Bret and Heather 67th DarkHorse Podcast Livestream\_ What the...

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**SPEAKERS**

Bret, Heather

**Bret** 00:08

Hey folks, welcome to the Dark Horse podcast live stream number 67 This time I don't even need to ask you if it's 67 I'm so certain that it is here

**Heather** 00:16

we are two thirds the way to 102

**Bret** 00:19

I had not put that together but you're right now that you mention it indeed All right, well that's an accomplishment in and of itself. All right, we are have a lot of interesting things to talk about today.

**Heather** 00:30

Winter chaos out the window. There is some of you joining us from Pacific Northwest you are familiar with what we're experiencing and yes,

**Bret** 00:36

and those who are not we have a kind of an unusual buildup of snow we sometimes get snow here it usually doesn't stick very well maybe an inch or two. In this case, what we've had is interspersed snow and sleet. So there's ice layers and snow layers and all kinds of things and

**Heather** 00:54

could do a kind of a snow geology or snow archaeology on the layers.

**Bret** 00:57

If the if the if the earth form was different, we would be having avalanche warnings, I have no doubt that large amounts of snow would be sliding off into gullies and things but you know, not in the rolling hills here.

**Heather** 01:11

Not in the rolling hills. Yeah, indeed, I guess some a bunch of covers at the Portland got didn't look it up the like, not the yacht club, some some boat yard. All of the covers collapsed on the boats. And they're presumably now like half sinking under the under the snow. So anyway, that's our situation here. We're gonna start with some announcements today. And then talk about where we're going. Lots of interesting places to go today. But first first announcement is that you are going to give away

**Bret** 01:43

Yes, I'm going to give away an invite to clubhouse and I'm going to defend the doing of that and then tell you how it's going to work. clubhouse is an interesting new social media platform, everything is audio, there's actually no way to contact anybody on it by text. Everything is done in speech. And it's all ephemeral, which has created a new kind of dynamic and it sometimes goes terribly at often goes in a fascinating way. And the thing is, it's an opportunity these invites are highly sought after it's still in beta. So there aren't a huge number of them available. And this is a great time to get in on it because it's still deciding what kind of social network it's going to be and if you're there you can participate in helping to guide it. So we're going to do is we're going to have Dr. Rola Gator our moderator decide who in the chat is deserving of an invite now I should tell you at the moment, clubhouse his iPhone on one of our moderators yes one of our moderators it is iOS only I won't say iPhone only because I think an iPad would do too. That is not the long term plan so if you don't have an iOS device you could get a cheap one somewhere or you could bank your invite and then when it goes on to Android and other platforms then you can use it then so this is

**Heather** 03:00

this is legit as someone who has never been on clubhouse I'm asking you I understood it to be somewhat somewhat elite in some ways you're allowed you are allowed to give away an invite they that's legit they

**Bret** 03:11

give us invites as a matter of course, man, we are allowed to give them to anybody. We want to I think this is completely legitimate. If it is not I apologize, but I believe this is completely within the rules. All right.

**Heather** 03:26

Okay, so other announcements and you're gonna finish with one but we had just wanted to remind people about one and tell people about two more but there were three really terrific conversations I think that went public this week. One of them was yours with Daniel shmotkin Berger here on the Dark Horse podcast available on YouTube and on wherever you listen to your audio only podcast, you'll be dropping another terrific conversation next week. We'll leave who that is quiet for the moment. So do listen, do listen to that. I also had two conversations with two just amazing women this week, two different conversations and I recommend them both highly as well. One was with Kelly J. Keen, also known as Posey Parker on the newly named newly renamed biological woman's hour, you can find that on YouTube at biological woman's hour. And then the second was with Julian Vigo on her podcast savage minds. You find that on podcasts or at our substack and I highly recommend both both of them and all the conversations and work they're putting out in the world and the two conversations I had with them in particular

**Bret** 04:32

isn't every our biological woman's are not one is just you having one even then I mean female choice being what it is. It sort of seems to me like that's the law of the jungle. Also born a woman and all that. born of woman as you point out, yes, no, in so many ways. Yes. Yep.

**Heather** 04:49

Yes. Well, we do live in an era in which pointing out the obvious seems to take up an awful lot of our time, doesn't it? Yes. Is I think Kelly j would be both of them. Actually. Kelly j Angela. Wouldn't be first to acknowledge that that is one of the sillier aspects of an era. I'm also on the discord tomorrow the discord server, which you can get access to at either of our Patreon you have, you are going to be on there tomorrow on Valentine's Day for breakfast with Brett at 10am Pacific. So that's just that's just an announcement for those of you who've been wondering if it might be might be worth it, I think it will be. We've also just posted a clip from last month's private q&a so every month we have a two hour private q&a that you can access to on my Patreon and the we are going to begin picking one clip out of each of those maybe and and making it public every month on this one is about is a story of your firstborn. And who happens to have been a crocodile right so you will find you can find that YouTube clip hat Yes, as you said in the clip so you can find that on this YouTube channel or on the Dark Horse podcast clips channel to find the story of how it is that Brett comes to identify as a crocodile mom

**Bret** 06:07

did at one point in my life at one point Yep.

**Heather** 06:11

And let's see oh you wanted because I couldn't figure out where else is might go in today's diverse show you wanted to say something about something that happened this so yes.

**Bret** 06:25

Comedian Tim Dylan on his show. very widely circulated show took us to task. And anyway,

**Heather** 06:33

truth in advertising. I have not seen this. I don't know. I know something about what you're going to say. But I have not seen the clip.

**Bret** 06:38

So he actually took you to task. Oh no particular yes for that. cat lover. Deep, lovely voice of yours. I'm not sure exactly what his problem with it is. But somehow he was impatient.

**Heather** 06:51

Does he wish I would shut up already?

**Bret** 06:53

He didn't say it in so many words. No, but he he rather broadly challenged the ITW for being unable to take a joke. Now I would Yeah. So here's the thing. He says that we're unable to take a joke. What he doesn't do is say it to our fucking faces. Alright, that was a joke of mine. Actually. I do want to caught you off guard, didn't I?

**Heather** 07:23

I just don't know what's going on. Yeah, no,

**Bret** 07:25

I just I actually think that among the strengths of the people who are typically associated you know, ITW is not a membership organization. It has, you know, flexible boundaries and all but I do think if you if you think of all the people who are named in that cluster, I think maybe one of the few absolutely universal characteristics is that everybody can take a joke, right? Everybody there has a sense of humor, except, oh God,

**Heather** 07:52

the cats. Yeah, they are. I know that. I'm sure that Eric would not say that there were any cats associated with the ITW. But there are many cat owners. And the cats such as this one, famously unable to take jokes. Don't get it. Because right over their heads,

**Bret** 08:07

I don't know that Eric would acknowledge that there are that the cats are meaningfully associated. That was my point. That's what I said. Oh, right. But nonetheless, so there's no you know, they can take a joke or not take a joke from from his perspective. I would imagine he has only finally worked his way around to accepting dogs into the ITW adjacent sphere. And what a sweet dog. Yeah, lovely. Alright, so I think that's, that's basically it, I would just say, hey, Tim, you want to make jokes about us? Just try us. And we'll see how we do it taking them in returning fire. I look forward to it.

**Heather** 08:39

Alright. Okay, so, I guess so what I want to just review some of what we're going today before we go ahead and launch into it. But first, I will also say that every week we're getting a ton of communications from people, most of which we're grateful for the vast majority of which we do not have time to respond to. And one of the themes that I'm seeing ramping up again, as we were at the beginning of last northern hemisphere, summer, for instance, is a lot of chaos in the Diversity, Equity and Inclusion sphere. And we're not going to we won't be discussing that today. But I guess I want to just promise that even though I think it's no one's favorite topic, who among those who are listening to us, largely it is a really important one. So we will probably probably next week but certainly soon talk again about some of what's happening in in that space. Yeah, it does

**Bret** 09:31

seem to be moving rather rapidly. It's about time we revisit it and figure out where we've landed.

**Heather** 09:37

Yeah, exactly. So but first, no, not first, this week. This week, we are going to spend some time talking about SARS COBie two origins and what the what the who Commission has said, and why we should definitely listen to the authorities and they tell us to follow this science but not that science. Right. Well, who what, what the who And then, and you know that'll that'll be riffing on various topics in that in that space. The things that I really want to talk about this week include how the moon affects our sleep, how fish are being affected by pollution in the water supply, specifically antidepressants. And what carnavon, which should have started yesterday, but has been mostly canceled most places, including the American version of it, which is Mardi Gras means what it's a response to what its value is, and talk a little bit about our actual history with, with Carnival and and finish by showing I've just chosen 1213 photographs that you took when we were able to experience Carnival ourselves in 2016. So those are some of the places we'll be going today.

**Bret** 10:48

I have a prediction on one of these. So I don't know where you're headed with this fish thing. But I have the sense that antidepressants affecting fish will result in something very, very bad about which the fish will feel better than they might.

**Heather** 11:01

Yeah, I

**Bret** 11:02

know, we could just leave it as a prediction.

**Heather** 11:05

I'm not sure better. I think there's kind of a an unfortunate regression to the mean going on with regard to these mood disruptors, makes everyone more, more Cloner. Even the fish. The cloned fish. Yeah, exactly. Okay, so you came to me this week and said with regard to the origins of SARS, Coby to theirs, we have talked about it many, many times. And we have not tried to put together a like an organized here is all the evidence explanation. And we're not going to try to do that today, either. I don't I don't think that a free flowing conversation is the right place. I think that is exactly what scientific papers are for. And there have been some some good ones, although the evidence keeps on new evidence keeps on arising. But one of the things you specifically said to me was, no matter what, no matter whether or not this thing emerged from a lab, or it came or we've we're never was inside a lab. We are missing an intermediate. Like there is an intermediate form for which we have no evidence at this point. And you know, it's akin to the sort of missing link talk in evolutionary biology, although most evolutionary biologists don't talk in those terms. But what we what we know for sure is that there is the most closely related virus that we have that says wild virus that was collected in 2013 in Yunan province, is not the same as SARS, co v. Two. And what happened in those intervening eight years?

**Bret** 12:45

Yes, and we don't actually know that are ATG 13, otherwise known as 4991. A interesting story in itself. But you know, we don't know that it is the ancestor of SARS COVID. But it does appear to be a very close relative of it. So anyway, what I wanted to do was try I have the sense, you know, at some point, you hear the conversation, and you hear people reacting to things like the lab leak hypothesis and dismissing it, and you realize, they don't even understand what is being proposed. And in fact, they may be dismissing it, because they have the sense that it is very different than the actual hypothesis on the table. So what I wanted to do is recast the question so that at least we are all on the same page, everybody should be on the same page with respect to what it is that we are looking for, and why and so yes, missing link is something we are looking for that term really does apply here, we're looking for a missing link in an evolutionary chain. And what that missing link might be is the question. So we should all be able to see that that dynamic, but the first thing to say is that it has become clear in some of the dialogue that has gone on in the mainstream press in the aftermath and part of our appearance on Bill Maher, that when people hear lab leak, they often assume that what is being suggested is that scientists built SARS covi to from the ground up that this is a synthetic virus, and nobody serious is arguing for that.

