Bret and Heather 92nd DarkHorse Podcast Livestream\_ The Blan...

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children, childhood, play, point, adults, language, learn, humans, risk, book, walk, called, blank slate, mushroom, born, put, part, plasticity, dark horse, capable

**SPEAKERS**

Bret, Heather

**Bret** 00:40

Hey folks, welcome to the Dark Horse podcast live stream it is live stream number 92 with me Dr. Brett Weinstein, this is Dr. Heather Hyang sitting to my right which I don't know enough about video to know whether she's on your right but in any case she is here I am Here we are here in bark, we have some announcements

**Heather** 00:59

of announcements, we have three ads today which we do at the top of the hour and then we will jump right in. So we are going to be talking a little bit about the current cultural moment just briefly at the top of the hour. And then we're going to spend most of the most the time today talking about childhood. Following from chapter eight, chapter nine of our forthcoming book hunter gatherers guide to the 21st century which is all about childhood. So we're gonna be talking about childhood and us and others the value of play, unstructured and otherwise the value of risk all of these things. But first, if you're watching this on YouTube, consider trying it on Odyssey we know that there are buffering problems they're working on it. The chat is live on Odyssey but not on YouTube. The moderators were having a difficult time moderating two different chats at once. So if you're here live right now, can go to Odyssey for the chat. You can ask questions at Dark Horse submissions.com. consider joining our Patreon we will stay a little bit more about that at the end of the hour. You can go to Dark Horse podcast no you can go to store that dark horse podcast.org to buy Dark Horse shirts and Goliath shirts and such. consider joining me at my new endeavor on substack natural selections.substack.com this week's read was on polyandry. And, as I said we're going to do three ads today drink, walk lounge, rinse, repeat, we've got three and we really you know we don't we don't accept sponsors that have products that we don't actually stand by we reject more than we accept from the amazing guy who brings us these opportunities. And these three today two of which are new to us. We really stand behind so without further ado, let's embark on the ads. Alright, the first one is for for stigmatic. A wellness company known for its delicious mushroom coffee, mushroom coffee you say well that sounds odd maybe not what you want. I was skeptical but I've been drinking it lately when I want coffee with something extra and it's very very good. For SIG Matic mushroom coffee contains yes coffee organic Fairtrade single origin Arabica coffee but it also has Lion's Mane mushroom for productivity and I mentioned Lion's Mane mushroom last week as something that is gaining. Gaining followers in the West having long been something that is used as part of health and wellness routine in many parts of the East and also Chaga mushroom for immune support. So I've begun to drink for SIG Matic ground mushroom coffee with Lion's Mane instead of regular coffee sometimes and it does seem to add a little something a little extra Christmas and focus the world seems just a little more clear after I drink it. It's delicious just like regular coffee. You can't taste the mushrooms if that's what you're worried about as I was but no This tastes just like your favorite coffee dark and nutty and and delicious. So all four sigmatic products are organic, vegan and gluten free. Every single batch is third party lab tested to ensure its purity and safety so you know you're getting the highest quality coffee and mushroom as possible. It's got over 20,005 star reviews Baxter products with 100% money back guarantee so you love it or you get your money back. So we have worked out an exclusive offer with four sigmatic on their best selling mushroom coffee. This is just for Darkhorse listeners to get up to 40% off and free shipping on mushroom coffee bundles. To claim this deal you must go to four SIG Matic comm slash Dark Horse. This offer is only for Dark Horse listeners not available on the regular website. You'll save up to 40% get free shipping so go right now to fo you are si g ma t IC comm slash Dark Horse and fuel your productivity and creativity with some delicious mushroom coffee. That's our first sponsor for today. Our second is vivo barefoot. vivo barefoot is on a mission to create regenerative footwear and experiences that bring you closer to nature. When your natural potential you go barefoot makes shoes for feet and we have a script here but let's just go off script here a little bit. These shoes are fabulous they look there they do notice that they look a little weird but we they they were interested in being a sponsor of Darkhorse there they are fans and we are now extraordinary fans of them we've been wearing their shoes almost exclusively you know we have we have dedicated bike shoes with cleats in them and such for you know for other moments but I can go forever in these shoes

**Bret** 05:29

yeah it's amazing how much the other shoes that we have before we had these shoes are just kind of sitting around they're lonely they are a little lonely Yeah, so the thing is they do look a little weird The first time you see him take him out of the box and they don't they look for shapes. They look for chip that's the thing is what you realize when you put these fuses on and then you walk around is that actually regular shoes look weird and these look the way shoe should work because the theory here is that shoes constrain your foot in a way that's bad. And it's right hypothesis. Yeah, well hypothesis but I think it's actually fairly well established as constrained the foot and so the ideal thing you can't walk around barefoot in most urban environments, you wouldn't want to for lots of reasons. So a shoe that allows you to be barefoot inside the shoe doesn't compress your foot will look different than regular shoe. But in order not to be sloppy, like a slipper, it has to hold you firmly so it holds you firmly right near the ankle and it actually has a thin soil you can feel the ground underneath you it's quite a different experience and I really really like it

**Heather** 06:29

yeah, it can it constrains your ankle so that you're not having to use your toes in an unnatural way to keep your feet on to your shoe the way flip flops do. Which many podiatrists good podiatrists will tell you are not particularly good for foot health and it may surprise some longtime viewers who are familiar with some of the trials and tribulations that I've experienced physically that I also was born with genetically very weird feet and had massive reconstructive surgery at 13 which allowed me to become the athlete I'd always wanted to be and you know really walk you know walk and run and play and all of this but it does mean that I've got techy feet no you know basically always have and not in the shoes like really not in the shoes. They're really really quite extraordinary. So we'll be coming back to you again and again with with advocation that's not a word advocacy advocacy for vivo barefoot but let me say now that you can go to vivo barefoot, comm slash Darkhorse to get an exclusive offer of 20% off Additionally, all new customers get 100 day free trial so you can see if you love them as much as we do, seriously, try them. That's vivo, barefoot vi vo b a r e, f o t.com. Slash Darkhorse. Go try them out. We really think you'd like them.

