that triggered, and then maybe getting back to a normal mind frame, at some point, they will either compartmentalize and not realize what they had become, or they will have terrible existential crises. And I think that the former is much more likely.

**Heather** 08:21

Yeah. And I mean, I think you you know, they will, they will deny it and not see what, how it is that they're behaving or an existential crisis. And I think that that second option, the existential crisis, is what the person asking the question. The option that they provide the their language for that existential crisis is a lot of ashamed people. And I think this is this is worth potentially exploring a little bit the shame, shame has a value, right, like shame has been abused, for sure, by authorities and in you know, in religions, in schools and you know, other systems across time. And, and use to control behavior where behavior should not have been being controlled, but shame has an adaptive value and you know, just just like grief feels awful and the response to feeling awful, should not be must get rid of feeling, but rather feel the grief that you feel, so that you in the case of grief depending you know, so that you you remember as much as possible, of the person or animal who was gone and, and you and you learn the lessons that need to be learned rather than simply forgetting them so as not to be uncomfortable. So similarly, shame your these, these emotions that we think of as negative. That doesn't mean that they are to be avoided, we try to avoid them. We should not be trying to avoid the symptoms of the thing we should be avoiding the thing that is causing them so if you have reason to feel ashamed, you should actually require of yourself that you that you exist in that feeling for a while, such that you are less likely to Make the error that you made the brought you to the shame in the first place. Yeah. And you know, with all that caveat upfront about shame has been often used by various systems to, to oppress. And that's that's not an honorable use no

**Bret** 10:13

it there are mis firings of all these things and abuses but negative emotions negative sensations are adaptive. And the idea of them is to steer you towards behavior that fixes an actual problem not to get you to anesthetize them.

**Heather** 10:29

Yeah. That's all Yep. Are their ecosystems dependent on occasional hurricanes? Aside from any effects of the intervening technology, what eliminating or weakening hurricanes be a net positive or negative?

**Bret** 10:48

The problem is in your concept of dependent on, I have no doubt that there are many ecosystems, that would be radically altered if you eliminated hurricanes, thinking of low lying wetlands barrier islands, all of these things, but so you know, they could be altered. And it could be that there are species that are so dependent on those ecosystems that their alteration would cause some extinctions. I don't know if that would happen, but it might. But the point is, ecosystems change through time. And the fact that they've changed doesn't necessarily mean that they've been destroyed, you know, it's sort of a confusion entering the same river twice, kind of question. So what I would say is, you can't really address it this way, do do have some habitats evolved in light of periodic hurricanes, and that causes some sort of equilibrium that would be disturbed, probably, but I don't think it'd be. I don't think we can say it would be negative, but you're looking at me with some look like I've made some no crazy error.

**Heather** 11:56

No, I just I expected you to go a slightly different direction. So I'm going to prod you to go in that direction. All right. We're going to define and then steel man, the intermediate disturbance hypothesis.

**Bret** 12:07

Yeah. Okay. The intermediate disturbance hypothesis. Multiple he proposed, yes. Two separate

**Heather** 12:14

proposals of it. 80s? Maybe?

**Bret** 12:17

Yeah, I think so. In any case, it is the hypothesis that diversity is maximized by intermediate levels of disturbance. And the idea being that in very low

**Heather** 12:32

intermediate in either space, or time, I think, right, and hurricanes haven't been proposed as as one source of diversity, enhancing Darwin's hostile force in tropical coastal ecosystems, right?

**Bret** 12:45

The basic idea and there's actually a such a beautiful experiment that demonstrates that there is at least substantial truth in this hypothesis, I'll tell you about if I can remember it in a second. But the basic idea is a low diversity, a low level of disturbance causes a low level of diversity because some superior competitor drives out all the others, they go to extinction. And so you get a very small number of competitors. A high level of disturbance, basically drives down the number of creatures that can tolerate the environment, right? If it's too chaotic, then things get driven extinct by the hostile forces in the intermediate levels. We see high diversity and the beautiful experiment, which I believe was the ecologist Bob pain, I think it is Bob pain, not here in the theologist. I'm not sure yet. But in any case, experiment involved. I really this one of my favorites, gluing down rocks in the intertidal. So the idea was that rocks in the intertidal zone, roll around with waves really big rocks don't roll around hardly at all. And Little Rock rocks roll around a lot and medium sized rocks rolled around a bit. And so the basic point was, you could see the diversity patterns and the different sizes of rocks and you could infer that they were the consequence of the level of disturbance, but you could test this by taking rocks that should roll around more and causing them to roll around less by gluing them down, which then caused the diversity to fall which is super beautiful and experimentally elegant and not high tech. I would point out Oh, really good. science works in an environment of, I don't know muscles and other intertidal creatures.

**Heather** 14:29

Absolutely. You found it No, I found a 2007 paper that sort of a Latter Day. abundance, diversity and fidelity of macro inverts, sheltering beneath rocks during title immersion. intertitle Caulfield does the intermediate disturbance hypothesis hold for less exposures, smaller rocks, but I thought from there I could get here but there's just there's so many references that I'm not finding it. cobble sighs I see a Connell wasn't Connell Maven.

**Bret** 14:55

Connell was one of the original intermediate disturbance hypothesis, but not

**Heather** 14:59

this empirical work.

**Bret** 15:01

Yeah, yeah, that's

**Heather** 15:02

if I'm sure it's in here, but there's just a lot there's your roof garden did some stuff too. I remember now.

**Bret** 15:12

That would have been testuff Garden.