**Heather** 14:25

I don't believe that I've seen it proposed anywhere. I've seen it. I've seen our stance to it as if someone else had proposed it, but I actually I at least and maybe I've missed it, but I have not seen anyone say I think that's what's going on or or even I think that's a hypothesis that deserves to be on the on the table isn't meant to be taken serious. Let's put

**Bret** 14:43

it this way. To the extent that people are dismissing the idea because it seems implausible, it actually is implausible. Now it is not implausible that somebody could take a sequence from a living virus and effectively generate a synthetic version of it. That is plausible. What is not plausible is that human beings could design a virus that would be effective at spreading through the human population, we don't know nearly enough, right? We haven't even as far as I'm aware, gotten to the point of putting together a protein from scratch, we cannot write a protein that is useful. Maybe we could do something structural, but we can't write an enzyme. It's far too complex for us, we don't get it yet. So to the extent that people are comforted by the fact that it sounds unlikely that scientists would have constructed this virus, they are right, so iron scientists couldn't have constructed this virus. But what they could have done is composite viruses from nature, they could hybridize viruses and make a chi mera, they can also use evolution to do things that they themselves do not know how to do. And so the core of the lab like hypothesis is that serial passaging, which is basically the acceleration of selection in the lab using either tissues or creatures.

**Heather** 15:59

It's tissues, it's in vitro, if it's creatures, it's in vivo, serial passaging, just for those of you who have heard some of these terms, right? So yep, serial passaging.

**Bret** 16:07

And it could could be both right? You can see real passage and tissues and then creatures, you could also what does that look like? What Why don't we actually get a good look like is you force an infection of a creature, and then you how's that this is the the the nvn. vivo version, you how's the creatures together such that they are very likely to transmit the virus to each other. So even if the virus totally sucks at this job, it occasionally jumps. And the ones that do jump, therefore, are the ones in the population of virus that have the characteristics that make them more likely to jump. So if you do this enough, what you get is the accumulation of those characteristics that make the thing better in jumping. And it's an exact analogue for what takes place out in the world when viruses evolve on their own. And what

**Heather** 16:53

you've just described is also that in vivo serial passage in is a type of it's a subset of gain of function research.

**Bret** 17:01

Yes, though, the purpose is to add functionality to these things. And in fact, the thing it is best positioned to add functionality, that type of functionality, it's best positioned to add is transmissibility. Right? Because that's effectively what you've done is you keep asking it a transmissibility question rather than for example a, how long can you last dormant on a surface question,

**Heather** 17:24

right? So SARS COVID. One was it was a reservoir. I don't know if that's how actually people say it but but lived in horseshoe bats. And then we believe had a spillover event into civets was it? It was palm civet. samsa. That's and then from pumps if it's spilled over into humans

**Bret** 17:43

on civets, which are cultivated and consumed by people.

**Heather** 17:47

Okay. And MERS. Yeah, similarly, was in I don't know what bats first I think I believe it's hard for the bats, although I would, yeah, for sure. And then spilled over into camels, we think. And then, and then camels spilled over into humans. Now, none of those two stories, if they're true, don't involve any anthropogenic research. Rather, there's no there's no human research there. But effectively what selection is doing to us the human imposed language is that virus is gaining function by spilling over into new hosts. And it is not going to gain the kind of function that we're talking about with regard to serial passage research as fast because it's not being forced as fast. But you could think of, for instance, that intermediate host in Mars being camels as as gain of function camels, right. And you could think of those intermediate host palms of Edson saris COVID one as gain of function palms of its and this week, Peter das ik and who commission decided that we've gotten and originally we thought we were being told that was maybe going to function pangolins for SARS, covi, too. So we're being told ferret badgers,

**Bret** 19:04

yeah, frozen ferret badgers, in fact, we will get back to the frozen ferret badgers in a second, I want to put this in context. Okay, the thing so it's interesting talking to people who are looking into the possibility of of a lab leak, we differ on what we see as the most conspicuous piece of evidence that points to this not having been a natural spillover event. In part those differences have to do with what our areas of expertise allow us to see most clearly. In part, it has to do with different Basie and weightings. But the thing that jumps out to me and many others, is the fact that the virus is so well adapted at the point that it first emerges, right and this is conspicuous in a couple of different ways. One, it's very much better at jumping between people than you would expect. Fact. And there is no diversity, there's very little diversity amongst the early sample. So what we do not have evidence of is a spillover event that took place in Wuhan took months or years, in order for some Viral lineage to gain the capacity to jump well between people. And then suddenly we got a pandemic, we have no evidence of that what we have is evidence of something that absolutely hit the ground running right. Now hit the ground running suggests an intermediate that we don't have, right, that intermediate could have been pangolins. But I must say the first time I heard pangolin, I thought pangolin ecology does not fit the story very well, right. Even if this is a plausible mechanism you have you know, you're in order. So the reason that pangolins came up is that some smuggled pangolins had a SARS Cove with an RB d a receptor binding domain, that was a much better match than anything else for SARS covi to now, that receptor binding domain is key to entering the human cells. But in order to get a virus, which is overwhelmingly like ra Tg 13, which came from bats and Unum. And to get the receptor binding domain that was found in these pangolins, you need an event where, let's say a pangolin is infected with both things and some cell ends up with both viruses and then there could be a crossing over event. But it's hard to figure out how ecologically that would happen. And what has happened in the many months since pangolins were initially proposed is that the pangolin hypothesis is falling apart and the reason it's falling apart. There are many different lines of evidence. But the fact is the SARS Cove that was found in the pangolins is actually much better adapted to infecting humans than it is to infecting pangolin. So it doesn't look like something that was resident and pangolins. Nor SARS coves widely known to be in pangolin. So something is very odd about our

**Heather** 22:05

stoves or so I'm just not clear on what you're saying. Are you saying SARS Cove as a shorthand for SARS? COVID? One? Are you talking about the general class talking about coronaviruses? slaid? Okay, so, okay, so there's probably a more precise way of referring to them then, because that sounds like you're talking betacoronavirus.

**Bret** 22:23

Okay. So, in any case, the pangolin hypothesis has become very, very unlikely, right? In fact, I would say the evidence against it is very strong. And I was thinking about reading a little bit from a paper that describes why that hypothesis has come apart, but I think it's probably too technical. And we'll we'll leave it alone. But nonetheless, the point is, pangolin, could have been the link between a bat virus, which was not very well adapted to infect humans, but was very well adapted in bats to a virus in Wuhan that is very well adapted to humans, right, except that it doesn't look like pangolins could have been the place where that took place. So what that means is, if it isn't pangolins, the hunt is on for something, right? And that something could be a lot of different things. It doesn't have to be a critter, right? It could be that a spillover event in some other place, resulted in a weak exchange of viruses, a poorly adapted virus jumping occasionally between, let's say, people in some other location, and eventually learning the trick of infecting people. And then somebody getting on a train and showing up in Wuhan, and then us monitoring it and suddenly discovering a virus that's very well adapted to people. It doesn't say that the evolutionary phases Epson, it just says it didn't take place in Wuhan. But

**Heather** 23:43

well, but when you say it doesn't have to be a critter, right? You mean is that there doesn't have to have been an intermediate host of a different species than the original, which is probably a horseshoe bat, or the final, which is humans, that that's what you mean by it doesn't have to open a credit. Right?

**Bret** 23:55

What I'm saying is, you need some sort of intermediate, it could be a critter critter is most likely the versions of this that we've seen typically go through a crater, but it could be that it jumped to people directly and then went through a rapid evolutionary phase. And the reason that we see no evidence of that rapid, rapid evolutionary phase is that it happens somewhere else. However, that's a hypothesis. And it makes a prediction. And the prediction is, there's a population somewhere else in which there will have been some epidemiological pattern, something that will initially have been dismissed as some normal kind of pneumonia will ratchet up get spread better. And in order for something as well adapted as what emerges in Wuhan to show up, there will be the late stages of that epidemic, which will have been very conspicuous and we would now an additional

**Heather** 24:42

prediction of that is that even if it wasn't recognized as such, at first, is that that population might be less susceptible to SARS, COBie two as it circles back around and gets back there. Given that we believe that there you know, there is certainly strong evidence for at least some short termism intermediate term immunity from having had started scurvy to

**Bret** 25:04

and in fact, in fact this is being discussed this is being discussed as one possible factor. It could be that something like this virus or this virus in some early stage circulated in Southeast Asia in places that have actually been more successful at beating SARS cov. To right, and so that is one thing that has been discussed. But the basic point for us here is there has to be some intermediate, right? This virus knows the trick of infecting humans extremely well, right? It is, it is post adaptation. Where that adaptation took place isn't pangolins it doesn't appear it we don't have a another candidate that has emerged, we don't have a human population in which it could have learned this. And so in some sense, the laboratories in Wuhan are one possible intermediate, right? They are not the only possible intermediate and what Heather mentioned a few minutes ago, the who, in collaboration with China appears to be steering us towards another hypothesis. Now this hypothesis, yeah. Zack, do you want to show that data clip? Okay, so we unfortunately can't hear the clip. But you will hear I'm just gonna give you one brief one couple minutes from this interview between Becky Anderson of CNN and Peter das ack of this who commission who you will have heard as mentioned before, okay, so the clips are?

26:43

Well, we're talking about something very different right now than, you know, a package of frozen fish from somewhere else in the world. We're talking about the origins of SARS COVID, to the COVID outbreak in a market in wihan, the likely center of the early spreading of that outbreak. And what we see there when we visit that market is a place that sold a lot of frozen products, not just the typical things, we would buy a supermarket, but also frozen animal products from animal farms in Southeast Asia and inside China. And there is a really striking piece of evidence that was mentioned today. In the press conference, that in those products were included wildlife, meat, and carcasses from animals that we know are susceptible to co coronaviruses. And also that the supply chains come from places in China, where we know the sauce Coronavirus to related viruses are in other words, a direct link from the potential bat origins of this bus which most scientists believe is true into will hand market now scientists in China tested those carcasses and they were negative. So that's good. But we don't know what else was there. We don't really know if there were live animals, those there's no evidence of that. But we don't know. And we don't know how many of these animals were part of that frozen market or even other types of meat. So, you know, too many of us on the team. It was a clear clue as to what may have happened and it was one of the the pathways that we thought was more likely than others for sure.

28:21

Let me just be quite clear about this, then it's one of those pathways that might be more likely you say and that's an agreement that you made as a team, but I'm struggling Alright, to understand.

**Bret** 28:38

So again, keep going then

28:43

specific evidence that you have to support this contention. So with respect.