**Bret** 07:49

Yep. I'm very interested to see if they spread as a phenomenon as people try them on and discover what they've been missing indeed. All right. Our last sponsor for this week is our form sofas. So what makes an owl form sofa terrific. An owl form sofa is a sofa that you can customize, you can customize the material that you're going to use, you can customize the layout in your living room, and then they ship it to you and you assemble it. We got one of these and Toby and I put it together in a couple of hours. I must say I have done some furniture building in my day some design and some building and I always whenever we go for furniture to buy something I always look at the construction because it matters in the end more than almost anything else. And I was I was dubious about this because a modular sofa has many more places that something can go wrong that it can creek or fall apart or something like that. But they've developed an amazing system for bolting these things together. So you really do get a fully rigid, very beautiful sofa. But it has the advantage that if you were to for example get a layout and then want to reverse it for a different room or reverse it because you've rearranged the way things are in your room. You can do that you can unbolt it and put it together in a different way. The construction is excellent, the comfort is fantastic and in our case we got a sofa that we think is absolutely beautiful. So highly recommended. You should go to let's see al form a l l f o r m.com slash Dark Horse and they have arranged a 20% off all offer all orders from our listeners at again a Ll f o r m.com slash Dark Horse so check it out.

**Heather** 09:39

Okay, we're done with you. And in homage to Sesame Street. Today's episode is also brought to you by the number 92 and the letter T, that's t. So the hunter gatherers guide to the 21st century has as its index entries for the letter T as follows taboos paynow Tajik children Tarahumara technological frontiers teeth, temporal rites of passage, tetrapods THC, theory of mind, throughput society the rise of tinkering Titanic Titi monkeys, Tolstoy Leo Tal, tal you when can ever pronounce that holloween tools tortoises trade off relationships allocation trade offs, design constraint trade offs, diversity fueled by freedom justice trade off generalist versus specialist traditions transfer resource frontiers treefrogs, Trevor's Bob turtles and of course, tyranny awesome turtles and tyranny,

**Bret** 10:40

turtles trade offs and tyranny in the same section of the index turtles,

**Heather** 10:44

Trevor's trade offs and tyranny. Wow. Yes.

**Bret** 10:47

I mean, if you needed to bring four things with you to a picnic, that wouldn't be a bad set.

**Heather** 10:52

I think it would be can we at least drop the tyranny please, right?

**Bret** 10:56

Bring Bob to picnic.

**Heather** 10:58

Oh absolutely. We've had Bob at a picnic but we had him at our wedding.

**Bret** 11:02

Yes, yeah, it was the officiant he was the officiant at

**Heather** 11:05

our wedding in a bar out there. Okay, so you want to start and then and then we'll then we'll continue yes

**Bret** 11:13

well we'll start we'll start at the beginning and then we'll continue Yes, I have a thoroughly uncomfortable story which under ordinary circumstances I would not tell here for all sorts of reasons I have of course cleared it with you Heather. But I

**Heather** 11:24

need I don't and I don't remember you there are a lot of things to remember

**Bret** 11:26

Okay, you'll know right away and they will be able to read it the horror on your face. So Heather and I had an argument this week yes right now I must say I don't feel terrible about this because all couples have arguments and I think it takes time to learn how to have a proper argument how to be humane to each other but we have done very well in this regard. We don't have many arguments and when we do have arguments they tend to be over things that matter. And we are human to each other in these arguments. Nonetheless we had an argument this week and I must say just an aside in the middle of this argument speaking to your humanity you delivered I don't know if you know this park but you delivered one of the most amazing compliments in my entire life wow All right, so there was a section of the argument in which you gave a list of really extraordinary qualities of mine that you you find I don't know worthy of esteem or something like that. And then there was a kind of a however Sure, right. And then I don't remember what came after that but there was a very long list of compliments and they were really high quality ones and so anyway, that meant a lot to me. Thank you. I do remember what came after however, but I know

**Heather** 12:39

you did. So there wasn't a particular thing in that list or it was you

**Bret** 12:43

have somebody that you love and admire deliver like a distilled list of your best characteristics and maybe even described an overly generous terms it was it was key I'll remember it

**Heather** 12:55

Oh man, I think part of part of presumably why it landed as well as it did I, I didn't know this but is that you're in the middle of an argument. It's hard to imagine that the person that you're arguing with is at their most generous and so right you know, I was I was being honest, I was trying to be honest so you know, I don't I don't think the list of extraordinary features that you have and skills that you have and traits that you bring was in any way an exaggeration.

**Bret** 13:24

Well, in any case, whatever that list was, I enjoyed it. And I also did get the point and and that really is you know, when when one argues you tend to not be in your best frame of mind to be defensive and to have somebody deliver the good and the bad together as is, is a very good thing. But anyway, the point of this story is the following thing. The next day, I was looking at Reddit, and I got an ad for divorce attorney. Yeah. And I The reason I'm telling the story

**Heather** 13:58

is to cover your ass I know

**Bret** 14:01

Well, here's the thing. I am certain divorce was never mentioned in our argument. No. So what the hell were they listening to? What did they was it raised voices? Was it somebody listening to content? What exactly trigger I mean, obviously there's a remote chance that was a coincidence, but I have never seen an ad for a divorce attorney in any scrolling. I've done anywhere as far as I can recall. Yeah, so it's a pretty unusual thing to show up. I've definitely had

**Heather** 14:28

I didn't get those ads.

**Bret** 14:30

Weird All right.

**Heather** 14:31

I wasn't I read it.

**Bret** 14:33

That's true. We didn't run the control. Yeah, but But anyway, there's something very odd about this. I've had lots of coincidences. I've seen people attempt to test whether or not these coincidences are purely coincidental or whether or not they represent something listening You know, you're you're looking for an object, you discuss an object that you might want to buy with your partner and then suddenly you start getting ads for it, even though neither of you is typed it into anything.

**Heather** 14:55

And then Amazon can deliver it to you miraculously the same day, same day.

**Bret** 14:59

Matter of fact, it's outside your door, click this button. But anyway, the point is, we are definitely in a brave new world. And you know, we can hope that that was some automatic algorithm that nobody is paying attention in detail to when we fight or whatever else we might be doing. But I think the chances if this was just simply some low level algorithmic thing, the chances that that lasts and that somebody doesn't start collecting such information and utilizing it in order to gain power and disempower those that challenge them is zero and my bed and I must say, I've been saying this for 20 years, at some point, the thing that collects all this data, right, just sort of, as a matter of course, rather than because you've been targeted it just Hoover's it up, it sticks it somewhere, it can do something that I would call retroactive surveillance, right, it can go back through your history, and it can figure out what it didn't care about at the time, but is now useful to it, right? retroactive surveillance,

**Heather** 16:00

wave comm a person of interest, you've become

**Bret** 16:03

a person of interest, and therefore your past is now relevant, and we own it, right? That's a very frightening that's much worse than somebody having to notice you and then start spying on you, which is bad enough. Yeah.