**Heather** 15:14

Yep. 90 actually. Oh, wow. That's Joan I think at that point test of the prediction of the MA disturbance hypothesis has Connell listed here for I can send Well, maybe I'm wrong maybe. Yeah, I'm not anyway. But anyway. So the reason

**Bret** 15:29

Heather was smiling at me that way is that I have a love hate relationship with this hypothesis. I know it to be true and important, but it has been invoked to explain the latitudinal diversity gradient. And hedges and the latitudinal diversity gradient is the tendency of species numbers and species density to go up as you get closer to the equator, which is something I studied because from the moment that a world class ecologist told me that we didn't know why that pattern existed. I thought, Wait a second, something is wrong, because this pattern exists everywhere. How could we possibly not know the answer to that question? Why

**Heather** 16:02

is that question not being investigated?

**Bret** 16:04

So anyway, I did a dissertation chapter on it, and found that the claim of intermediate disturbance that was supposedly supporting the tropical forest habitats being so high diversity, they were using tree falls as their disturbance. They're part of their disturbance regime, which are Yes, disturbing, but also a consequence of high diversity. And they're especially when you're under them as you have. Yes, the trees have been out to get me for some time. But But anyway, so anyway, there's a circular argument in there. And when you eliminate the tree falls, it's a relatively low disturbance habitat that still has diversity.

**Heather** 16:44

If memory serves, I mean, you what you went through sort of all of the promising leading hypotheses for the natural diversity gradient and wasn't Another problem with intermediate disturbance hypothesis, that even if it were true in those tropical forests, which, you know, the circularity of the tree falls suggests that we just don't know. It didn't hold insight. It didn't hold in the oceans.

**Bret** 17:06

Yeah, that's the thing is Yeah, it's not the tree falls that are doing it because because the reefs, for example, are extremely high diversity habitats. Yeah. And there's no analog. And so anyway, yeah, there's a lot wrong with that literature. But you know, I mean, intermediate disturb Welcome to the literature and welcome to the live. Intermediate disturbance was one of those things. It's not like that's a wrong hypothesis. That's a right hypothesis that doesn't apply doesn't explain what they're claiming.

**Heather** 17:29

No. And in fact, that world class ecologist who you mentioned, who was the person who kind of set you down this path was john VanderMeer. And he also was the one who introduced us to the intermediate disturbance hypothesis and he had worked in coastal Nicaragua after I don't remember what your hurricane or even exactly what year but he had happened to have had work, pre hurricane, and then it just got battered. And so he was able to watch the recovery rates of these of this forest for many years, effectively happened to have you know, I've been doing work in the right place to study regeneration and such and, and I think if I if memory serves, he, you know, he sort of wanted to be a fan of hypothesis, but couldn't quite find a ton of support, even in his in his dataset, I think, I think is what,

**Bret** 18:16

well, yeah, I don't I don't actually remember what he what he found. But you know, john was always I thought, excellent at seeing the partial truth in things that were partially true without embracing it or rejecting it totally.

**Heather** 18:31

Now, absolutely. I don't know who this is. But I'll ask the question. Would you be interested in a conversation with Neil Oliver, thank you, and congratulations on your book.

**Bret** 18:44

Do you mean it's not ringing a bell? Yeah,

**Heather** 18:46

I can't answer that. Until unless we know who that is. Shouldn't we? Should we decolonize Western medicines by using medicines discovered by a non Western person of color and not a tool created by a white European colonizer?

**Bret** 19:03

In fact, that's all we should do? The only thing we should do, I think we should just do that and see if it solves all of our problems. Yes, obviously, that is a facetious question. Yeah, we should use whatever works and doesn't matter where it came from. In fact, we have plenty of ideas that are central to our thinking that were generated I know this is going to shock some people but by people who weren't perfect. Sometimes people who were desperately imperfect, like statistics, do you like statistics makes a great play allow you to know what the hell's going on. However, they were invented by an anti Semite. Already Fisher Yeah. All right. Fisher. So anyway, total tool, partial tool

**Heather** 19:55

at me, and he he made great contributions in evolutionary theory to sex, your theory. You know fantastically important mind in that it's contributed to our understanding of the world and a tool.

**Bret** 20:06

You know what I don't like of his his tallness, the anti semitism and the tallness. Yeah, those are both things I've never never felt positive about but the you know, for example, sex ratio theory, very useful stuff.

**Heather** 20:22

Very useful.

**Bret** 20:23

Yeah. stood the test of time. Sure has for good reason.

**Heather** 20:27

Unlike some of his unfavorable personality traits and leaves. A woman with the line I spread like syphilis in her song is going to war for first amendment rights. How is it? We're here?

**Bret** 20:41

How is it? We're here? Indeed.

**Heather** 20:43

This is Nicki Minaj. I only mispronouncing her name. No.

**Bret** 20:48

Perfect. Yeah.

**Heather** 20:50

But I mean, I've seen Wow. Wow, how is it? We're here. Some level she's on cancelable. And this is what we were actually this is the point we didn't get to and talking about Michael Shermer, right? Like Yes. So let's let's do that a little bit.

**Bret** 21:06

Yeah. very unfortunate that Michael Shermer is now being fused with Nicki Minaj. Sorry, Michael. Yeah, very sorry about that. We also have defects of personality and apparently timing. And here we are. Yeah, I don't know. I mean, the fact is,

**Heather** 21:25

I've been everyone everyone should aspire to being on cancelable. And many people don't have the way or the means but it's it affords you an ability to have a microphone and not having it stolen, not having stolen from you.