28:50

What was specific evidence comes from the word that the child has been doing that Chinese scientists have been doing from really day one of the average so around about China, the first scientists from China, CDC went into the market and started swabbing the market. They looked at sewage, they looked at stores where they sold food. They looked at the stores where the people were positive for Coronavirus. They spent about a month on the swabbing testing over 900 samples quite a really thorough deep study and most of the animals products had gone but there were some still there and if there were there were live animals in the market when we think mainly aquatic animals but we don't know there is there are rumors of live mammals in that market. But what was really intriguing was this find of carcasses of animals, mammals, actually ferret badgers, which were type of animal it's widely across Southeast Asia, which we know has the capacity.

**Bret** 29:48

All right, so that was Peter das sack and I we will put a link to that. That little interview. In the description of this video. You should Check out the whole thing. It's rather incoherent. What I believe is not said anywhere is that Peter das AK they say he's a zoologist on the who team, Peter dedsec is more than as apologist. He is also head of eco Health Alliance, which has been deeply involved in the funding pathway for gain of function research, including sending millions of dollars to Wu Han to study these very viruses. So he has an intense conflict of interest. But the Go ahead,

**Heather** 30:27

the description of him as as well, just across all of the major media platforms, whenever they mentioned him is is beginning to feel intentionally misleading. It is true that he's a zoologist. And that that is that describes his training from many decades ago. But what his work has been the way that he has made a living for all of his recent history is as president of an organization that specifically works on gaina function research on Coronavirus is on bats, and works with the Wuhan Institute.

**Bret** 31:00

So to be clear, we are not looking to blame anybody for the the covid 19 pandemic there is fault, we believe in at least the recklessness of the gain of function research, which if it didn't, cause this outbreak certainly could cause a very serious outbreak. So there's something about this, that requires our scrutiny. But at some level, what we have here is a failure to appreciate the hazard of gain of function research. And that's a hazard that's a failure on the part of the international scientific community. So the point though, is datsik has the strong incentive to favor any hypothesis other than a lab leak. And so the fact that he's on the who team I believe he's the only American on the who team really raises the question about what sort of investigation This is. But the key, the key here is that you can see dacitic is very excited about the possibility what he says is evidence of another pathway, basically that there were frozen ferret badger steaks in the Wu Han seafood market. And what the reason that this is exciting to das AK and others on the who team is that ferret badgers are mustelids which are another creature which SARS co v two can infect. So we have seen unlike the case with pangolins, to which SARS COVID two is not well adapted. SARS COBie two is also not well adapted to bats. But it has spread like wildfire through mink farms. So minks are mustelids. And the virus not only infect makes we've seen it infect other things like big cats and zoos. But what it does not do is spread from the case and minx is exceptional. So minks actually catch the disease and they spread it very much like humans, it's well adapted to people, it's well adapted to mix. And ferret badgers is a small clade of closely related creatures in Southeast Asia.

**Heather** 33:18

Allow me to just do a tiny bit of phylogenetic description here. So this from one of the tomes of mammals it's it's a little dated at this point, but this is this is the second second volume of Walker's mammals Walker's mammals of the world. The one that includes the Coronavirus, which is one clade within the carnivor. We have as you have said, the mustelids which includes broadly speaking, the weasels ermine stoats, minks, ferrets and polecats. And then also within the mustelid is the genus mela Gail, which the common name for which is ferret badgers. So you know, that's not a not a misspeaking, it's neither a ferret nor badger, although it is closely related to a ferret and you know, this is this is well across a lot of common names right that that you end up with, like I don't know what it is, I'm going to kind of call it both things and

**Bret** 34:05

that both ferrets and badgers are mustelids. So it is it is one of the rare cases where these two things show up in the right plate. So

**Heather** 34:15

yeah, spotted skunks anyway, it's it's a cool place.

**Bret** 34:18

skunks have been moved out of them. Estella does not meaningfully, but skunks, I believe so.

**Heather** 34:24

Okay. So I just I just had a couple of sentences from Walker's here about the bird badgers also at the point that this book was published in the 90s. There were we thought there were three species now we think there are five You know, this is a splitter, lumper distinction that is not of much interest to anyone. Outside of the people doing this work. Certainly very little interest to the providers themselves actually. So fair. to the third, badgers are found in wooded country in grassland, they climb on occasion. ferret badgers are savage and fearless when provoked or pressed and have an offensive odor. And it fair it better so the diet is omnivorous and is known to include small vertebrates, insects, earthworms and fruit. And a ferret badger is sometimes Welcome to enter a native hut because of its destruction of insect pests. So welcome in the places where they live, which is, as you say, sort of broadly throughout South Asia, Southeast Asia.

**Bret** 35:18

So a couple things to say one Peter destek reports that these things are widely eaten I don't know how widely they are eaten apparently you found evidence that they are eaten by some people.

**Heather** 35:32

Yeah, I think let's see the IUCN Red List if I can find it here. So the IUCN being the What does it stand for and why isn't it on the page the IUCN Red List did suggest that they the one very widely distributed species which is the only one that is in China, including the range of including within the range of Wuhan does get eaten sometimes, but this is a long, okay, along

**Bret** 36:04

with the Chinese food, badger. Okay, so the point is no. So let's put Peter hdacis motives aside. Peter dassey, for whatever reason, does not find the lab leak hypothesis credible, and it has in fact portrayed US and other people as conspiracy theorists for even considering it. But really, the point is, we need an intermediate lab, the lab would be one obvious intermediate. In fact, the use of mustelids in the lab is likely ferrets would have been a possible creature in which serial passaging might have been done, which would very well explain why this is so easily infecting and spreading between minx. We don't know that to be the case. But it's possible. But in any case, the fact that it spreads in mustelids means that if they can find a misspelled link, that okay, in principle, there could have been an epidemic of the ancestor of SARS COVID, to in ferret, badgers in let's say, some other part of China or some other place where they exist. And then he proposes that they could have that in fact, there was ferret bait badger meat in the Wuhan market, he says it was tested negative, which is good, I don't know why he regards that as good. This virus came from somewhere, and this would be as good an answer as any if it was true. So anyway, the link would be the frozen ferret badger steaks, having come from infected animals where the function of infecting human cells was gained in this intermediate resulted in the transportation of the virus to Wu Han where it then infected somebody in the market or infected somebody who took the steak home from there. Now this is highly unlikely. For one thing, we would have to imagine if that was the expected route, then it would have been effectively SARS covi, two that came off that steak because if it wasn't, then there would have been an evolutionary phase in Wu Han for which we have no evidence. So it effectively has to have already done all of that evolving at the point that it arrives in Wuhan on the steak. And what we know is that these viruses don't transmit effectively this way. It's not to say some viruses couldn't and it's not to say it's completely impossible. But the idea that this came off of a frozen steak is pretty unlikely given how overwhelming the transmission by airborne and aerosolized particle seems to be of this virus. So in any case, this does have the sense of the hoo team grasping at straws. They don't want to look at the lab like hypothesis for which the evidence has gotten stronger and stronger. It's not a settled question, but it is stronger. And they do want anything else that could take the place of that missing link in the logical chain. And so they are now putting, you know, one way to say this is frozen ferret badger steaks are the new pangolins. All right.

**Heather** 39:03

So just to just to wrap that up a tiny bit more, Zach, if you would show my screen just for a minute, three days ago on February 10. Nature published in their news section, major stones unturned COVID origin search must continue after who report say scientists. Investigation Team rules that idea that the Coronavirus came from a laboratory leak but offers two hypotheses popular in Chinese media. Well, that sub headline actually is not an accurate portrayal of what's in the piece sack if I might have my screen back here. I'm just going to read from two paragraphs lower down in that report, quote, another focus of the whose investigation was the idea of the virus like from a lab, a scenario that the team found unlikely. Incidentally, unlikely and rules out are not the same. Peter, Ben and barrack, the food safety and zoonosis scientist with the who in Geneva, Switzerland, who headed the investigation, said at the press conference at the team had conducted extensive discussions with If at the Busan Institute of virology, which has been at the center of the speculation and similar labs nearby, he said a leak is unlikely because the virus is not known to scientists before December 2019. Dwyer that's a medical neurologist at New South Wales health pathology in Sydney, also a member of the who team. Dwyer says again, still quoting from this nature news article from February 10. About the who report, Dwyer says that the team didn't say. Dwyer says that the team didn't see anything during its visits to suggest a lab accident quote, now, whether we were shown everything you can never know, the group wasn't designed to go and do a forensic examination of lab practice, and, quote, maybe true? If so, why not? How is it that they were going in order to actually contemplate all and assess all of the hypotheses on the table, of which there is considerable evidence pointing to the idea of a lab leak? If they were not actually ready to let's see, wasn't designed to go and do a forensic examination of lab practice? Who then is

**Bret** 41:05

and so what effectively this does is it conflates an absence of evidence? Well, we weren't equipped to do that investigation.

**Heather** 41:13

And the people who were there say it didn't happen

**Bret** 41:16

right. Now, I will say, weren't the case that this virus did not emerge from that laboratory, you would have the people in the laboratory virtually certain that this had not been on their watch,

**Heather** 41:29

they would sound the same way they do, which is part of why you can't look at them and say, Listen to how they sound, that's evidence, they would sound the same either way,

**Bret** 41:37

well, they would sound the same. And I believe the the, the strong implication is that they would behave very, very differently. Now, nobody knows what goes on inside, you know, internal Chinese government discussions of these things. But the fact is, the behavior of the laboratory has been incredibly suspicious and has been the opposite of transparent. And under normal conditions, you would imagine that were you to run such a lab. You know, Zhang Li herself says that when this virus first emerged, she didn't get a wink of sleep for fear that it had escaped from her lab. Right? And then she reports didn't and therefore I, you know, relaxed, but the point is, she considered it plausible, right? Were you to find yourself in the situation where you knew that it didn't come from your lab because you'd never seen that sequence before it's out in the world it's doing trillions of dollars of damage to the world economy and killing millions of human beings you would be very inclined to show your books and say didn't come from here. Take a look right even if that wouldn't be your normal impulse because everything is riding on this question including the future of this lab so the idea that that they would want to keep you know So in any case what I'm what they did was delete a major database which would have contained likely contained evidence they haven't shown notebooks they haven't opened their freezers the who Commission says lab league very unlikely but of course we're not in a position really to have done that forensic work right

**Heather** 43:15

and the spokesperson from the who team not the leader of it but the spokes the main media spokesperson darling is directly tied in funding the research that was being done in that lab

**Bret** 43:25

right So in any case all of this again raises the specter of can we just please have an open investigation every hypothesis on the table including frozen ferret badger steaks that's a hypothesis but at this moment what that is is a hypothesis with no evidence the like the sum total of the evidence for that hypothesis is ferret badger steaks were apparently present and tested negative right

**Heather** 43:52

you know, I I don't know why I'm sure that the duck wasn't thinking this but whenever you say frozen ferret badger steaks, I imagine one with a stick I imagine actually a ferret frozen ferret badger popsicle. And you know maybe maybe you're more inclined more more likely to get the virus by looking at slowly thawing for frozen ferret badger popsicle then you wouldn't be by frying it up and I think maybe to both actually. Maybe you you you literally frozen ferret badger popsicle until it thaws and then you try it and then you eat it.