**Heather** 16:14

And and the distinction philosophically and politically between, like post diction and prediction is huge, right? This is, and this is the ladder, this is mining, as opposed to hypothesis generation and prediction,

**Bret** 16:26

right. And it results in the possibility of what I've tried to describe as some kind of light handed surgical tyranny, right? Where if you can, if you've got everybody's data, and you just leave everyone alone, until somebody causes you trouble, and then you go after them in a concentrated way. The point is, you don't have to harass most people, all you have to do is disrupt the lives of those who would make change and nothing changes. So if you're, if your point is let's keep the status quo because we are doing well in it. And this is a perfect weapon for that sort of thing. So anyway, I don't know what we are to do about this friends, I really don't. But I do think the problem is that the people in your life who sound like they may be overly concerned about the devices we carry in our pockets, for example, probably none of us are concerned enough. I noticed that Ed Snowden had a thing, I can't remember what the main topic of the article was. But it started out by saying when he gets a new phone, the first thing he does is remove the hidden microphones in it. Right? There are things in there that can be used to transduce sound, and he actually physically removes them, because what else can you do? Right? So anyway, let this be a warning to us all. They are monitoring things, apparently that we don't think they're monitoring. And, you know, barring a very weird coincidence, that is a pretty strong indicator, in my opinion, because, you know, random divorce attorney ads probably aren't all that profitable, profitable. So yeah. Anyway, end of story, but I do think there's something to be concerned about.

**Heather** 18:01

Yeah, indeed. So that's, that's where we're gonna go. Yep, that's it. All right. I will also say for those who are in the Pacific Northwest, you will know this we've had I don't know is that our third maybe, you know, incredible heatwave this week and it's a little bit cooler today. But it combined with a change in air patterns, such as the smoke from the fires is finally coming down a little bit. So you know, not only is our AC on, which is drying things out, but the air quality is terrible. And so you know, point of order. Apologies for the the cough.

**Bret** 18:32

We are having our third heatwave this summer

**Heather** 18:35

this week. Yeah, what did I say?

**Bret** 18:39

it implied but you said we were having our third heatwave this week. And I just sort of think it was one heat

**Heather** 18:45

wave. Yeah, yeah, I know this. Yeah, yeah, you're right. You're right. And it didn't it didn't get to 116 like it did the first time in the end of June which was insane. And you know, we're breaking records by by several digits but by several rather by several integers. But it did hit triple digits. And it's it's been it's you know, it's had the air has had that yellow, it hasn't it hasn't gone to orange or red tinge like it did during the fires last September, but it's had that sort of pre apocalyptic feeling to it, which you know, was sort of a decent match for a lot of things. But we are not going to spend time on the apocalypse today. No, no, we're gonna spend time on childhood which is like it's the opposite of the apocalypse. It's actually a hedge against apocalypse. That's what childhood is in some ways. And we're going to start so this is as as regular listeners will know we are going chapter by chapter through our our book hunter gatherers guide to the 21st century, which is coming out September 14 2021. And doing an excerpt or two from each of the successive chapters and then talking about it. And so I actually have a couple of excerpts for this week that I'm going to read we're gonna talk about and then I have some other some other supporting information. To share So, without further ado, we're gonna start with just the first three pages of the childhood chapter. It's a, it's a, all of these chapters really go so many places. And so even if you feel like Oh, you're reading excerpts, I pretty much know what's in the book. Now every single chapter has a ton more than anything we're talking about. So chapter nine. childhood. Childhood is a time of exploration. It is a time to learn rules, to break rules, and to make no rules. When our older son Zack was five years old, he innovated a new mode of locomotion downstairs, which involved a large rubber ball on a mattress. That worked well until it didn't. His arm break required the surgical insertion of metal pins to stabilize the growth plate of his humerus, humerus, and another surgery six weeks later to remove them. But he healed beautifully and innovated with more wisdom going forward. A young orangutan following his mother through the trees may whimper and call for her upon reaching a gap that is too large for him to cross. She will return and bridge the gap allowing him both to cross and to see how it is done. Young ravens spend years and large social groups after they become independent from their parents, and before they form pair bonds with long term partners. alliances formed during this time. But conflicts also arise and those ravens that figure out how to reconcile with one another experienced less aggression going forward. When a young snow monkey named emo innovated cleaning her sweet potatoes by dipping them into the sea, the adults in her troop were slow to take notice. They live together on a tiny island in Japan, but only two adults in the tree have copied her behavior over the next five years. The young monkeys though the other children and sub adults watched and learned five years on nearly 80% of the juvenile monkeys were cleaning their sweet potatoes in the style of email. during childhood, we learn how to be we also learn who we are and we dream about who we might become. Humans are not blank slates. But if all organisms on earth we are the blankest. We have the longest childhoods on earth and we arrive in the world with more plasticity than any other species meaning that we are the least set in stone. Software, which is the interplay of experience and knowledge with capacity is more important in humans than any other species. a profound demonstration of this can be seen in the peopling of the Americas. A handful of ancestors came into the new world was Stone Age technology and diversified into hundreds of cultures across two continents, inventing right in astronomy, architecture and city states. Along the way, the piece the pace of change being far too rapid to be attributable to genes. It all took place on the software side. Our ability to learn language as part of our hardware. Nearly all human babies have this competence latent in them. Which language a baby will speak however, is entirely context dependent. That's software. Furthermore, we quickly lose some of our ability to hear and construct the phonemes and tones of languages that are not in our environment, regardless of our particular ethnicity or lineage. Just as we are born with more neuronal potential than we use, most of our neurons die off before we become adults. We're also born with linguistic potential than we use, and some of it is lost during childhood. We are born with broad potential, and that potential narrows over time. on its surface, the paring down of initial capacity may seem like a tremendous waste. So why do we do it? The answer is that when we are born, we are in a mode of exploration. We cannot predict ahead of time precisely what neurons will we will need what language we will speak so we are born with a surplus of capacity. This permits us to optimize our minds to whatever world we find ourselves born into without the need for prior knowledge. We are born to explore the world around us discover its secrets and structure our minds accordingly. Once this job is done, we shed our surplus capacity less to become a metabolic liability, all cost and no reward.