**Bret** 21:38

Yes, maybe it may be it provides some cover. But I think we need to note what moment we're in. Right. The fact that Nicki Minaj is somehow involved in one of the most serious discussions

**Heather** 21:54

tied to the White House, apparently, I don't know. Maybe I'm wrong.

**Bret** 21:58

I obviously, this is not how things are supposed to work. And obviously it's not functional. Right? Right. Right. You know, it's Nicki Minaj. reporting an anecdote. Right? Right. So

**Heather** 22:09

which means if the anecdote turns out to be in any way untrue, then that will be taken as evidence by the mainstream media, that everything that could possibly have been downstream of the anecdote if it were true, cannot be true, either. But I think which is a failure of statistical thinking, which again, was largely invented by a truly horrible human being who had a great mind.

**Bret** 22:31

See earlier point, yeah. Yeah, right. Yeah, I think I think the point that you were making is the right one, which is you have a world full of people, they have a range of expertise on the topics of the moment. And they have a range of cancel ability, right. And the people with the expertise are not finding themselves on cancelable, which has silenced many and has caused others to speak up and be canceled, right. And that has left Nicki Minaj as one of the most expert people who is fully not cancelable. Left, and therefore fully

**Heather** 23:10

in possession of an anecdote that may or may not be true. Whether or not if it were true, it would suggest something real about underlying patterns. I guess the point is, I know nothing about this, this person. But I, you know, I doubt that she has a firm grasp on the difference between anecdote and data and what it might mean, I

**Bret** 23:31

don't know, I know, I don't like what she does for a living, but I don't care. Yeah, white is what's really,

**Heather** 23:35

but I mean, in terms of like, as a spokesperson, but the person being brought to the White House,

**Bret** 23:39

but that that that isn't the point. The point is you have by allowing mobs to rule who gets to speak what they get to say what platforms they're allowed to speak on, you're left with Nicki Minaj, in charge of public health policy, right? And that's not what you want, right? We're in charge of the heterodox view on public health policy. Right? What you want are people who actually know something about this and have the tools and I don't think Nicki Minaj is claiming to I think she just ends up as somebody who's

**Heather** 24:10

just like, actually, no, I'm not going to shut up. Thank you know, right.

**Bret** 24:13

So anyway, not sure what else to say about this is not a you know, again, I'm, I'm perfectly happy on a normal day to attack Nicki Minaj, based on the product she puts into the universe, and no, you

**Heather** 24:26

don't, you don't you don't attack people.

**Bret** 24:28

I don't attack people. But I would, I would attack the product, and it's a positive contribution. You know, that's neither here nor there. She's hardly distinguished and putting things into the world that aren't positive contributions. But the fact is, it is her uncancelled illness that has put her central central to this controversy. And that says something about the sickness of the environment, use

**Heather** 24:50

perverse incentives and unregulated market forces to get to the top in a field that is distinguished only for its sort of reprehensibility and that is given her uncontrollability and and now she's saying Actually no, I saw thing and I'm not gonna shut up about it. And more of us need the freedom to say Actually no. Shut up about it. Yep.

**Heather** 25:23

Hi Heather inbred thoughts on the FDA panel rejecting boosters for mainstream population 14 to 65. Without health conditions on Friday. By the way, I'm on chapter five.

**Bret** 25:35

Yeah, fascinating development, development after two high profile resignations by people who then went on to be authors on a paper in The Lancet. And

**Heather** 25:47

I don't want to go to Lancet paper to the Lancet paper views if I can see if you can, but I made more than just

**Bret** 25:55

fortunately, I'm not in a position to help you with that. In fact, I don't even have their names at top of mind. But what I would say is I don't think we know what any of this means. Obviously, this is not on script you have.

**Heather** 26:10

So why don't be Terry and Gruber and Phil Krauss. I am uncertain. Okay, so I'm finding those names in new york post of all places, telling Politico, et cetera, et cetera. And if I take those names to Google Scholar and look up Lancet, you think it's Lancet?

**Bret** 26:28

Yep. So you think it's the Lancet. But anyway, we are we are somewhere new. This is, you know, high profile resignations in advance of a high profile letter critical of the idea that boosters would be useful, obviously makes a lot of sense to criticize the possibility of boosters, right. We have vaccines that are their immunity is waning over time. That's disappointing. And the degree of protection is failing as a result of the evolution of variants that escape immunity boosters at best only correct for the first of those things. So anyway, the policy isn't well thought out. And it is, I think, excellent that people highly placed in the public health system are beginning to speak up.

**Heather** 27:26

Yeah, I'm not finding that I find one of those authors on a Lancet paper, but that's from last year. I don't find either of them. In the Lancet paper this year. Oh, well. I have to find, there we go. Can you discuss the US and Canadian stance of pasteurized milk? The FDA insistence versus the EU stance, risks benefits, and juxtapose this with the current pandemic? It's a lot of questions.

**Bret** 28:05

I don't see the last one right away. But we actually cover a closely related topic in the book, right, we talked about the fact that milk is actually one of the few things in the universe that is supposed to be eaten. Right, it is designed as a food, fruits being another nectar being a third, but it's not most most critters don't want to be eaten. And anyway, the point is, though, milk is supposed to be eaten directly from the breast. And because of that, it is not built to be stable. And so the process of stabilizing there are lots of ancient ways to stabilize dairy products, you can stabilize them for a short period of time as something like yogurt you can stabilize them for a much longer period of time is something like cheese, and cuisine. Much of cuisine actually, is the result of behaviors that we engage in to stabilize unstable foods or to purify foods that might be somewhat compromised, you know, cooking, or

**Heather** 29:07

someone has to bring together ingredients that together make a complete protein, for instance, simply protein

**Bret** 29:11

to liberate more nutrition from the same food. In any case, the point is pasteurization is a second level solution to a problem like this. If you're going to take milk and try to transport it as milk over a long distance. There's only so refrigerated it can be

**Heather** 29:28

Yeah, you could transport cheese, but you can't transport milk unless you pasteurized pasteurize

**Bret** 29:33

it right? So pasteurize it is derived from Louis Pasteur who demonstrated that basically, life comes from life and doesn't spontaneously regenerate. And that's why if you heat milk to a temperature where all of the things that might be living in it, they often you keep it hermetically sealed, then it stays stable. So anyway, it's a solution to a problem. Does it cause other problems? Undoubtedly. It does.