**Bret** 44:24

Still, I think it's unlikely to transmit that way. I think you would have to, he would have to shave it and make particles with you sort of

**Heather** 44:32

Oh, aerosolized. Frozen ferret badger steak popsicles? Yeah.

**Bret** 44:37

Or snow cones?

**Heather** 44:38

No. Actually, that sounds pretty parsimonious to me.

**Bret** 44:40

Yeah, yeah. Yeah, the whole thing is, is rather rather remarkable. But, hey, we've got a number of you know, did it evolve somewhere else? That's a hypothesis, right? It's a hypothesis that involves a train. It makes a prediction. There's a population somewhere else that had an epidemic that we haven't found yet in spite of the fact that

**Heather** 45:00

The entire world is looking just look like you're all looking right? Yes.

**Bret** 45:04

Did it start in ferret badgers who were then re transported maybe live? Maybe that's what happened live to the Wuhan seafood market and they coughed on somebody, we have no evidence of it. Okay, it's

**Heather** 45:15

coughed. Basically, before being turned into ferret badger popsicles?

**Bret** 45:19

Well, here's the thing. They've got the frozen steaks, you and I regard the likelihood of frozen steaks is pretty low, because the

**Heather** 45:26

likelihood of them having passed this having passed it on that way,

**Bret** 45:29

but they're also live animals in the market. He waffles over whether or not there were any live ferret badgers. But nonetheless, let's say okay, the hypothesis that it was ferret badgers in some other part of China, that is a viable hypothesis, right? What does it predict it predicts a population of ferret badgers who a probably are still circulating this virus, we should be able to find them. Right? b will show you no immunity to it. In other words, we will be able to see that they have antibodies to this very thing. So in any case, we could probably come up with a dozen predictions from that hypothesis. Well, let's go to it. That's our hypothesis on the list. But so is the lab. Right? So anyway, that's how all of this should be should be dealt with. We're looking for a missing link, we should all agree on that. That Missing Link can be anything from a laboratory to a population of mustelids. And all of these things make predictions. That's the nature of our hypothesis, and a proper investigation would simply sort through these things. And at the end of the day, we would very likely get the answer. But we're not going to get it by saying, you know, that hype, there's no evidence for that hypothesis. Why is there no evidence because we didn't look for evidence. Okay, that's not

**Heather** 46:40

well, to the degree that we looked for evidence, we asked the people who would have the most to lose if that hypothesis were true. And they said it isn't true. And so we said, okay, we trust them. Don't you trust them? How dare you not trust them? What do you sign a phobic? Yes. Come on.

**Bret** 46:52

Right. Exactly. Okay. Good. Well, I think I think we covered the topic, I believe that makes it clearer why the discussion is moving in the direction it's moving, and what is really at stake in the various claims. Yeah.

**Heather** 47:05

Okay, just a little bit more on COVID, though, because we got we got a section that I have tentatively titled here, follow the science, but not that science, you fool. So we have published this Well, actually, I guess a little over a week ago, a Wall Street Journal opinion piece and op ed, you can just show it very briefly here, Zach, called the universal vaccination. Kamera tools for stopping variants are limited and like masks and distancing, that vaccines are not a panacea by a guy named Joseph, a le dapo, who is an associate professor at the med school UCLA. So I came to I just in the last week, I found this because he and this piece were being discussed as if he was an anti vaxxer. And increasingly, I distrust the assessment that someone has an anti vaxxer just like, I know, distrust the assessment, someone's a racist or a fascist or outright or Nazi or transphobic, or any of these ridiculous epithets that are used to shut down discussion. And sure enough, this piece is not anti vaccination at all, it is saying basically, that we need a multi pronged approach to deal with this pandemic. And that masks are some of the solution and that distancing or some of the solution, and that vaccines are not going to be a magic bullet, a panacea in his language. And so just to read, and you don't have to show my screen here, Zach, although I guess you could have no. The last two paragraphs of this wall street journal op ed, are other forces pushing mortality lower. The CDC estimates that approximately 83 million Americans contracted covid 19 through December, reinfection risk is low for at least six to nine months following infection and taking out not quoting anymore, six to nine months, because that's how long we know. That's the that's the that's the length of time that we have data for this at this point. So you know, in line with our earlier discussions about vaccines, where we really, really really hope this mRNA vaccines are awesome that they have long term safety, but we cannot know yet. Similarly, we cannot know about long term reinfection risk for COVID-19 to continue quoting from this wall street journal, op ed from February 4. ladapo says there is also growing scientific evidence for outpatient therapies such as ivermectin, colchicine, fluvoxamine and the politically charged hydroxychloroquine as well as better hospital practices. A sharp decline in mortality will give rational thinking a bigger stage allowing schools to reopen on social and economic activities to resume. It will also liberate American society from the fear fueled decision making that has dominated the pandemic response, which isn't that again, what we should all be looking for here, a reduction in fear, which is fueling a just insane level of incoherence in terms of the policies that we are Seeing so two, two pieces of evidence from this week about the ridiculous city. Yes, the particularity of the responses that we're seeing. Here we have Zack if he would show briefly from February 10, three days ago. Officers at dorms, outdoor exercise ban. This is a terrible headline. UC Berkeley extends dorm lockdown with stricter mandates. So the message here is okay, this is a terribly headlined article, Zach, if I may. So I can see my own notes on this. UC Berkeley, you know, the one of the shining jewels of the UC system has banned solitary outdoor exercise in order to tamp down the pandemic, I guess, but that means people are now locked in their dorm rooms with circulating air that they are sharing with other people.

**Bret** 50:51

Yeah, it's almost certain that that policy will do harm to some people because some hours that would have been spent not in close contact with others will be spent in encapsulated with them

**Heather** 51:08

without getting any fresh air without getting any exercise without seeing any other human beings perhaps without making

**Bret** 51:13

vitamin D. So this is Alan, they're going to implement this is not

**Heather** 51:17

going to make people sick. That would be my prediction. Yep. Yes. And just the second piece of ridiculous in terms of how, how efforts are proceeding to affect behavior. I'll set this up by saying increasingly, when I'm out on walks, even if I'm not within six 810 1220 feet of people, and I have my mask in my hand clearly ready to put it on if I do have to be close to people. I am and I've said this for months now but I get you I get the stink eye from people for not actually being outside wearing a mask and you know, it's winter here. It's actually really winter here right now. And I want it's, it's healthy. It's not just I want but it is actually healthy for me and everyone will be healthier if they get exposure to the actual elements on their skin. And in the winter. Your face is one of the few places that you can get that so Why are people so confused? I mean, in part, it's because people feel virtuous, and on the right side of history, for yelling at other people for not wearing masks. This is this is unfortunately the landscape we're in and it comes from a place of fear and confusion, but that doesn't make it any easier to deal with. So this week I received the Oregon Coronavirus update again on February 10, and Zach so this is just the web version of it so that you guys don't see the actual email but it's the same thing campaign reminds us masks save lives. Here's one picture. Cindy is a wildland firefighter from Southern Oregon, she wears masks to protect her she wears a mask to protect her crew from COVID-19. Just like She protects Oregonians from fires, okay, I don't see anyone else in that picture. But whatever, I'm not going to focus here, this seems likely to not be the thing that is necessary here. But if you know with her crew sitting in close quarters, okay, but the next picture here is Ethan is a rancher and Pro Bowl rider from Eastern Oregon who wears his mask that we can so that we can return to normal life as soon as possible. And this picture for those of you listening and not observing is a vast sort of Eastern Oregon Chaparral scape, endless rolling hills for as far as the I can see one person on a horse, no other people, no other horses, no other anything that might be transmitting this virus. And this guy's wearing a mask. And we are being shown this picture as evidence of how much he cares about us and has evidence that this is going to do anything to reduce transmission of COVID. I have looked, I may have missed it. Please, please, please share it with me somehow, if there is new evidence that any of these new variants or even the older variant can spread outside, we covered in I think, April, the evidence that was already out at that point, extensive evidence that this virus is not transmitting effectively outside and certainly if there's no one around, where could you possibly be getting it? Right. Why? Well, why are we getting this insane advice. It is about widespread behavior control. I don't I don't frankly care if it comes from a place of really feeling good about trying to help people and just being really confused. The effect is widespread behavior control and those of us who are not interested in behaving in ways that confused authorities tell us to do or now occasionally getting yelled at by our neighbors when we are outside actually getting the wind and the sun on our face.

**Bret** 54:55

So what's driving me crazy about this is that The advice is low quality, and it has this kind of defect to it where the assumption is, well, it can't hurt. Right, right. And the answer is, of course, it can hurt, right? To the extent that people are being driven crazy by lockdowns and don't want more of it, you want to give them as much of a reprieve as you can, to the extent that outdoors, when you're not near the people is safe, then the point is, Hey, take your mask off, the official advice ought to be when you're not around other people outdoors, take your mask off, right. And if we should put it on when we pass each other on the trail, even though there is frankly, no evidence that that is dangerous, okay. But, you know, look, the model that we built up was, doesn't seem to transmit outdoors, that gives us a loophole that we can exploit for better psychological health, greater vitamin D creation, all of those positive benefits, right? We ought to protect it, because it could evolve to transmit outdoors, it's one of the things that I would actually expect. And the way to prevent it from doing that is to actually be more cautious than we should be put masks on when we're you know, standing in the ski line or whatever, even though there's no evidence that it transmits in those circumstances didn't

**Heather** 56:12

seem to have that that evolutionary move to not seem to happen in the wake of the massive regular protests from last northern summer.

**Bret** 56:21

Right. But in any case, a rational course would be the place where we know you're safe is when you're not around other people outdoors and not around other people might mean 12 feet away, right? Right 12 feet away, you can afford to have your mask down and not you know scowl at the other person for you know, not wearing a mask whatever it is we can afford that reprieve the risk is really, really low. As we get closer where it's more plausible that something could jump, we should be protective of the loophole so that it doesn't disappear on us. But we should not pretend that the point is I'm actually exposing you to you know, a risk just because we're standing near each other outdoors. So the policy is just

**Heather** 56:58

I'm also sorry to interrupt you. But like I'm also really concerned about caving to other people's fear. I and you know, the fear is being generated, and and curated and augmented by by government officials, frankly, and by you know, these you have government officials at the state level and at the federal level, and I assume elsewhere in the world as well. But then you have a populace that is increasingly just fearful, and dysregulated. And can't remember what normal was, and is frankly, having an ever harder time imagine that normal will ever be back. And in those conditions, especially really any time. But in those conditions, especially. I don't, I think it's actually even more dangerous to say I get that you're scared, I will just let your fear drive our behavior. No, that's like that's the mistake of safety ism on campuses of trigger warnings of all of the stuff that created a hole dysregulated, unable to figure out how to move forward in the world populate a generation of sort of, you know, the second half of millennials. And you know, again, just caveat, we happen to be teaching college for like the entire millennial generation, and almost to a person, the students we met, didn't need that stuff. They didn't ask for it. And when we said that's not what we're going to do, we are going to treat you with respect. And we're going to challenge you, we're going to show you things that you don't like and that challenge your preconceived ideas. And we're going to expose our biases and your biases and all of that. And guess what people actually ended up educated and less fearful and more capable in the world. And why the hell are we asking an entire really global population at this point, to fall prey to the same garbagey garbagey ideology that is clearly causing higher ed to fail?