**Heather** 23:46

Humans are social with long lifespans and have overlap between generations. grandparents, parents and children may all live in the same place at the same time. These characteristics also apply to the other apes to the toothed whales, dolphins and orcas and elephants to parrots and corvids, crows and Jays, wolves and lions and more. All species that are social, are long lived and have generational overlap also tend to have long childhoods. These other species childhoods come with tantrums and play emotional depth and cognitive capacity just like ours. The adults that develop from those children of other species of social complexity is recognizable to us humans as well. spinner dolphins choreograph elaborate group hunts. New Caledonian crow share information among their friends. Elephants grieve. Spending time as children allows animals to learn about their environment. Therefore stealing childhood from the young by organizing and scheduling their play for them by keeping them from risk and exploration by controlling and sedating them with screens and algorithms and legal drugs, practically guarantees that they will arrive at the age of adulthood without being capable of actually being adults. All of these actions almost always well intentioned, prevent the human software from refining our crude and rudimentary hardware. Absent childhood animals must rely more fully on hardware and therefore be less flexible. Among migratory bird species, those that are born knowing how, when and where to migrate. Those that are migrating entirely with instructions they were born with, sometimes have wildly inefficient migration routes. These birds born knowing how to migrate don't adapt easily. So when lakes dry up forests becomes farmland or climate change pushes breeding grounds farther north, those birds that are born knowing how to migrate keep flying by the old rules and maps. By comparison, birds with the longest childhoods and those that migrate with their parents tend to have the most efficient migration routes. Childhood facilitates the passing on of cultural information. And culture can evolve faster than genes. Childhood gives us flexibility in a changing world.

**Bret** 25:45

Hell yeah. So much important there yet can give you insight into how the world works, why it looks the way it does, and how you might live better if you know how to extrapolate from it, which we do in that chapter. Yeah, it leads me to a couple of thoughts. One, I'm very interested to see whether the world will figure out the blank slate slate point, right that we

**Heather** 26:13

so just to reiterate, we aren't blankest We are not blank slates, but we are the blank list of all life on Earth, right? We are born with the most capacity to become something we are not yet.

**Bret** 26:23

And so this puzzle, there's a couple of layers to this puzzle one, people will have heard us talk many times about the fact that sex is in fact binary, whether we like it or not, right? It just simply is. So in this case, binary thinking is actually where you want to start. Now there's lots of lots of sex, sexual sex, right? And then you could say, actually, the software, which is gender is much more variable, but the sex isn't right. So there's a binary aspect there's a more continual aspect with this heavily by modal but not perfectly so or it is by modal but it is it there's at least stuff from one end of the continuum to the other. But anyway, the point is, we tend to be binary in our thinking reflexively, and that has not served us well with respect to the the so called nature nurture debate, the blank slate ism, which is preposterous, the rebellion against blank slate ism, which is preposterous, right? Both of these things are wrong. And so how do you even formulate this and just a simple recognition, just the fact the fact that human beings are just the blank slate by virtue of the fact that the amount of our behavioral repertoire that has been offloaded to a flexible portion of the mind that is actually loaded in after we are born is greater than any other creature that's an amazing fact and understanding its implication right and where that puts us in this non binary discussion is crucial. So you know, I don't know whether the book will have this effect on the discussion, but understanding that you are not being clever to say we are not blank slates right? If you do not follow it up with given that is one end of the continuum and we are closer to it than anything else, then what are we to infer?

**Heather** 28:12

Right, exactly. And it's not to suggest that we have any less genetic input at an absolute level then then our brethren and then everything else on the planet but that we have so much more that that contributes to us becoming what we are that you know, at the absolute level we are you know, we are genetic in makeup just as just as chimps are just as chanterelle mushrooms are just as cedars are just as drugs are. But we have In addition, as you know, and and as with so many of these things and we talk about this in the book a lot we've got the sort of nested sets of like you're actually all mammals have a fair bit of, of learning to do and some memos don't do very much but because of that, you know, initial innovation of milk of mother's milk, which then allows for the evolution of love and allows for the transmission not just of you know nutrients and immunological information through the actual mouth, but the the tactile bonding, and then the, then just the spending time together that then allows for the further evolution of more time that is spent in childhood. all mammals have some some kind of juvenile phase that could be called childhood, but there are the usual suspects, as I call them, those organisms that are long lived and social with generational overlap, you know, as as we say, in this excerpt I just read, almost always also tend to have long childhoods and you know, childhood being that period between birth and you know, it varies in over a non human animal space, we tend to say first reproduction. But of course, there's a tremendous amount of time which in humans we call your puberty or adolescence afterwards You are technically capable of reproducing before which you are, can really be considered a full adult. And so all of that is what work it's considering in this concept of childhood, you know, during which time different cultures have different have different timings. And actually, that's the next excerpt that that I'll read. And maybe that's a good segue. But all just as just as all mammals throughout history, have provided milk to their young. All humans throughout history, have a period of time during which the children are at first completely helpless, and then somewhat less helpless, and then ever more ability to ever more able to help themselves. But at the same time, benefiting from being in the family setting, being being able to observe what elders do what youngers do, to teach, to learn, to interact, to play, all of these things are part of are not an after effect, they aren't sort of what you do, and we'll get to this too, they aren't what you do to fill time, because you're stuck in childhood, they are the reason for childhood,

**Bret** 31:05

they are the reason for childhood. And we should say, you know, it's very easy to jump too early to a conclusion, right? So we have more that is divorced from the genes. I didn't mean that. I'm just waiting for my phone to pick up on the word divorced and more ads. But now the the fact that the genes have surrendered control over our behavioral repertoire is not an indication that the other part of us has staged a coup. And that's another Yes, key feature of the book is that we describe the relationship between the software and the hardware. And the point is, they actually agree on the hardware as objectives for both better and worse, right, it makes understanding what we are much simpler. But the point is the genes have offloaded the work to the software layer, because it is done better and faster, not because they have given up any control, or they've given approximate control, but they haven't given up control over ultimate objectives. And that is, in many ways, the greatest obstacle that we face is that we have this sort of default inherited purpose, which is the same as the purpose of every other creature, and therefore, not a worthy purpose for creatures like us who have values that are not best matched to that, you know, most fundamental evolutionary objective. So anyway, we have to grapple with that. And I guess the third thing, which you hinted at in passing here, is that childhood, as much as it is an amazing time is actually an unavoidable cost. In order to get the software part loaded Well, you have to have a childhood, it's a cost that you have to endure. And if you think about the way selection has to view this child has a big risk, right? It's because childhood is long, and dangers are many, there's every possibility to invest in someone and have them never reach a reproductive capacities. So it's a cost that is born because it must be born in order to get the benefits of it, which are this amazing flexibility, right, the difference between being stuck with a migratory route, or being able to change your migratory route to be more efficient.