**Heather** 29:59

There's also an I don't I do not ever have to look into this to know exactly where the boundaries between these issues are. But most milk in the US has both pasteurized and homogenized as well. And I don't think I don't think that those need to go hand in hand. And the homogenate, the homogenization process, I don't know what it's adding, oh, and maybe if all it is adding is basically uniformity of product and you don't have to shake. Right, right, in order to get it back into solution. I think there is some evidence suggesting that homogenization does have negative effects in terms of, for instance, just all the fat globules that you're drinking are the same size now, as opposed to different sizes and less triggering different things in your system. You know, assuming that you're that you have lactase persistence, you have you know, that you have the enzyme that can digest milk sugars, that, you know, a sort of an intermediate stage could be to pasteurized but not homogenized milk, as well, which again, would you know, it's like asking people to select produce that might not be quite as pretty, but might actually have more of the original nutrients because it was grown in, you know, dirt versus hydroponically or something,

**Bret** 31:13

right. I think though, this actually makes a pretty good test landscape for the model in our book, because, you know, we've talked on dark horse about the supply chain length for food, having negative consequences on things like nutrition, we talk in the book about technologies, ancient technologies for preserving things like milk, like turning them into cheese. We now have new fangled ways of doing certain things like pasteurization and homogenization, those things have consequences, those consequences emerge late, there's a question about whether or not the right thing to do is ignore those consequences because they're small. Let those consequences alter what you're eating, like maybe if your supply chain is so long that milk can't make it that distance, maybe you'd be better off with fees or something like that. And so anyway, we're not going to tell you the answer to those questions. But the point is, that's how you'd set up the problem.

**Heather** 32:08

Yeah, yeah, I know. Exactly. I mean, it's also, it's also, of course, true that in the US, you can, you can often find small farms that will sell you unpasteurized milk. But that we're defacto, the supply chain is very short there.

**Bret** 32:24

The fact of the supply chain is very short. And there's the perverse incentive surrounding the litigious instinct and the danger of

**Heather** 32:33

disease, it's a danger to the farmer for sure to sell such product, right.

**Bret** 32:37

And you can't imagine a distribution network, you know, to the extent that the occasional person might get sick from unpasteurized milk, right, you expect the system to solve the problem by potentially making milk less valuable and possibly even harmful, because your the diseases you might get from milk that has been degraded in this way, are not going to be something you can pin on an individual farm or distributor at all, right? Whereas if you get, you know, eco Ly, dangerous E. coli infection from a particular batch of milk that does trace back to somebody. So this is a place where our system is not biased against harm. It's not obsessed with your safety. What it is, is obsessed with not being able to prove that the harm came from a particular place. And it's a it's a bad bias.

**Heather** 33:30

Boy, and I mean, those are inextricably linked. I think. Interesting. While you were talking, I came to a slightly different conclusion, which will sound like it is contradictory? I don't think it is. I think both both things are true. You know, what you said is, it's not the people. It's not that the system is concerned with the harm but concerned with being able to point to what it is that harmed you. Yeah. Whereas I was thinking, actually, and this was this is sort of been percolating, as we've been having a lot of these conversations about the book these last few weeks, that even more generally than I think we have thought through before, the safety ism, the safety culture of childhood and parenting and schools now is actually true culture wide. And that we have like we have a society wide. This is what the litigious society hands us as well. Society wide, we have like a safety ism meter, and it's turned all the way to 11. Yeah, well, this one goes to 11 across every domain, everywhere. And it is, you know, at what cost at what cost in some time, in some places, health in some places experience in some cases, serendipity risk, all of the things that one learns from actually not having a single factor turned up so high that everything else falls off.

**Bret** 34:45

Yeah, but you know, I'm not disagreeing with you. And in fact, we wrote this into the book too, but it's not even safeties, right. It's like safety of a particular kind and the consequence of turning That dial 211 is to make you desperately unsafe in some other way. Right?

**Heather** 35:04

Well, but no, I mean, I think that is safety. So I think that's, you know, that is the, that is the cruel irony of the term that it is people who are speaking as if and I believe almost entirely, if not entirely in the case of like, what's happening to children really think they're making children safer, right? But the effect is precisely the opposite. That doesn't make it not safety isn't that is what it is, that is what it's called. But it's not actually increasing safety.

**Bret** 35:28

Right? I agree. But but somehow I don't, I don't think the world gets this, which is it finds us obsessed with keeping you save. And it does not understand that we are obsessed with keeping you safe in this domain. And we manifestly don't give a shit in other domains, right? Your short term safety, we're obsessed with it, right? Because the litigious society focuses on these very directly assessable causes. That's right. And we, you know, policy kills people in large numbers by being indifferent to harms that are hard to prove.