**Bret** 58:45

Well, and at some level, to the extent that we push nonsensical and by nonsensical I mean doesn't match the empirical evidence, mask policy, we are going to cause rebellion against it. You don't want to give people who are anti mask, for example, more of a point than they should have. And to the extent that you're advocating things that don't make sense. You're doing exactly that. Now, I got taken to task this week, I tweeted something. I never know which tweets are going to take off, but this is one of my most popular tweets ever. Okay, though I did I expected it to go not very far. My tweet was something like if double masking is that much is so protective, why aren't they built that way in the first place? And this was an honest question, right? Because a, I don't buy the double masking is good. That does not mean that there are not combinations of masks that would be better. But here are the questions that immediately arise in this context. Okay, COVID is a risk transmitted, it's a respiratory virus. It's not it's the reason that we have masks for the protection of people in the context of respiratory viruses is COVID different in some way. That to mask are good for COVID and not for other things that are transmitted this way, in which case, that's interesting. But I want to see that I want to see Oh, we've been making masks wrong the whole time. Lots of people have been getting sick even though masks were used, because the match could have been twice as thick. And then we should make them twice as thick.

**Heather** 1:00:15

Go ahead. So my my only rejoinder to you and I think we did this over the dinner table, in fact, was the one reason the one analysis that I have seen for the conditions under which two masks might be better than one Well, I guess two, one is that the mask that you were wearing was a low quality mask to begin with. And in order to make a single high quality mask, you just want to double up to low quality mastered low quality in different ways. Okay, great. Also, why don't you just get a high quality mask? So like, that's, that's one answer. And for, you know, for me, I'm wearing these masks that my mother's making, thank you. And they're, they're wonderful. And they have two layers of cloth, and they have a layer of additional, I can't remember what the specifics are mom have additional stuff in between the two cloth layers, and they fit my face really well and the comfortable, and they're awesome, and you can't tell by looking at it, that it's not just a cheapo single cloth layer mask. And that's maybe unfortunate, but I know that I'm walking around when I'm asked, and it is, you know, every time that I'm around strangers, and anytime I'm indoors, it's not our home, that I'm wearing a single high quality mask, the one the one place that I see, even if you've got two highest quality masks is that if they fit your face somewhat differently, and each of them is a slightly imperfect fit, that potentially having the mask that fits better on top of the mask that fits worse can basically help it conform to your face better,

**Bret** 1:01:43

that's great, then we would then we need the information to be given to you so that you can figure out whether double masking is better because here's the problem, okay, if two masks are better than one are three masks better than two are foremast better than three. Right? There will come a point I guarantee you there will come a point at which extra masks start working against you because what they do is reduced the ability of air to transmit through them. So it will go around. Now my point would be if you take a high quality mask that fits you well and you layer another high quality mask on top of it, you are probably reducing its effectiveness. Therefore, it is not true that two masks are better than one it's true that some combinations are better than a single mask of some type. Right? But without telling us that saying actually double double masking might be a good idea. Right? You are going to create again, this is another case where you are going to create more disease just like telling people they shouldn't exercise outdoors alone, right, you are going to create more disease because they're going to do something else. So you have to tell us what it is that we are trying to optimize so that we can operationalize it, rather than, you know, come up with some overly simplistic idea like to master better than one where we can now start scowling at people who are only wearing one mask, right? That is destined to do harm and the fact that that we we aren't having the conversation, right? Right. It's clear what the pattern is, you've got you had one mask, now we're being told to? Can we fast forward and find out what you're gonna say about three? Right? We ought to know,

**Heather** 1:03:17

everyone wants simple rubrics. And especially because this is confusing. And I would argue some of this is intentionally confusing, this is being made more confusing than it needs to be, for reasons that I will remain agnostic on for now. A friend of ours told me a story this week that she experienced several weeks ago, in which she's in a grocery store. And there's some dude with a, you know, in perfectly fitted mask who was on his phone the whole time talking loudly through his phone, when therefore, you know, talking, we know spreads viral particles much more than being quiet, talking loudly, presumably because he's talking through his mask. And he's picking up all this produce and putting it down. And yes, fomites don't seem to be a big cause, like, you know, most of us are trying to be a lot more careful about not handling a lot of stuff that we're not actually going to buy in stores. So he's picking up all this produce. And he's talking loudly on his phone the whole time. And he's presumably his own little you know, if he was sick, he was spreading this stuff. And so as they happen to check out around the same time, and as she was preparing to go out into the winter, whether she had to adjust something here and briefly took off her mask in order to get herself adjusted. And he walked by and saw her and voiced a nasty snarky comment about how masks are keeping us safe and why doesn't she care? It was the guy who was behaving despicably frankly,

**Bret** 1:04:49

yeah, you're right. It's the it's the simple rubric process, simple

**Heather** 1:04:51

rubric problem. The fact that he was wearing a mask and behaving in every single other way badly with regard to how to reduce the chances that if you work He was going to get other people sick, didn't affect him at all. It's like it didn't enter into His worldview. And he could still feel all high and mighty whenever he saw anyone who was for a moment doing the one thing that we are told we all must do if you care about your friends and neighbors.

**Bret** 1:05:15

So those of us who can think, I think are having a problem with a complete failure to do any net analysis, right? There is a sense that, that which might help is should be policy, right? Well, it might be that somebody is going to catch the virus from you outdoors while you're exercising alone. So let's have you not do that with no understanding that you will therefore do something else where it's more likely to get transmitted. Right. So the point is, this is a at best, well intended policy that is likely to kill, right? I would argue that the to mask thing is to, does that mean that most people's mask choice wouldn't be better doubled? It might well be, but we need to know what we're optimizing. Before we know whether or not we should double our mass. If you're

**Heather** 1:06:01

wearing a mask one of those vents in it, I'd like you to double mask because those masks events on them. They don't protect the rest of us at all, right? Like there are some masks that are crap, and no one should be wearing them. Right,

**Bret** 1:06:11

right. Now, here's another one to add to the list. Okay. At the beginning of this, I was waiting for some sort of guidance about the vaccine and people who had already been sick with COVID. Right? Because there's an obvious question here. Now, let's take the most basic level, okay. People who have had COVID have effectively had a vaccine to this version of COVID. Right? They have been exposed to those proteins. That's what the immune system is. That's why they got better. Right? The point is, the immune system figured out the plan it dead

**Heather** 1:06:40

ones, the ones who died of COVID-19, they have not effectively been vaccinated.

**Bret** 1:06:45

They were partially vaccinated. But let's just say if you recovered, if you actually had it and you actually recovered, the point is your immune system figured it out? Now? Do we know that that will have the same lasting immunity as the vaccine? No, but we also don't know that the vaccine has lasting immunity. And there's every reason to expect it, because what these vaccines so far are doing is they are exposing the immune system to the very spike protein in order that when the virus actually invades your system, your immune system already knows what it's looking at and attacks it. But here's the thing. So I was waiting for them to say, look, if you've had COVID, you at least shouldn't get the vaccine early. There are multiple reasons for this. One is you don't need to take the risk of the vaccine, the vaccine isn't just the spike protein, right? Or the mrnas. That will create it. It's also the lipid nanoparticles it's also whatever medium it's in. It's a lot of things. And so why take the risk if you've effectively had the vaccine? That's one question. And there's another question, which is how do these things interact? Now, it may be that some immunologically, very well educated person will have some answer to this, I don't see coming. But here's the question. Your immune system functions on the basis that your cells will be able to recognize and attach to the proteins for which they are targeted, right, so you get spike protein into your system, your system figures out the electromagnetic sequences that result in antibodies and or T cells being able to stick to this thing. And that's how it works right? Now, if you get a vaccine, right, that generates spike protein, those spike proteins, which are not associated with virus will stick to those cells and antibodies that are targeted at them, there comes a point at which you may saturate those things. And you may in fact, open the door to COVID. Because the point is your immune system was busy dealing with particles that weren't associated with virus, and that let virus get through, you know, in some other way. That is at least plausible, right? So now, there has been guidance in the last week or so that says if you've had COVID, you should get one of the two vaccinations rather than two. Right? So that is at least moving in the direction of there's a question here. But my point is that question was on the table from day one. And even if nothing else is true, if it is the case, that this vaccine is as good as we think it is. And as safe as people say it is, then the point is, the people who've had COVID would be a lower priority, because they are already at least somewhat vaccinated. And therefore if the idea is get the vaccine to as many people as possible, the policy that says get the vaccine no matter whether you've had COVID or not, is going to kill people because it's going to leave some people unprotected.

**Heather** 1:09:32

So that's it's again a problem simple rubrics. And that's exactly the third reason that I was gonna put on the table which you just landed at, which is the third reason not to prioritize getting the vaccine if you've had COVID-19 is that if we are being told the truth, and I believe we are in this regard, that we don't have enough supply, and that we're trying to distributed as the vaccines as effectively and efficiently as possible to the people who need it most. And the people who almost certainly have onboarding dominantly endogenously generated immunity already should not be first in line for the vaccine. Yep, there's if there's a supply problem, the people who are particularly high risk from the vaccine, like people with autoimmune diseases, or I think pregnant women and children probably shouldn't be first in line, and people who are likely already to have immunity that they themselves generated should not be first.

**Bret** 1:10:22

Yep. And I would say we can add another reason for, for skepticism here, at least for the already exposed or already infected with COVID. Once crowd, which is the way these vaccines work, the mRNA is going to get into cells, it's going to cause the production of spike proteins which are going to be displayed by those cells, I believe the fate of those cells will then be that they will be targeted by T cells and killed or they will have a pop ptosis programs activated. In other words, the body will deal with them like they're infected with the virus. Right. So the point is, you're killing tissue, that's not going to be good for you either. So you know, there are, let's put it this way, a logical analysis suggests that there are all sorts of reasons that we should be doing a much more nuanced job rather than just wagging our finger at everybody and saying everybody should get the vaccine because vaccine good, right?