**Heather** 33:14

Yeah, and I just I love that result. I remember when I first came up, across sad about the migratory birds that are born, knowing where to go, and those that are learning from their parents on the fly, quite literally. I used to share that, in my vertebrate evolution programs. And I when I taught that, and, you know, I've seen I've seen that update, but I've also, you know, stands it hasn't been falsified this, this idea that even for birds traveling long distances, if you have someone with whom you can do an interplay in real time, or like, Oh, this or that, this or that, as opposed to, I know what to do, and I'm doing it, how would you earn under those conditions, it's got to be a very, very drastic change for a migratory bird who's born knowing us born with the instructions on board for where to go and how to get there. To change that up.

**Bret** 34:10

Right. It's it's the very clumsy process that we describe in the bio 101 textbook rather than upgraded process that selection has discovered that allows for the rapid honing in on a new innovative way of doing something better. Well, and

**Heather** 34:23

you know, don't get us started on textbooks, right? In this as in so many things, what's in the textbook is hopefully was generally thought to be right at the point that it was written. It never describes the actual process by which we arrive at what we think to be true. That is it doesn't describe the actual scientific process. It may describe the conclusions of the scientific process. And it doesn't it tends to simplify to the point of caricature, which often then ends up introducing inaccuracy, usually unintentional but you're so often textbook versions of things as opposed to deep dives and discussions about what the implications are, will lead you astray. And this is, you know, this is this is why this is sort of the basis for this thing that people say, you know, a little knowledge can be a bad thing, right? You know, you know, a little bit and you think, you know, you think you know, what evolution as you think you know what science is, and then you speak with the authority from a textbook, as opposed to the authority of having dug deep and tried to think through? What would this mean, what are the implications? If a, b and c, then what, what will follow? And that, of course, is a large part of what we're trying to do here. Yeah, evolutionary lens.

**Bret** 35:38

I mean, I've changed my opinion a little bit on what's going on in the textbooks. I mean, textbooks themselves are a troubling phenomenon. And

**Heather** 35:45

let me just say school is next week. So well, we'll get we'll come back here and get there.

**Bret** 35:49

Yeah. But if you think about just the process of science and textbooks as sort of a, an instantaneous description of the model, as it stands, right, they're not perfect, they're written so as to be understood, they're not necessarily the top quality thinking they should lean in that direction as often as possible. But if you think about science, as a process that builds models that predict behavior of stuff, and those models, as they get closer and closer to the truth, predict better and better, right, the number of factors that they exclude drops, the textbook in theory should grow. And its ability to predict what takes place in any particular incident should go up. But at some level, this is not so different from the much more normal process of understanding the world around you, whether it be the social world, or whether it be the sport that you play, or what or whatever, you know, you have some model something you say, it isn't exactly true, right. And so in the book, we talk about literally false, metaphorically, true things, but the degree to which that applies to every realm, right, in sport, for example, the idea that you have to follow through on your swing at the baseball, yeah, right, you're not affecting the baseball after it has left the bat. Following through is not what works. It's the planning to follow through that causes you to hit the baseball properly. And then everything after that is just what happens, right? So does that matter? No, the best way to teach somebody to hit the baseball properly is to tell them to follow through, right?

**Heather** 37:23

Yeah, I remember this. I played more tennis than baseball as a kid even before this foot surgery that I had. And I remember in a stubborn moment, which I had a few of like, what if I don't know what if I don't follow through? And, and I could just tell, I could just tell as a kid, there's no way I understand the physics well enough. I have scientifically informed people in my life. And even though I'm a kid, I know that this can't matter. But I couldn't if I knew I wasn't following through I could not play as effective tennis, as if I didn't think it's part of it is that part of it is that you can reach that sort of flow state more easily, if you aren't trying to stop the thing. As soon as as soon as you leave. As soon as the racket the ball leaves the racket, right?

**Bret** 38:13

That's part of it. But it's also that there's actually in order to stop the racket afterwards, you have to invest in the stopping of it, and that race in the road of the thing that you're doing. So imagine the follow through actually matters. It does matter. But it doesn't matter for the advertised reason, right? Obviously, and yes, anybody who plays one of these things can figure that out. But But the point is, now it's still the best way to teach it. And you know, how do you figure out what's going to happen on a billiard table, right? Well, Newtonian mechanics is wrong, but it's not so wrong, that we don't still teach it because it's still really freakin useful at slow speeds, right? So anyway, these are models, they contain a degree.

**Heather** 38:53

So just just to fill that out. You're not you don't teach Einstein to people learning pool. Right? Right? That would be that would be pointless,

**Bret** 38:59

right? It would be pointless, right? If you're, if you're trying to understand what's gonna happen, the added value of doing it, the more rigorous way is not matched by the added complication of it. And so you have this approximate model that works really well. And so that's, that's good enough. One last thing before we move on to the next segment.

**Heather** 39:18

Yeah, I mean, it's really it's quite, it's about plasticity. So it's all in in this space.

**Bret** 39:23

All right. Well, I think I think I'm gonna put this here Friday, because it was raised by the initial thing that you read, which talked about languages and the loss of the ability to use phonemes from languages that don't overlap your own if if you don't hear them, or I think use them as as a very young person. And I'm, there's a part of me that's very wistful about some of the things that woke culture has eliminated from the landscape and one of them is language play between different cultures. And I know we've spent lots of time at field stations with people from all over the world. We've traveled in many different places, that there's a certain joy in playing with accents. Right? is especially fun to try to let other people be if somebody speaks Spanish as their native language, and they've learned English, trying to do a Spanish accent so they can hear what the accent sounds like,

**Heather** 40:25

trying to do a Spanish accent in English. Right?