**Heather** 36:02

And we do say this precisely in the book, I actually can, it could be so many places, I can't remember exactly where it ended up. But the idea, you know, a teenager dies on a school trip. And it's a tragedy. And it is also a story that is relatively easy to tell, and it pulls at the heartstrings. And everyone associated with that triple remember it forever, and they will be called back to it by on the anniversaries and such. And it can such tragedies can be avoided by moving towards an almost absolute safety ism. But the kind of safety ism that then pervades things like schools who have who have perhaps had a tragedy and have then decided to move the slider all the way to the other side is a greater tragedy. And there may not be deaths that you can point to as a result, but there will be a society wide lack of, of potential of capacity of of realized humanity. Because people are unskilled and too scared to move, and too scared to act.

**Bret** 37:02

It is even the case that if we just compare trips to trips, right, if you decide not to have trips, because of the danger of what might happen on a trip, it is impossible to measure how many lives will be lost because people didn't go on the kinds of trips in which they might have learned something about how to manage risk, right. And this is it's a it's an error. It's a it is a tragedy that our system is biased in favor of what it can see and excellent at ignoring that which it could infer but cannot see. Yes. And yeah,

**Heather** 37:35

yes. Yes. All right, that was our answer to pasteurized milk.

**Bret** 37:41

Yes, of course. Right? Yes.

**Heather** 37:51

I don't know what this means. But it's fascinating. So we'll go with it. With quantum effects found in the retinas of night migratory Robins, can we reasonably postulate further, could quantum spins explain a mother's sense of a child's pain at a distance? I don't know what quantum effects found in retinas of night migratory Robins means. I haven't seen the finding in question. I don't think it

**Bret** 38:17

matters to the question really assume that such things are plausible, and they're not saying they are. But if you proceed from that premise, I would say pretty unlikely because you have much better mechanisms for such things. But you know,

**Heather** 38:37

it's almost, you know, quantum spins explainable their sense of a child's pay distance is almost, what is the what is the crazy hypothesis that consciousness predates matter? Oh, pants, like his hands. It's almost a pan psychic. I almost didn't, it almost circles back on Penn psychism,

**Bret** 38:56

right, which may be a perfectly viable myth in order to proceed through life without being a mechanistic description of anything. And all I would say is, you need to be a little more creative and thinking about how it is that for example, a mother might detect distress of a child at a distance. And there are lots of mechanisms including, you know, cycles that the mother may not be aware of, in conscious terms that get disturbed by distress that when those cycles, you know, like when when a room is too quiet. And a mother has a sense of Oh, wait a second. If there's something afoot somewhere else in the house, I haven't heard from the kids in longer than it would normally be. Therefore, there may be something going on that I need to check in on and three times out of four, there isn't anything but one time out of four, you know, she catches the one where she is on fire as they sometimes are. Right. So anyway, I guess my point is there are lots of ways that don't require us to have path of size, any force we don't know about that begin to explain, you know, and this happens with all sorts of people, you know, somebody has a habit of calling you at some interval. And they don't call you and you begin to, you know, some part of you is monitoring the fact that something doesn't feel right over in that space.

**Heather** 40:20

Or then they do call it's a little bit later and you say, I was just thinking of you. Isn't that amazing? Well,

**Bret** 40:25

right, exactly. Right, or something in the tambour of somebody's voice or whatever. So anyway, I think the point is, you don't need quantum effects to explain what you're talking about. It's

**Heather** 40:35

still I'd like to know about the retinas of the night migratory Royals,

**Bret** 40:38

right? Yeah. Yeah,

**Heather** 40:40

I would. What's your opinion on going to tanning salons in the winter to boost vitamin D?

**Bret** 40:48

You know, I have actually been thinking about this very question. Have you? Yeah, I totally have, which is that given the role of vitamin D seems to play in terms of preserving health, or maybe the way to say it is that vitamin D deficiency plays and making one vulnerable to communicable communicable diseases in the winter? That there is an argument for? I don't know if it's tanning beds or rooms or whatever, that would create vitamin D and make people healthier? But it's, you know, it's a pretty good reason to do that. So,

**Heather** 41:24

yeah, I don't know, I've never looked into tanning beds. I don't know the sort of UVA UVB UVC ratios and

**Bret** 41:32

right, what, so what, but you know, you and I, of course land in the same place, then, which is, there ought to be tanning beds that are tuned to minimize the risk and maximize the vitamin D creation, but

**Heather** 41:42

the chances that they're likely to be the ones that exist for people to get winter tans indoors. seems small to me,

**Bret** 41:51

right. On the other hand, if people understood the connection between vitamin D deficiency and ill health, then we'll debate it, the market might create such a shirt. For one thing, it's got to be I don't want to say it has to be, but it's probably pretty close to trivial to add a setting that would allow you to dial in the nature of the tanning device so that it gave you the optimal thing for whatever you were trying to accomplish. Well, I

**Heather** 42:15

guess one other thing that I don't know that's relevant to this question is whether or not the vitamin D that would be generated from being exposed to artificial sun, you know, how come how comparable these three things, the vitamin D, generated by exposure to the actual sun, the vitamin D, generated by exposure to an artificial sun, and the vitamin D encountered by taking a supplement. And it's those last two categories that, you know, that are maybe what you would be constrained to in the winter. And, in general, as we write in the book, and as, as you know, of me, I'm not a fan of supplements, I would rather get my stuff from my food and my activities and engaging as humans have typically engaged with the world. But vitamin D seems like a supplement, as far as we can tell, is quite effective. Yep. quite effective, quite low risk. And so you know, if that is true, why not just take the supplement?