**Heather** 1:11:21

All right. Well, we're already well over an hour, but we've got a little cluster of topics that I really want to spend a little time just getting started. Okay, just getting started. I said to you today, I think we're going to need four hours to start doing our live streams, we're not going to do that. But there's just so much all the time. And, you know, I only got back through February 10, in terms of my list of topics that I was trying to get to this week. Okay, so the next three topics, which are broadly speaking, how the moon affect our sleep, and other cycles, and how exogenous mood disruptors are affecting the personality of fish. And what Carnival is about, are all linked in my mind, actually, I was I was playing with all of them. And I think how you know what they are they there is actually a theme running through these, which is exactly the theme of our book, a hunter gatherers guide to the 21st century, which is like how the ancient forces that we evolved in and with, we might had auto pay attention to, and pretend that they are no longer relevant to us at our peril. And also pay attention to the new forces and technologies and such that we are being handed with a bit more skepticism like, this is just this, this is a fairly simple rubric, actually. And you say I who have been railing against simple rubrics, that the older it is and that we have been evolving with it, the more likely it is not to cause new kinds of harm. It's not to say we couldn't do better. And that's not to say that that progress can't be made. But be the most cautious of the newest stuff with which we have the least history. So that's that's the that's the kind of lesson there. So I've told you about a little bit of what's what we're what we're going to talk about here. A couple of articles came out this week, I think, or at least they were reported on this week. So let us I'm gonna just have us act to show very briefly. Here's one of them. This is castle ragi at all 2021 Moonstruck sleep, synchronization of human sleep with the moon cycle under field conditions. So may I have my screen back? Thank you. I'll just read a little bit from the results consistent with previous studies, shorter sleep duration and delayed onset onset of sleep are associated with increased access to electric light. Moreover, both the duration and the time of sleep onset showed a clear modulation throughout the moon cycle that was evident in the whole population, as well as in the individual communities. Now this this paper was was interesting. And so anyway, which communities to this day. So they were I was just going to go back and look they looked at indigenous. I'm going to mispronounce this i'm sure Toba slash comb, q o. m. Communities in Argentina, where they've got so these these these peoples live all in all range of conditions from sort of their original hunter gatherer like conditions to fully urban. And so they went and looked at if memory serves, and I did not have enough time to look at either the sleep papers I want to talk about today a little bit. They looked at moon stage and sleep in the most likely original indigenous hunter gatherer without light pollution, right? fully urbanized, industrialized, and then a sort of an intermediate stage that has some light pollution as well. And so they've effectively controlled for a lot of stuff around culture, right? Because it's all the same, it's all the same lineage, and they still even the industrialized people I think are still honoring some of their established cultural norms but what they found was that exactly exactly as you would expect if you if you've ever been backpacking or if you've ever thought about the fact that we are Evolved Human beings on this planet that we are queuing into the moon and that when we have electric lights that replace that effectively replace the cues that we get from the moon, especially at night. We are less we are sleeping less we're sleeping less well that absent electric lights This is this was something interesting I don't remember this is from this article or something that they referenced in this article. That very rarely without electric lights do people People often go to bed after dark and they may use fire they may use moonlight they tend to go to bed later the morpho The moon is with a couple of interesting exceptions like apparently I think it was the hodza who actually have explicit nighttime festivities on New Moon nights interestingly. So you know there going to be exceptions but

**Heather** 1:16:03

very rarely if ever, do people absent electric lights rise before the sun rises? That going to bed after dark is common but rising before the sunrise is is not and oh boy lightened that have something to do with how much more sleep deprived people feel in the winter months and especially for teenagers having to get up early when it's still pitch dark out, Rouse themselves from sleep when we know that this is a time of life when people need more sleep and and that rousing them when it's still dark out and sending a signal that really until electric lights no human beings were ever being sent might be disruptive not just asleep that day, but to sleep more broadly and probably to the developing brain as well.

**Bret** 1:16:51

Okay, so I still miss something though. Okay, so there's some sort of synchrony with moonphase which I would expect but what how does it manifest what is it when people go to bed? Is it how often they wake up when they're sleeping? What what kind of thing

**Heather** 1:17:04

so there's less they sleep less when Oh, so Okay, so there's there's two comparisons that we're doing here and I was mostly talking about the the other one so the sort of hunter gatherer to industrialize the more industrialized You are the less in sync with the moon phase you are and the more disrupted your sleep is with regard to how does your sleep if you are living without electric lights, how does your sleep change across the moon cycle people are tend to go to bed later under full moon conditions and under a full moon sleeping less per night, but that is a predictable fairly even curve over time.

**Bret** 1:17:43

I've always wondered about this as I have been kept up by the moon and it seems like we are very, we are well designed not to be kept up by firelight. Something we you and I have talked about a lot but and you know, for good reason, you would want it not to basically be informing your pineal gland that what time of day it is because it's, it doesn't contain that information, right. But the fact that the moon which is reflecting obviously sunlight, somehow does keep you up if you're sleeping in a circumstance where you can't block out moonlight, it's plenty to keep you up. Also, interestingly, many years ago, when I was doing bat research in Panama, I was I can't remember exactly what I was doing. But I spent a night at the top of one of these canopy towers I think I was waiting for there were some fruits maturing there and I was hoping to see fruit bats which didn't work out but nonetheless Oh, we should come back to why I might not have seen the fruit bats it has to do with something called lunar phobia that exists in bats. But in any case, I discovered that I could read under moonlight it was just barely the right amount of light to read. Which is interesting, you know, any less you know, just slightly less than full moon wouldn't be enough. So I don't know if that's haphazard or not, but it's an interesting connection.

**Heather** 1:19:14

That is an interesting connection. And so just another another paper that came out recently that I had I was able to spend even less time with so I'm just really going to read a couple of sections from it is this Forster at all. And again, you can show by my screen here, Zack. We show that women's that just the second half of the abstract. We show that women's menstrual cycles with a period longer than 27 days were intimate, intermittently synchronous with the moon's luminance and our gravimetric cycles. With age and upon exposure to artificial nocturnal light, menstrual cycles shortened and lost the synchrony. we hypothesized that in ancient times, human reproductive behavior was synchronous with the moon but that our modern lifestyles have changed reproductive physiology and behavior. Just going to read the very beginning of the introduction to, and many marine species and some terrestrial species reproductive behavior is synchronized with a particular phase of the lunar cycle generally the full or the new moon. This arrangement increases reproductive success by synchronizing the reproductive behavior of the individual members of a species, in light of this fact is of interest that the human menstrual cycle has a period close to that of the lunar cycle. And that several older studies reported relation between the cycles, women who cycles approach, the 29 and a half day period of the moon have been reported to have the highest likelihood to become pregnant. So that is, you know, that's the very beginning of the article, but I'd never heard that before. That the closer the length of your cycle is to that of the moon, the more fecund you appear to be super interesting, but really, you know, not surprising at all, that our sleep cycles for all human beings and that for reproductively women of reproductive age, menstrual cycles are attuned to the moon in some way is should not be surprising. And to that end, I got to these two articles by reading a this week in science short article, which you hear, Zack? The final didn't like it. I didn't like it when I made it bigger. Okay, well, Okay, nevermind. The final sentence is both studies stopped short of establishing causality, but suggest that even in highly industrialized societies, celestial bodies affect our bodies on Earth.

**Bret** 1:21:37

Yeah, I think, yeah, it's pretty, it's pretty interesting. I do think the female menstrual cycle and the lunar phases are tightly connected, but it does not require an actual effect of the moon itself. In other words, there is a mechanism for the moon itself to to influence women this way, because they, you know, under ancestral circumstances would have, you know, been monitoring effectively the, the moon phase, but I don't think it's accidental, that, that close analogy,

**Heather** 1:22:08

anyway, maybe so. So, yeah, we should definitely come back to this. But you are saying that this the sleep work is of a different nature than the menstrual cycle work, and that the menstrual cycle work may be in fact about a way that the human body has figured out to basically keep time. Yeah,

**Bret** 1:22:30

keep time and awareness. Yeah, that's keep

**Heather** 1:22:33

time keep a schedule, keep an internal schedule, so that a woman effectively in you know, in a species with very few external indicators of, of when we are at our most fecund, that if you can keep track of the moon, and count to 29, then you can do a decent job of, of knowing when you're fertile.

**Bret** 1:22:53

Yes. And also knowing when you are pregnant, which may be the most important aspect of this, which is that, in effect, by if a woman's period has accompanied a particular phase of the moon, upon reaching that phase of the moon, if he is not near her next period, then she is at least aware that there's something she has to pay attention to, which then might have very deep implications for her behavior, because raising a child alone is vastly dicier than raising a child with a committed partner.

**Heather** 1:23:26

Yes. So good. Okay. Yes. Let us let us do come back to that. Yep. Okay, so this article also came out this week. Zachary. Prozac turns guppies into zombies is the headline. So this from science news, and Zach, I'm sorry, I need I need this back just for a minute to pull up the original research. And here we go. psychoactive pollution suppresses individual differences in fish behavior, says crew porrino at all. And okay, Sarkozy I need thank you all what do I want to read here? Okay, the first paragraph the introduction in the last two decades, the variety and concentration of pharmaceuticals in the environment has grown substantially. Most pharmaceuticals including psychoactive drugs, such as anti psychotics, and Anzio, Linux does anti anxiety meds and added to presence are only partially absorbed after ingestion, and once excluded are not fully removed by wastewater treatment. Such pollutants make their way into the environment via wastewater, remaining biologically active in aquatic ecosystems. As a result, pollution by psychoactive drugs is now ubiquitous in aquatic ecosystems around the world and drink food webs and accumulating and living organisms. And, again, see Sorry, I wish I had a printout that I could read, but I don't even know where it went. Okay, yes, I was gonna read the whole abstract I guess. Oh my god. environmental contamination by pharmaceuticals is global, substantially altering crucial behaviors and animals impacting on their reproduction and survival. It key questions whether the consequences of these pollutants extend beyond mean behavioral changes, restraining differences in behavior between individuals, I don't think I need to read all of this. To understand the proximate mechanism of underlying these changes, we tested the relative contribution of variation within and between individuals to the overall decline in individual variation. We found strong evidence that fluoxetine, which is the name of Prozac erodes variation in activity between but not within individuals, revealing the hidden consequences of a ubiquitous contaminant on phenotypic variation and fish, which is likely to impair adaptive potential to environmental change. In English, that is, in English, what that means is that basically fish are much less likely to show a wide variation from the mean of what their personalities at the population level are, if they've been exposed to even low levels of Prozac in the water. And apparently, most water supplies in most of the world are at this point, a wash and low levels of Prozac, which is something that I actually didn't did not know that high levels of Prozac in the water are going to be the case at basically near near sewer outlets. But these low levels, actually render these they looked at guppies, you know, they they collected these guppies from one of the few places I think it was Australia where there's really no Prozac pollution in the water. And they put them in a lab for I think it was six years and expose them to lab conditions in which there was no flow oxetane low levels of fluoxetine, or high levels of fluoxetine, and at both high and low, they found that these fish were just much more likely to be average, then, you know, behave like average fish than they did when they were not exposed to Prozac at all. And, you know, I remember when Prozac was becoming a thing, right? And this was, you know, this was sort of the description it'd be like, you know, you expect your moods to be like this. And some people's moods are way high and way low, we need to flatten it out. And it's just this flattening, you know, this is, this is the really nasty flattening the curve unlike what we're trying to do with COVID, right. And, you know, maybe you don't want to flatten people's mood so much that they cannot actually experience and respond to the insults and joys that life throws at them. And also, maybe the fact that this appears to affect fish in the same way, suggests that we ought not be doing this to, you know, all of the vertebrates on the planet, including humans.