**Bret** 40:29

Right. It's, it's great. And you know, and you might think, oh, that's really insensitive. No, I love it when people do this to us, too. And it you know, this is the kind of thing that people who have played across languages, everybody loves it. And anybody who can do a really well is the life of the party, right? It's, you know, it's an important thing. And I'm reminded of this

**Heather** 40:47

routine. And it's the kind of humor in which there is recognition. It's not denigrating, it's not exclusionary, it's not tribal, except in that it recognizes that yes, those of us who speak different languages do in that one way at least belong to different tribes. But if we're trying to reach across those tribes, if we're trying to just recognize Hey, we're different and it's cool and we want to communicate, here's how you sound to me how do I sound to you?

**Bret** 41:09

Right right and you know, there I remember jokes about particular errors that people from particular language groups would tend to make in your language that basically create inadvertent puns and things

**Heather** 41:19

and the unintentional jokes are no no the jokes

**Bret** 41:23

are a retelling that is based on a predictable failure of somebody from a language group and you know the point is is just too sensitive you couldn't do such a thing now but it was never disrespectful right we all know that we do this in the others language right? That's just the way it is and and so hearing this is just it enriches you you you are able to put yourself in the mind of somebody else hearing the way you speak it probably increases the way that the acuity with which you speak in another language. Yeah, I know I spend a lot of time sort of goofing off you know, speaking English with accents from around the world. Based on what I've heard, you know, and I don't I don't find anything wrong with I know there's no disrespect, but I'm reminded of this musical comedy routine is entirely Italian. How Canadian What's his name? It's Andrew Yano sellin tunnel and the song in the video is very dated and as far as I know there's not a really good version of it the the video is actually degraded because I think it was recorded on videotape and there's no master that has reemerged but but anyway that we get to

**Heather** 42:34

are we gonna link to this Yeah, we

**Bret** 42:36

could. The song is called prison colon incidents in Suzhou right not helpful No, here I have this going there. Anyway, the point of the song was it was a kind of elaborate, elaborate musical song with a kind of fanciful rock star character this Italian comedian sort of a slick guy singing what appears to be a song in English except there are no English words in it it's what English sounds like to attach like

**Heather** 43:08

it's full of English phonemes but it's not full of English words right? And so for Italians who don't speak English or speaking a little bit it's what it sounds like it's what English pop song would sound right and

**Bret** 43:19

it is very catchy right and it appears to be full of meaning right? You know, it starts out with him lecturing to a class full of attractive young women and he's the cool handsome teacher or something like this and then he breaks into a song and dance routine and never does right it's as one does sure but anyway the point is there was nothing disrespectful about this quite the opposite it was Italians telling you know, English speakers who had taken over the world of pop music sounded like to them which is you know

**Heather** 43:49

here and it's not we're saying How dare you or this is gross or we don't like this like right here

**Bret** 43:54

No, it's awesome I actually

**Heather** 43:55

it occurs to me that hearing you talk here that one of the many reasons that I love being in places where I don't speak the language and I always try to speak enough to be respectful and to get along and I you know you and I've talked about this on air and in life for decades now I really wish that I had more facility with other languages but my Spanish is enough to get along by with at this point my French is enough to get and you know my mala Ghazi not really and you know when we've got when we were in Turkey, we learned a few words enough to be you know, informed, but that was really it. So being in a place really any place even in Latin America where I do speak enough of the language that I can I can now recognize the chatter around me enough at least to know sort of what the context is. But it's it's like this intermediate between much as the reason that I love to watch cats do what they do. And the reason I love to watch monkeys do what they do is that it's it's animal behavior. And I that I want to understand what organisms are doing without the overlay of the Damned explanation. right because the explanations you know the anthropology of what's going on is very often now you're in the in the domain of like deceit and self deception which is itself evolutionary and that's all very interesting. But you know just as we have said again and again, you've turned down the sound on your conversations or in the conversations of others and you will learn a lot more about what is actually going on like what people are actually feeling towards one another. And you can do that much more easily without turning down the sound if you're able to listen to people and watch people engage in the language that you are not fluent in or don't speak at all and so you get to engage with people as as people you know, rather than as cats or as monkeys and like when you're trying to engage linguistically I'm like, this sucks it's really hard for me I'm trying but then take a step back and like okay, this is awesome because I get to see I get to interact with people without having to internalize their stories about themselves necessarily the way that when you're in when you're in your home language it's very hard to say okay, you know, I just don't want to hear your stories at the moment I want to watch what you do

**Bret** 46:09

yeah, it's it's absolutely revealing it's also fascinating to find out you know, when you do spend time like we've had guides for example, we've you know, taken for a week into on Karna for example where we do have some shared language enough to to get by but not a lot and it's amazing you know, how you think that a friendship is based on what you say to each other and the fact is, that's part of it but it's but it's not it's not the majority of it and so you can you know, you can genuinely really like and respect the character of somebody that you've heard very little from and aren't in a great position to say exactly what they said

**Heather** 46:47

yeah, well I'm just thinking you know, you do end up with little linguistic shared things that become your like the the foundation for your for your friendship and so you know, I'm thinking specifically of it was probably I should leak it's actually in a car now which is in northern Madagascar the very first time we were there maybe it was the second time we were there that in which we you know, and this happened over and over again in Madagascar things never come when they're supposed to so you're waiting for a boat and you're stranded and like okay, is it going to come tomorrow? Well I'm gonna repeat Sue is one is what they say Gomorrah pizza, maybe tomorrow is going to come tomorrow on Gower pizza. And

**Bret** 47:29

a number of pizza would literally means maybe tomorrow and figuratively means almost certainly not tomorrow right? And also

**Heather** 47:35

means how would I know? If I were I know you're here just like I am I How do I know? And then because you know, mala Ghazi was their first language and English was our first language and we came together in French the English their French was generally much better than ours. It's an on camera on camera Petra, maybe right God but that's why maybe you know, so maybe maybe maybe in three different languages and they just keep repeating it to us like okay, and so became sort of this mantra, even when you're like, oh, are we going to be able to get enough rice for dinner? hungama potato maybe? Yeah, are we going to find the frog today on Gumball potential? Maybe