**Bret** 43:17

Why not just take this up? Well, I guess. I mean, look, I think we have an analogous question with respect to something like coffee. Okay, that, basically, because you've got a complex system that has detectors on it, or in the case of vitamin D, it has synthesizers in the skin, that there's really just a question of, you know, do you want to do you want to get that update by plugging in an ethernet cable? Or do you want to get that update over the Wi Fi, and the coffee can wake you up in the morning, and you take it in through your gut? And the same thing would happen if you stared into cool spectrum light as soon as you got up? Right? Is there a reason to prefer one of these I'm sure there's a spectrum of reasons but it's not obvious to me that the priority should go to the through the gut route, rather than the over the air route.

**Heather** 44:15

Well, and this is I think, then I think you're agreeing with me in this particular case, then, that to my surprise, I find evidence that vitamin D supplementation is actually effective and not particularly costly. And super easy compared to Oh, I'm gonna have to go spend an hour a week or whatever it might be in a tanning bed. Well, why wouldn't you if if there is similar efficacy, if as it seems vitamin D supplementation is actually effective and taking it in the way that our ancestors have generating vitamin D the way the answers of generating it have generated it doesn't have as many different effects as many other things do. Then, you know, I would always prefer to be generating my vitamin D out in the sun. But then then if I'm if I'm restricted from that because of the season, and it's a, you know, a tanning bed that's been tuned to just right, which may or may not exist in the world yet versus a pill, right? In this case, I prefer the pill actually. Yeah,

**Bret** 45:14

I agree. On the other hand, you could imagine, you know, a tanning bed that was tuned. So it did little harm, gave you some Tam and created vitamin D, that would be an attractive option

**Heather** 45:31

to people. You're saying I look pale?

**Bret** 45:33

I'm not saying anything like that, darling. I'm just saying it's not obvious to me that the pill is the one to bet on for being to having the fewest arbitrary consequences.

**Heather** 45:48

Oh, no, I mean, conservatively, it would be the opposite. The assumption would be the opposite I would think. So. Okay, next question. What are we at 45 minutes. 50 minutes, just finished the book and I love it. I wish I could have been your student and learned to free myself from fears of being outside the yellow jackets sitting behind my knee when I was four and another on top of my foot when I was nine, caused fear that I unfortunately allowed to control me. Anyway, the solutions you proposed the end of the book aligns so well with Peter Joseph's. I'm surprised he hasn't been a guest yet. I believe he's a dark horse and will be integral in building the bridge to a sane future.

**Bret** 46:30

Interesting.

**Heather** 46:30

You know this name? I don't I don't know this name either. Alright, well,

**Bret** 46:33

we should look into him.

**Heather** 46:34

Peter Joseph, if the mod is there, if you would take a note and send that to us so that we don't lose track. Since I don't end up looking back at these questions with our new system. And reminding myself of past questions. That's gonna be another another person that at least I am not familiar with, in this case, I think are excuses that apparently he was working in the 1940s. Are you familiar with Dr. Raymond rife, who in the 1940s treated all manner of disease with light and sound? His work was first lauded than squash for not being profitable? Would love to see it revived and improved upon? sounds fascinating, fascinating. you've not heard of this guy?

**Bret** 47:17

No, but it sounds like he had a sound method. I don't know. He shed some light on the problem of something. Alright, it's getting late is what's happening. Yeah.

**Heather** 47:28

Yes, no, that looks and actually if if the mod would also say that name as well. Dr. Raymond rife, would love to look into that. The idea? Yeah. It's like It's like the doctors who are treating tuberculosis by taking patients outside. And then once some once we have antibiotics, which are amazing and life saving, instead of enhancing the existing treatments, they were they were replacing them. And so now we had enclosed wards with no airflow and the treatment of patients entirely with antibiotics. And, and some people got sicker. Because airflow is actually a tremendous healer. And you know, the idea of light and sound. I don't know what the particulars are here, but it sounds intriguing. Yep. I found that I have a Fantasia I'm actually not sure if that's advantageous. A Fantasia I've heard it pronounced both ways. I found I have a Fantasia sounds better. The inability to picture things in your mind's eye. Do you have any thoughts on this condition, evolutionary or otherwise? Well, so in the ability to picture things in your minds, I've I've heard of this before, and I always lose the concept after afterwards.

**Bret** 48:40

Yeah, I mean, I wonder about it. Yeah. Because the fact is, when one I don't have this condition at all, but when I try to picture things in my mind, it's not like looking at them. It's a partial thing. And I mean, I'm even pretty good at this. I can take a complex object and rotate it, you know, do things like that. Sometimes I can did build a mechanism and kind of run it and see if if it would actually work in my opinion or

**Heather** 49:10

not, oh, look, what kind of mechanism because that first one is just like the classic. Men are better at this than women are right? Like move 3d movement of movement of 3d objects in space.

**Bret** 49:19

Yeah, no, if I wanted to, you know, if we were in the field, and I needed to build a something to solve some problem, right? a pulley driven system or whatever, right? And I didn't have the materials that I wanted, for example, I could sort of think through what it would look like and I could run the twine through the pulleys and get a sense for how much tension there would be and whether I think they're likely to break. And you

**Heather** 49:40

might be I mean, you actually might be less likely than I would, for instance, to want to draw it out.

**Bret** 49:49

Yeah, I've done that. It's not that effective. I'm better conjuring it. But my point is when I do that, you know, which I'm able to draw it out on piece of paper.

**Heather** 49:58

I mean, right?

**Bret** 49:59

If I conjure it My mind and I tried to look at it. I don't see a picture of it. Exactly, huh. It's not held that way. So I guess what I'm saying it's

**Heather** 50:08

interesting, whereas I totally do like you were like pulley system. There we go got it. All right, and you're gonna start including things like okay, I changed that, oh, that one's bigger. Okay.