**Bret** 1:27:57

Yeah, I mean, obviously, the all moods good and bad, are adaptations. Yes, could be dysregulated in some way that you're prone to certain moods and away from others. But the chances that that is a widespread problem, rather than you live in a nonsense environment that's creating anxiety because it's almost impossible to navigate well, and therefore, we're going to medicate you out of recognizing that you're actually imperiled everyday by, you know, a cruddy world. Right? That's, that's a non solution. And, you know, okay, so we're externalizing, the same garbage onto fish. That will, of course, mean all kinds of things. One, if you're taking these, you know, the equivalent of fish moods, and flattening them, those fish will not do as well as they would, which means they will end up preyed upon more frequently, failing to be properly motivated to forage and probably starve more frequently than they would otherwise speed up the extinction crisis, right, you're gonna you're going to contribute in some way to to the extinction crisis. It is also the case that you're now creating a weird puzzle for creatures more generally, where some creatures are going to be intensely in the outflow of this stuff, and they will certainly evolve to being less sensitive to it, right, the less sensitive they are, which means that they will then experience fish anxiety at the point that they, you know, swim somewhere that it's less concentrated. So how does that work? Have

**Heather** 1:29:28

an epidemic of angry guppies?

**Bret** 1:29:30

Right? Which they could be very, I don't know, nibbly or something, but But yeah, you know, so the lesson is always the same, which is in nature knows what it's doing. And if you disrupt it, you are very unlikely to make things better and very likely to make things worse. And you know, it's this should not be any shock to us at all, but it should give us pause. I mean, for one thing, we're also downstream from all this stuff, even those of us who don't take these things. are undoubtedly getting a certain amount of it that we shouldn't be. And, you know, there's no way to opt out.

**Heather** 1:30:08

Yeah, there's no way to opt out and this observation that there's observation that it doesn't get treated by wastewater treatment. Like, what how is it that a drug as widely used as Prozac was allowed to go to market when there was no way to disable it?

**Bret** 1:30:27

Well, I mean, this is this is the story everywhere is that, you know, it's hard to put your finger on exactly what the problem is going to be until they the entities that created this stuff are so powerful that you can't tell them no,

**Heather** 1:30:39

but this is one of our This is one of the nights of our Hanukkah tradition, right? So So longtime viewers and listeners will know we've talked about before, and it's in fact, the, like, epilogue of our book, the eight for the eight nights of Hanukkah, we talk about one thing that we think modern humans should be living by, and the one that I'm referring to here, I'm not going to have the language quite right. But basically, anything new that you put into the world, you need to be able to undo before you put it into the

**Bret** 1:31:08

world, all human activity should be both sustainable and reversible and reversible, is there because of this? This process whereby anything that's economically profitable, becomes irreversible, and that, you know, so many, you know, everybody seems to know that social media is driving us insane, right? And yet, it's not even conceivable that we could do anything like cut it out, right? You know, that's not on the table of solutions, we're gonna have to find enough band aids to deal with the insanity of the entire human population, rather than realize we made a mistake and undo it. So

**Heather** 1:31:47

yeah, yeah. So, you know, in, in the general scheme of things, How high does a narrowing of the spectrum of personality types and guppies rank as things you're concerned about? I expect no one at the end of today will be able to say, yeah, that's, that's in my top 10. But as a as a horseman as an indicator of what it is that we're doing, you know, in terms of effects that apparently no one was thinking of, not only are we flattening whole swathes of the human population, with regard to diversity, personality types, this thing that we're letting them take, all of us are then getting some of it, and all vertebrates who are in water, or who drink water are getting some of it. And we're all affected, because these are ancient, ancient ancient receptors. And it's affecting everyone and it's it is going to this is going to be one tiny little parameter that is going to affect things like the extinction crisis, because you get a you know, you, you effectively have a less diverse behavioral repertoire in any population, and it's going to be able to deal with change less well. Yeah, that's it. Well,

**Bret** 1:32:53

well, and you know, the irony of ironies, which I'm sure you're gonna end up speaking about, at some point at length on the podcast is that the entire hypothesis on which this pharmaceutical solution was predicated, that was wrong to begin with, and wasn't plausible to begin with? Right, the idea that, you know, some large fraction of the population is suffering from chemical imbalances that need us to come in there and, you know, retune their reabsorption rate of these things. doesn't make any sense. It doesn't make any sense any more than you know, there's suddenly a genetic crisis that is causing children's jaws to be malformed relative to their teeth or a terrible

**Heather** 1:33:32

species that happens to rule the oh my goodness so

**Bret** 1:33:35

much mutation that is just crept in and we just need medicine to save us from each and every feature of our beings that is coming apart genetically it's nonsense

**Heather** 1:33:46

Yeah. So now these drugs so we will at some point spend a long time on this but yeah, yeah, you have it in a nutshell. Treating chemical imbalance very very, very rarely creating chemical imbalance pretty much always that's what they're doing. Yep, that's what these these neuroleptics and anti psychotics and anti anxiety anti depression meds are doing creating chemical imbalance not resolving it yes and in fish great terrific. All right. Carnival Yes. Wonderful, wonderful topic so having you know, I'm sure there's direct fish and sleep and Moon angle but but really the theme again is you know, what, are those things we've been doing for a long time and what value do they have and is it dangerous or you know, in some cases like with Carnival feels just sad that we're not doing it right now. But it might actually have you know, also long term effects so Carnival should have started last night. carnival. And it's a it's basically canceled at least subdued this year. So historically, kind of all aware everywhere, everywhere. So Carnival Carnival is always the same timing because it is in the American form is Mardi Gras even though that's Receive a French term. It is mark the days before lunch. It begins the Friday before Latin and goes through Wednesday, Ash Wednesday. And Ash Wednesday is then always 46 days before Easter Sunday. So exactly when Easter Sunday is varies, and I don't know the logic of what besides that, but Ash Wednesday is always 46 days before Easter Sunday. And Carnival or Mardi Gras always begins the Friday before Ash Wednesday. So Lent, if we're going to talk about Carnival, I think we should talk about lent a little bit first, lent in many Christian traditions is a period of spiritual reflection. And penance is often paid. And repentance of sins is encouraged. And self denial is a primary aspect. It's the one with which most of us who have not, you know, honored it for whatever reason will be familiar, in which someone will give up something that they find it difficult to give up like you know, you can't give up chores for Lent. That's not that's cheating, you have to write. So you know, if you if you really enjoy wine, you can give up one. But if wine really isn't your thing, if you try to give up wine, also cheating. So self denial is this primary manifestation and also actually fasting is as well. And specifically various forms of intermittent fasting what we would call in modern times intermittent fasting you know yet another way in which the modern world is like rediscovered in ancient truth, something you know, intermittent fasting, and longer forms of fasting are known from almost all the major religious traditions. And then we you know, we let Kellogg tell us who how to eat for most of the 20th century, we got big and fat and sloppy. And now people are rediscovering that Oh, actually, if you take some time off food on the regular, you actually might be healthier. Hey, guess what, almost all religious traditions had a way of doing this. And no, they didn't have the, you know, dietary mechanisms by which it works. And we still don't mostly either, but that doesn't mean it doesn't work. So anyway, that's that's sort of what lent has been 46 days of, of penance, of spiritual reflection, of self denial. And in order to sort of get people on board with that, I think and I actually don't know as much about exactly the history of how it started, kind of all began, specifically in Latin America. As the five days before lent begins in its release, a breaking out before the inward careful reflection begins. So I had when I was in college, and I was an anthropology major, I had this class and Brazilian culture and society. And

**Heather** 1:37:38

I actually I have now I've now been to three different carnivals and you and I've been to one and remnant we're going to show some pictures from the one that we were at together, but the three carnivals that I was, depending on how you assess lucky or unlucky enough to do attend, we're all the study abroad programs. And the first one was in Chitra, in Panama in 2009, from my very first study abroad program, the second one was just a de and coca and Ecuador and 2014. And then we were together in Cuenca, in Ecuador, and 2016, for Carnival, and each of those cases it wasn't that I was trying to get my students to Carnival it's actually that in in Latin America, so much of the rest of the world closes down during Carnival that it's very hard to get to, you know, if you're if you're not already at a field station, it's very hard to move around and get stuff done. And so I sort of leaned into it went well, okay, we're doing this animal behavior work. And we're focusing a lot on human behavior and, and prehistory, early history of humans in the Americas and you know, behavior of contemporary animals and including people. So let's go do some kind of cultural anthropology. Do you know be ethnography is be participant observers at Carnival, and yes, you know, that means participate, but also keep your observer hat on. And so in preparation for that, for my first time at Carnival, I went back I reconnected with my professor from that resilient culture and society class at UC Santa Cruz, man by the name of Dan linger, reached out to him about about Carnival and how he understood it. He specifically has done a tremendous amount of work in by here in the Atlantic, tropical state of Bahia and Brazil. And he said that the three most salient aspects of Carnival are these symbolic reversals of power, rituals of rebellion, and which includes critiques of the status quo and inviting the liminal so like working at the edges of consciousness and you know, trying trying to be in that sort of shimmery place between categories, where you feel like you might fall off the edge or you might not you might discover something if you fall on you come back. And all of those I think so symbolic reversals of power rituals for rebellion and inviting The liminal can be manifest in a lot of what we see in in some of the more formal aspects of Carnival men dressed as under acting as women, employee as employer. And in the, in the older days, slaves as slave owners like actual reversals of power for just this very short period when it was acceptable, young is old, these things are allowed during carnavon, we saw some manifestations of this, these things are allowed within limits, of course, right. So in just just to give you guys a little bit more sense of it before I show it, or maybe we want to talk a little bit first about our experience, but first, I want to read so as part of my original class that I had in the early 90s. We read we watched the movie black Orpheus, which is extraordinary, which really, you know, shows Brazilian Carnival, I think it's from the 50s maybe, and we also read what has become one of my favorite books. So Jorge moto book, Jorge Amado, called Donna floor, her two husbands, and somehow I cannot find my copy of it, but I did find a I had it. I did find a description of it. Here we go. Not a description of it just a very small brief excerpt from the very beginning. So this is from