**Bret** 48:10

that's is a great example because I think asure league didn't quite understand that that would be funny to us he thought he was just sort of covering it you know, in all of the language in case we missed the first necessary we started repeating it because it was funny it became an inside joke for all of us. Yeah. So yeah, these things these things frequently happen and they say a lot and I will say one more thing I'm wondering if I have mentioned this before if I have you'll tell me I'll stop but I used to run an exercise with classes that I would take especially to sunlights in Washington where we would spend a week in a place where you can basically hike without the trail system because there's enough stuff up above you that you can figure out where you can dead reckon basically across this wild habitat and for one day of the week, we would make a rule and it was sometimes called silent day but it was not silent day the rule was no use of language no reading no writing no speaking language but you could do anything else you want you could whistle you could make noises right? And so people went about their normal activities and they innovated ways of doing things so of frisbee game right? descended into like whistles and hoops and things because you didn't really need all that much language to play frisbee right? And you know walking on a trail the way you ordinarily warn somebody they're about to you know, trip on something you know these things take on another character there's certain things you can't suppress you can suppress your language but then ouch you know or you know shit right that just you there's Tourette Syndrome, standard Tourette Syndrome stuff emerges anyway, which tells you actually that is really filed separately, right? Yeah.

**Heather** 49:54

Well, and and the failures are interesting, too. So I didn't do this as often as you did, but we did do it. On our big on our 11 week Ecuador study abroad in the Amazon at Shira Puno, your deepest in the Amazon we got on that trip. And it was it was deep. And so we did we did a no language day then and I I was out walking alone hiking alone. And I came upon one of our best students I'm not gonna name him here I think he I think this may be in the book, I don't remember I'm not gonna name America's I didn't clear it with him before before thinking I would tell the story. And he's on the trail ahead of me coming the other direction, with his binos up looking into the end of the canopy. And I and I, you know, and he sees me and from a distance. Walk quietly up as you always should we fear when you're in the forest, if you want to see anything. And, and we don't have any language. And so he's like, clearly about to leave. And so we sort of share a little whatever it is, I don't even I don't even know how we shared anything, you know, some meaning of some kind of, I'm looking and I'm like, and he walks on the other way. And I stay there for a while looking at the sloth in the trees that he was clearly looking at. And that's part of the Amazon was very interesting. Like in Central America, we have happened upon places with so many slots. And in the Amazon, they're much rarer. And so there are a lot of people, students on our trip who are really excited about slots, and

**Bret** 51:22

rarely seen, it's hard to know how rare they actually yeah,

**Heather** 51:24

there's just there are a number of places where I've been where we've been in Costa Rica and Panama where you just guaranteed to see slots. And and it was I think this may have been one of one or maybe two slots that anyone saw on this entire trip. And so I can see I was still in the forest for a couple of hours. And I continued on I think I came out to lunch. So we're still not talking and then come dinnertime, we decided to break the language thing for dinner so that we know we're all sitting around, you know, eating by candlelight for dinner. And and I sat next to him. I said, Oh, man, Thanks for pointing out that slot. That was awesome. Like, what's, what are you talking about? What? What were you looking at? And he was he's he's a bird guy. You know, he's really into the birds that he is I don't remember what bird it was. But he was looking at some bird that I didn't see because I trained my binos on what looked like the same place he had. And I saw the sloth right away and stopped there. So you know, I could have also seen the bird and he could have also seen the slot. If we had been in a moment when we had decided that we were allowed to speak but we were honoring This is totally artificial. Like we're not going to do language now. And oh my God, thank you so much. That's awesome. I don't think we saw this, we saw totally different things.

**Bret** 52:36

I don't think you necessarily would have both seen both animals. I mean, obviously that's a possibility.

**Heather** 52:41

If we'd had language, we would have known what we're looking for. Right. But

**Bret** 52:43

I think one of the likely out I mean, the particulars matter a lot in this case. Yeah, right. But one of the likely things to happen in that scenario is that you would have walked up and he would have said slot. Said Berg, he's watching a bird. And you would have trained on the bird and the sloth would actually have become invisible to

**Heather** 53:02

you. This is a possibility. And so language could have stolen that slot from me.

**Bret** 53:06

Well, that's one way to think of it wasn't the thing. It This is such a high bandwidth mechanism for plugging two brains into each other that the effect is that it's very hard, you don't realize that you're actually looking through somebody's eyes, just because they've sort of given you an immediate orientation to what they're looking at. And suddenly, that's what you see. And you don't

**Heather** 53:26

borrow my perception for a moment, right,

**Bret** 53:28

which is what it's great for. But the point is until you turn it off, you don't realize how often that happens, right? You need an experience like the one you're talking about to even be able to calibrate it and say, Well, how often, you know, yeah, it's a calibrator like, like, leaving the lock in your car off accidentally and returning. And nobody's touching anything? Because of course, how often does somebody actually try the door to your car, right? Almost never presumably.