**Bret** 50:16

Right. So when I do that it looks more like the way things are in dreams, which I described in one of the recent weeks podcasts as only partially rendered. Right?

**Heather** 50:28

Yeah, you did. And I think that this is going to be a place where some brands are very different. I think. I end up with stills from dreaminess, that seem totally rendered to the edges of consciousness. But they're like, like hyper rendered, you know, like some I don't know my art history well enough to identify the the types of, you know, the types of art but you have some, some art from some periods in history. It's just so elaborate, like row cocoa and just ridiculous levels of detail. Or, like, you know, posters of the rain forest. Like this is the rain forest got a Jaguar and a monkey under the porcupine? Like, everything right there. It's

**Bret** 51:10

not surreal. It's not hyper real, it's get real. Because the rainforest doesn't look like Yeah,

**Heather** 51:17

no, it's ridiculous. Yeah. But you're saying that it's really it's more like, it's like an XKCD comic.

**Bret** 51:26

It is like that XKCD comic. It's also the case, like, if I try to conjure a face of somebody that I know really well, like yours, for example. hard to do in the abstract, right? It's hard to do it from memory. So anyway, I guess the point is, you do want to know what what normal looks like, or given your hypothesis, what the range of normal looks like, before you figure out what the condition you have, and how different it is from because you may be expecting something. It's just not simply Yeah, what everybody experiences.

**Heather** 51:57

And okay, I mean, this, maybe this is the thing that actually gets us canceled, but um,

**Bret** 52:01

Oh, God.

**Heather** 52:05

You and I have conversations like this, like we've never had that particular conversation before, but which reveal how very different our brains are. And frankly, the the shorthand that we use to describe these different ones, this particular difference long before we ever ran into the psychological description that many psychologists think is ridiculous and should never be uttered aloud, was that you are much more auditory and I am much more visual. That that was that was the language that we use. And then we would see in our students, again, long before we ran into this, you know, like, visual, auditory kinesthetic learning styles, stuff that, you know, some psychologists think is accurate. And some say, if you think that you're a moron, and you've just, you know, be just prove that you don't know what you're doing. I know that my brain is very different from yours. And some of it is exactly in this area, where, you know, when you say, Well, you know, dreams aren't fully rendered, like, Well, I think mine are, right, or, oh, well, when I see things in my head, but I don't really, you know, I don't see them as visual as my go. I do. And, you know, this is This accounts for I haven't much less now. But I used to be able to just say things backwards, right? Because I see the words in my head, as I as I, you know, not so much now, cuz I'm doing so much talking all the time, but used to be whenever whenever I was thinking about a word, it's because I saw it. And so it was perfectly easy to read it backwards as forwards and to you. In this way. I would say in this way. You're normally like, what is that? Like? Why would you do what how can you do that? And how is it that the words are showing up for you? So I don't, I don't quite understand why so many psychologists seem eager to dismiss this kind of difference. As you know, pop psych, clearly, bonk, when many of the same people are willing to talk about neuro diversity?

**Bret** 53:59

Well, I have to say I both resonate with it. Right. When I read something, I hear it. Right. Right. And I certainly right. So I know that that's real. I mean, don't think of myself as auditory and not visual. Right, right. I don't think that's how it works. Is there a priority for the auditory probably, right. But anyway, I guess the point is, until you describe it correctly, you would expect people to reject it, that they falsify it too easily, because the proper response is something like, you know, there's an important piece of truth there, but it's not true.

**Heather** 54:35

But I actually I've just have not seen that. I haven't seen that pushback. Yeah, it's always This is nonsense. Really, if you met people, if you talked people deeply to people about how it is that they form ideas and and plan to make things or plan actions. Yeah, yeah, like the differences. I imagine we could we could discover similar differences and similarities. In for instance, how we wayfind and We imagine navigating in the world. And there's just there's clearly distinctions to be to be on earth and discovered

**Bret** 55:10

you sometimes find it very disturbing if I'm if I'm driving. And I take a way that you know, is less efficient, even if it's only very slightly less efficient. And I may have chosen it for some other reason that you're like, immediately like, Wait a second, that that doesn't make any sense. Yeah.

**Heather** 55:28

And I also cannot stand having the voice skip directions. It throws me it makes me it makes me a less good, like, I cannot tolerate it. And I think just having the voice come in, like no, no way. No, how ever?

**Bret** 55:41

Well, I hate it too. But I don't hate it more than missing my exit because it was on the screen. And I happen to be thinking about something else and not looking at the screen and

**Heather** 55:53

yeah, yeah. Anyway, to be to be continue to expect Yeah. Any young adult book recommendations on natural selection, evolution, bookstore science sections are lacking. I have a 16 year old niece, advanced reader, majority of adults don't grasp evolution, man, all of that is true. And the last time it was pre COVID. But I spent a long time in the ya the young adult section of pals, which is the you know, the city of books here in Portland, it's extraordinary, amazing bookstore, and was so disappointed by the offerings across the board. I wasn't even looking for science. That said, science fiction might be a place where you can find some stuff. On the other hand, very little science fiction actually gets the biology right.

**Bret** 56:46

Yep. You know, it depends how young is the problem. If you're not that young,

**Heather** 56:53

16 year old, nice, stand straighter,

**Bret** 56:56

then, you know, that's thinking, I'm thinking. Blind watchmaker. I'm thinking river Out of Eden, which I have not read, but is obviously targeted to be readily comprehensible.