**Heather** 1:41:27

Donna Flora her two husbands a moral and Mrs. tail. But enho Dona Flores first husband died one Sunday of carnival. In the morning when dressed up like a human woman. He was dancing the samba with the greatest enthusiasm and the dois digital whole square, not far from his house. He did not belong to the group he had just joined it in the company of four of his friends, all masquerading here on us by E on us, and they had come from a bar and tobacco with a whiskey flowed like water at the expense of one Moises Elvis aka Cal planter rich and open handed. The group was accompanied by a small, well rehearsed orchestra of guitars and flutes. The fourth string guitar was played by Carlene Hawes. masquerade is a tall skinny character famous whorehouses divine player. The men were brought up as gypsies and the girls was Hungarian Romanian peasants never however, had Hungarian Romanian or even a Bulgarian or Slovak swung her hips the way they did those brown girls in the flower of their youth and coquetry. Whenever dinheiro, the liveliest of the lot saw the group come around the corner and heard the skeleton like musk avena strumming his sublime four string guitar, he hurried forward and chose us as partner heavily rouge Romanian a big one as monumental as the church. The church of St. Francis for she was a massive golden sequence and announced here I come my Russian from Todaro the Gypsy Mascarenhas, who was also bedecked with glass beads and spangles had gaudy earrings hanging from his ears pulsed his four string guitar still more sonorously, the flutes and Spanish guitars ground and Latino took his place in the samba with exemplary enthusiasm he brought to everything he did except work. The world in the middle of the group stomped in front of them a lotta approached her in flourishes and belly bumps, then suddenly gave a kind of horse moan wobbled listen to one side and fell to the ground, a yellow slobber, drooling from his mouth in which the grimace of death could not wholly extinguish the fatuous smile of the complete Faker he had always been. So that is very beginning of a book again that I highly recommend Donna floor her two husbands, the second husband being the man she will marry later. This is this is I won't say more about it. It's it's just just a wonderful book. So before we show some pictures, and maybe you know, talk over the the, you don't know which photos I've chosen, but you know what photos you've taken. I will say that the first two carnivals that I went to, I was pretty disappointed. And I have you know, I actually found an essay I wrote, I found some of the stuff that I had asked my students to write about. And some of them were just brilliant in sort of excavating what it was that they expected, and teasing that apart from what we actually saw. And you know, the modern instantiations of Carnival, especially in Chithra, and Panama and coca and Ecuador were really just firehose fueled, foam fueled beer fueled, giant, mad parties that didn't have much to do with this sort of symbolic reversals of power and rituals of rebellion and inviting the liminal in which a lot can be learned. So it was a little bit disappointing. But then when we were back there doing the study abroad that we did together in 20 1611 weeks, we had our children with us, we had 30 students. It was quite a different scene, and there was a different place. It was quite good. Do you want to say anything?

**Bret** 1:44:44

Yeah, well, Cuenca is a colonial city, and it's very beautiful and confluence of five rivers

**Heather** 1:44:53

four or five.

**Bret** 1:44:54

In any case, it's a very interesting place and somehow the carnival there has large Though not completely escaped the modernization that I think has ruined it in so many places but anyway I mean maybe the pictures would be useful a good place

**Heather** 1:45:09

to go okay hold on I find them so come on not yet thank you okay so kind of the first night of Carnival was the night of the grandfather's yes and and I just have one picture from that and indeed all the rest of the pictures I have are actually just from a parade the next day so it's it's a it's a sort of a narrow view we we wander the streets and experience a lot of Carnival of course one of the things about Carnival is with the reversals of power having a very nice camera on the streets in most places is not the thing you want to do so well in this case it's just an iPhone photo right but that's my point is that most of most of the wandering around that we did we did not take pictures during because we would have been inviting left

**Bret** 1:45:58

Yep. In any case, this is a photo of a police band and so you'll see a certain amount of foam flying around so people during the the night of the grandfathers and during the parade, spray each other with this canned foam and you know it is sort of interesting here I think you can see in this photo that the police band is playing and people are spraying foam at the cops and everybody's taking it in stride in a way that I think is actually very hard to reconcile yourself to given the tension with the police in much of the West at the moment and you know how healthy is this to have this outlet where you know the police and the other people of the town are interacting in this way in which the rules are temporarily suspended the police

**Heather** 1:46:50

are grinning they're smiling they're like they're actually they actually really do seem to be okay with this and it felt it feels like to me that I remember that there was even kind of a racial component that on average the police are a wider populace than then the larger population of Quaker anywhere at least the people who were were approaching so there was you know there were reversals of power in a number of ways you know people spraying the police with foam people who were often poorer and darker skinned spraying the police and the police just plan on you know doing they're doing they're mostly brass It was a brass band as I remember Yeah,

**Bret** 1:47:26

yeah, yeah and then you know, I was pleased to be able to get this shot this little girl is looking on and no doubt this is part of how she is coming to understand her world and the police in it and you know, that's her experience watching the police sprayed with foam playing exuberant music is going to affect the way he interacts with police when things go back to normal after the end of carnival. Yes. So anyway, you know, we don't have these healthy outlets we sort of somehow bypass them and how much harm is there to the fact that we do

**Heather** 1:48:03

and what is it what what kind of harm is being caused this year? Apparently Carnival is really not happening at an annual outlet that people look forward to. And the prepares them to go into Lent is extremely important, actually. And it you know, it can feel just like festivities and boozing, if you've never been in it but to talk to the people on the ground. Many people actually look forward to it rely on it needed in a way that they may never be able to explain but that doesn't mean it's not needed. So here we have a man with a with some kind of facial stuff on I don't think that's old foam. I think he came through decked out and this I'm just like describing it for people who are listening. Not sure he's wearing a monkey skull around his neck. And he's holding to live roosters and he's got ribbon around his neck as well.

**Bret** 1:48:56

Yeah, I think he was actually an official of the carnival parade I didn't quite catch what his title was but I think

**Heather** 1:49:03

I have 13 pictures here All right. Here we have a man on

**Bret** 1:49:08

stilts guy is late to his appointment in the parade and he's making up for lost time. Yeah, these traditional dancers male dancers in front of the big church there

**Heather** 1:49:25

and there's there's foam in the air like you can see that that's there's actually foam in the air. Yeah, I can buy these cans of foam everywhere. And it really is a big part of what what happens is foam at the corner

**Bret** 1:49:39

well it's an outlet of its own. Yeah, people on their fancy motorcycles again in front of the church. You can actually see there's a drone in that shot. Somebody has a drone in there. Oh, there we go. Yeah.

**Heather** 1:49:53

So we wondered This was in 2016. We wondered if this was perhaps the first Carnival where or Drones existed people weren't pleased with it. It came down low and some someone started throwing rocks at it and it crashed into a building okay yeah I thought someone had been throwing rocks and then it also crashed but so here you have confetti and the drone and the church hit this is not a policeman but

**Bret** 1:50:19

yeah guy in the brass band has been thoroughly covered in foam and is continuing to play on

**Heather** 1:50:29

different different kinds of musicians and a family again in front of the same church and I included this one in part because you also have you know when you when you talk to people, locals what they look forward to most often they'll say the food about about the carnival and Kwanzaa and the stand to the right here. They had roasted a whole pig and they were making tortillas and they had a whole bunch of salsas and oh my god was pretty good was so good. Here we have just a family you know, I think that the man in the middle maybe all of them are going to be participating in the parade. But all all bedecked the little girl has a can of foam ready to spray it anyone who she thinks deserves it? Yep.

**Bret** 1:51:19

These are indigenous Highlanders?

**Heather** 1:51:21

Yep, so quite good is in the end is I think this is the penultimate picture this is just a mother with her son and her back wearing what seems to be the traditional Fedora Yeah, that especially on a millennials wear the fedora, we're not gonna wallow here it's a long ways away but and then finally just an older Lankan couple, not bedecked not going to be participating. But you know, eating platanos or something for a bag and watching watching the festivities fire

**Bret** 1:51:53

call correctly, they they arrived at the parade holding hands, which I thought was very nice, given their advanced age.

**Heather** 1:52:00

Yeah. So Carnival is extraordinary. And it's pretty old. And people hold it in high esteem. And in quite a lot of people will stay for the night the grandfathers and then go to outlying villages, because they find that what happens in Cuenca is too much, it's actually can be dangerous to be out on the streets at night. But in the outlying villages, it's even more traditional. We didn't do that. So we didn't see that. But we had some students who, who went there with their host families. And, and reported something like that. And I do, you know, one of the very, very, very many downstream effects of this pandemic is the disruption to regular and long awaited events. And that you know, the day to day is beginning, it has for many months, but it's beginning to get really bad for a lot of people. And for those of us in America, most of us don't have something like this like five days every year that you can rely on when it's going to be where you are allowed to play around with borders and categories and liminal space and just let it all out. And it's more honorable if you do that with the expectation that you were then going to go into a period of some privation in advance of you know, whether or not you believe in a Christian God or not, but in advance of then, you know, having it go back to normal, you know, your life as of Eastern Easter Sunday. I have often felt since since I started attending, you'll go into these carnivals that we could use something like that. And I've never been to Mardi Gras. But it has never looked to me, you know, it looks like a Disneyfication of Carnival from a distance anyway. But we could use something like this. And right now, none of the world is getting it. And it's it's going to cause further harm. Mental Health harm. Yeah, in a world that is already plenty sad.

**Bret** 1:53:55

So I think there there are two components here that I would like to see separated. One is the failure of the west to have a deep toolkit of such traditions which are likely necessary in order to avoid certain things that I think we are suffering from very precipitously at the moment. And then the other is the disruption of these traditions for people who have them, presumably the, you know, weekly dance that would occur in every one of these towns isn't happening either. And so you know, we don't have that tradition. And I suspect that the

**Heather** 1:54:32

we've lived in places in Latin America where they did, and we have attended them occasionally. Yeah. And it's you can just see how necessary it is how important it is for people.

**Bret** 1:54:41

Well, it's in particular, deeply involved in, you know, courting them. And so the idea is there some sort of, you know, ritualized something in which there are more or less rules and it's taking place in public and it is a strong CounterPoint. To the derangement of the West over those sorts of issues, and you know carnivals an annual thing. But likely the ability to shift civilization gracefully depends on having experimented with these things rather than just like suddenly instituting rules over how we are to interact and what you can say and what you can't say and what it means and all of that stuff. And so we, the absence of these things may end up being a much larger piece of the story of what happened to the west then than we yet understand. Like,

**Heather** 1:55:36

I think that's exactly right. Well, we have as predicted, gone on quite a while. I think it is come time to make our announcements and sign off. All right, let's

**Bret** 1:55:46

do that.

**Heather** 1:55:46

Let's do that. So for those of you watching, we're going to take a 15 minute break and we'll be back with a live q&a answering your super chat questions. You can become a dark horse member at my Patreon and get access to that once a month to our private q&a, which we just posted a clip from evolving Brett's first hatched crocodile on both this main YouTube channel and the Dark Horse podcast clips channel you have regular conversations before your higher tier patrons at at your Patreon nothing

**Bret** 1:56:24

regular about them except the periodicity

**Heather** 1:56:29

you have no respect for time

**Bret** 1:56:32

I have a grudging respect for time

**Heather** 1:56:35

Yeah, you feel like you're under its thumb and you just you're fighting it all the way Yeah. So you can get you can get dark horse stuff, including some with with sayings like first against the wall club and such store Dark Horse podcast.org email our moderator darker stop moderator@gmail.com for logistical questions. And oh yeah, and you're going to be on the discord that you can get access to either a Patreon tomorrow at 10am Pacific for a breakfast with Bret

**Bret** 1:57:10

bring your own hot sauce. And we have now gotten to the point where I think Dr. Roller Gator is going to choose a worthy person and somehow you need to get your contact info to him so he can get it to me and I can get you an invite to clubhouse and maybe see online Yeah. All right.

**Heather** 1:57:34

So as always be good to each other. Eat well get outside

**Bret** 1:57:40

and no more than six masks. All right. All right. Well, everyone, we will see you