**Heather** 57:14

So these are both Dawkins books. Yeah. Yeah. I guess ya as genre tends to be fiction. Yeah. And so I read that is looking for fiction. But if you're willing to go nonfiction, I haven't read a river Out of Eden. Is that what it is? Yeah, I haven't read it. But you know, he's, he's, he's a good writer, and a clear communicator and a good thinker. And

**Bret** 57:41

that that could work. And I would say, Selfish Gene, later, it's not the place to start. It can be if you're, you know, if you're college students, probably the place to start. But if you're just learning to think this way, it's not the one to start with.

**Heather** 58:04

Does. Let's try to do two more here. Does evolution decide what traits to remove? If an organism reproduces successfully? Wouldn't that mean every trait would be passed on?

**Bret** 58:14

Great question. Yeah, it does decide what to move and it does it in more or less the same way that it decides how to add something, in fact, it's easier to remove things because they can go latent, right? So you can have, I was just thinking about this for some other reason, which I can't remember. But you can have something called a loss of function mutation, where you imagine it takes up a lot of a lot of selection in order to get all of the amino acids in the resulting protein, to be correct for it to fold into the shape that does a job, but it doesn't take very many changes to cause it not to be functional. And so anyway, there are loss of function mutations, you can take a gene, dormant, latent, and then reactivate it later. And so those are in fact, easier processes than building something up de novo. And they happen the same way, which is that there's variation in what is expressed what is in the phenotype. And when a variation is a savings. It provides a competitive advantage to individuals who have that, that savings. I will say that in the realm. Again, this leans heavily towards what we talked about in the book. But when a trait is a is transmitted outside of the genome, as many human traits, including many of the most important human traits are, this is a trivial process, right? So if you think about religions as compendiums of wisdom that alters behavior in ways that are adaptive, you have sectarian difference in what parts of a sacred text to pay attention to and which parts to do. emphasise and those individuals that subscribe to a version of their belief that is correct, that is efficient about which things not to pay attention to, and which things to retain. And they have an advantage because the behavior is altered in a way that ideally splits the difference. They will their view of the book and which things matter will come to dominate. And those who have some other view where they retain things that are pointless, will have a disadvantage in their view will disappear. And maybe those who have the view that is on is waning, because it's inefficient, we'll adopt the view that has become dominant because it feels like the right thing to do. But anyway, the point is, selection sorts things that are not genetically transmitted even more easily than it does things that are transmitted in the genome.

**Heather** 1:00:51

Very good. Good. Final question. Yes or no? People find it much harder to forgive someone for being right, than for being wrong. I think this is true.

**Bret** 1:01:07

I also think that this is true. I don't think it's going to be universal. Sure, it has probably has to do with the topic and the person.

**Heather** 1:01:14

Well, and how, how Sure, you were that you thought they were wrong. Yeah.

**Heather** 1:01:21

And what you think the stakes are and how long it lasted? And you all know, all of these other factors, of course, but if you control for all of them, I think I think yes, yeah. In part, in part because if a person is wrong, and it's become clear that they're wrong, and they wronged you, they owe you an apology. So they come to you and they give you an apology. But if a person is right, they don't owe you an apology. Yeah. And so you don't get, in fact, you may be the person who was an apology. Yep. And if you were dealing with having been wrong yourself by being self diluted, or by by putting, you know, by having cognitive dissonance, which I guess is form of self delusion, and therefore cannot acknowledge that you were wrong in a way that actually might warrant an apology. But some part of you some little part of you may recognize it, that there is an apology warranted, and it's nothing that can come from the other side. That is going to be a harder thing to forgive, even though it's not forgiveness. That is that the person who isn't forgiving is not in a position that they should be demanding it. I agree. Yeah, very insightful question. I think that has taken us to the end of this week. Wow. Unless you want to pose a question.

**Bret** 1:02:45

No, God, no. No, I

**Heather** 1:02:47

want to pose a question.

**Bret** 1:02:48

Stop dealing with questions this week, the better. Really? I don't know. I don't think you

**Heather** 1:02:53

mean that. No, I don't really mean you know, what tomorrow is I

**Bret** 1:02:55

do. It's Sunday.

**Heather** 1:03:02

Our producer is snort laughing in the background, because you just walked into a little mess for that you might have

**Bret** 1:03:10

thought I knew what it was. And I write and you're having trouble forgiving me for it is that?

**Heather** 1:03:17

Yes, yes, it is. I forgive you for being right in a very, very limited way. What I was going to say,

**Bret** 1:03:26

you know, fall is coming and you're going to need me during fall, you'll see

**Heather** 1:03:30

tomorrow is a day on which neither of us need to be on screen at all.

**Bret** 1:03:35

No screen anywhere, no screen. Amazing.

**Heather** 1:03:39

And I think that is a wonder but we really do enjoy doing these. And so appreciate the audience and are so grateful for you guys. But we have also been spending

**Bret** 1:03:50

way too much. Way too much time here staring at the cameras. But just because we will not be looking into cameras does not mean we will not be appearing on a screen near you. Congratulations or our apologies depending upon how you view that but in any case, yeah, tomorrow we will not be looking at the cameras that's

**Heather** 1:04:10

tomorrow we will not be looking into cameras. So again, I'll just I will just end by suggesting that you like that you share this video if you liked it, and that you subscribe to the channels and that if you you'll find find a way to get a copy of the book if you're if you're here this long, you're probably interested and so you know buy it or borrow it from a library from a friend and read it and after you do if you would leave a review. That would be wonderful. Anything to say before I sign us out, I don't think so. All right. Be good to the ones you love, eat good food and get outside.

**Bret** 1:04:50

You will everyone