**Heather** 53:52

Right? All right, let's do another little section here. This is just two and a half pages. It's called plasticity. Again, from chapter nine childhood chapter of a hunter gatherers guide to the 21st century. childhood, excuse me Hold on. childhood, and by extension parenting is an interplay of love and release of holding someone close while also giving them freedom to explore, even perhaps to leave. In biology, we speak of plasticity, often phenotypic plasticity to refer to the many outcomes that are possible from the same starting materials. Roughly speaking, a genotype say the alleles for brown eyes, produces a phenotype, the actual brown eyes. phenotype is the observable form of an organism. For many traits, though a particular genotype encodes information for a range of possible phenotypes, and interactions with molecular, cellular, gestational and external environment determine what phenotype will actually be produced. phenotypic plasticity allows individuals to respond in real time to changing environments, to avoid being catalyzed and to set patterns and lifeways by their genes. The skulls of dominant wild hyenas are big and robust with large sagittal quests on top and broad zygomatic arches of their cheeks. Both of these structures provide places for muscles to attach much needed if you're in the business of asserting your dominance with your teeth. Compare this to the skulls of hyenas born and raised in captivity which have no such structures. The different environments of wild versus captive hyenas affect what form or morph they have. In the same vein, human children who choose soft processed foods have smaller faces as adults than those who grew up chewing hard, tough food. Speed foot tadpoles can grow slowly into omnivorous morphs or if they are tightly packed and running out of time and space in the ephemeral pools in which they live. They can grow more quickly into larger fiercer cannibal morphs and feed on each other. What Morphe spayed foot tadpole develops into is entirely context dependent. When temperatures soar zebra finches communicate this to their unhatched chicks. zebra finch chicks whose parents told them about high temperatures while they were still in their eggs alter their begging behavior as nestlings and when they become adults, they prefer hotter nest sites, even are critically important aortic arch the first arterial branch off the heart that takes oxygenated blood to the body has several common anatomies within human populations, which can develop from highly similar genetic starting gates. plasticity provides the possibility of alternate phenotypes, often through simple rules that do not prescribe precise outcomes. The result ever more so with increasing levels of complexity is exploration of new territory, literal and metaphorical. One place that plasticity manifests in humans is the wide variety of approaches to parenting across cultures. in Tajikistan, babies and toddlers are restrained for hours on end and cradles known as Guevara's. Gabor's are treasured within families and passed down between generations. Tajik children are the center of family life, mothers, grandmothers, aunts and neighbors are always available and immediately respond to cries from a cradle baby with food, singing or other comfort. counter to Western expectations, though, within a few weeks of babies being born, they are placed in divorce provided funnels and holes through which to pee and poop and their legs and torsos are tightly bound. Children those cradled can move their heads but little else. These children with little experience crawling or attempting to walk in their infancy do not walk as early as children raised in the West. The World Health Organization's formal expectations for when children start to walk are between eight and 18 months. And yet Tajik children may not walk until two or three years of age are the Tajik babies dullards are physically incompetent. Now, in contrast, children in a rural Kenyan village sit and walk earlier than Western babies tend to are they Kenyan babies inherently designed for greatness, their precocious motor skills predictive of early mastery across domains. Also known variations in baby raising culture across humans exemplify some of the great plasticity that humans have. Kenyan babies walk earlier than Western babies. But all but the most severely disabled Western babies learn to walk soon enough. Weird parents are not just focused on our children, we are focused on the metrics that are easily recorded and conveyed to others, the when of our child's first smile, word or step. Once we have such metrics in hand, we are easily confused and to imagine that the when is a critical measure, not just of health, but a future capacity. Once again, the easily measured thing, the calorie, the size, the date, becomes an inaccurate stand in for a larger analysis of the health of the system. By believing the false notion that when a benchmark is met, is the salient measure of health and progress. We play into our modern fear of risk. It is risky for my child to miss a benchmark, it is risky for me not to force my child to meet arbitrary deadlines. Such parental focus can instill fear in our children, which they carry forward as an aversion to risk.

**Bret** 58:46

So important. If you don't learn to manage risk as a child, you won't be able to manage it as an adult, and you're very likely to run afoul of the full adult scale hazards.

**Heather** 58:59

Yeah. And so maybe that's that then, unless you had something right away is a good way to segue into talking about America's worst mom. Wow, I know. She's a friend of ours. You know?

**Bret** 59:11

I didn't. Yeah,

**Heather** 59:13

LIDAR scan AZ. Wow. All right, mom. Yep. Yep. Yep. So for those of you who don't know, the second edition of her book, free range, kids is just out. And it's fabulous. Except, wait, what? What business? Is she talking about childhood? She's America's worst mom. Yeah. How'd she get that description? What earned her that delightful title in 2008. So she's in New Yorker. She lives in New York City. In 2008. She left her than nine year old son find his way home alone on the New York City subway. He had been begging her to let him do it. She did. From the article that she wrote, which we'll post in the show notes on the New York Sun, quote, long story short, my son got home ecstatic with independence. But of course, the uproar was amazing. And fierce How could she have let her precious cargo loose in the terrible hostile environment that is the modern American city. And in part her position is the city is supposedly safer than it's been since the 60s like you know, we've we've we've gotten better. But you know, more to the point, the safety ism, which is something that she talks about, and Jonathan Hite talks about, and indeed the two of them together along with an excellent psychologist named Peter gray, and also Daniel Shipman, former chairman of fire started organization called let grow, which is specifically about creating children who enjoy risk and have independence in our anti fragile. And Lenore, who's a friend of ours is an advocate for safe and independent childhood responsibility. And just think about in light of, I'll show this later, but in light of that story about what's going on in Tajikistan, and what's going on in a rural Kenyan village, the the variety of approaches to parenthood in functioning cultures, you know, we're not talking about outliers and psychopaths, within cultures, who are abusers, and, frankly, evil, that's not who we're talking about. We're talking about other cultures in which children grow up to be adults who are functioning and productive, that do things so differently from how we do them. And yet, when American adults stray from you know, where wouldn't weird, you know, when Western educated, industrialized, rich, democratic people in countries that that that describes do things that go outside of the current mores of sort of safety ism and protectionism. And always looking over the shoulder of children and informing them what they should do, and telling them what the rules are, and making sure they don't stray. When when we go outside of that we are told that we're putting our children at risk. And you know, this, this requires a bigger conversation about risk, which we will I think start today, and I mean, we've been talking about, but maybe we will be talking about for some time. But the idea that individual level risk is the only risk that should be thought about. And that should be, should be responded to, because it's the easiest to measure, as opposed to creating a society of people who are incapable of doing the analytics themselves and taking and taking responsibility for their own risks such that you then have a society level problem, a society level pathology, really, in which people aren't capable of figuring out what is true for themselves.

**Bret** 1:02:41

Why do think, in the interest of balance, we should point out that there is some evidence that a relaxed parenting style can lead to moderate to severe cases of heterodoxy. You know, there's no telling where that goes. But yeah, so the other thing is, in some sense, I mean, here's the really uncomfortable part of this, there is no, there's literally no way to raise your children so that they are safe, and are capable of managing risk as adults, the way you learn to manage risk is through things not going completely well and adjusting.

**Heather** 1:03:18

You manage risk completely, you take all the risk out of a childhood, and you end up with a person in an 18 year old body with the brain of a child, and how is it that they're going to continue? Like how is it they're gonna become adults, it's harder, plasticity does get less and less acute, the longer it goes, you develop? Right?

**Bret** 1:03:36

In fact, what you will get is college is full of children demanding that the world be made safe around them. Right. Right. Which, you know, I know that sounds far fetched, but it could happen. Yeah. But So in some sense, what we're saying is that if you keep your kids safe, that you are putting the adults they will grow into at risk, right? That's the counter intuitive point. Right?

**Heather** 1:04:03

Well, and but not just that, if you keep your children safe, you're putting the adults that they will grow into at risk, they will be less competent, less productive, more fragile, less capable in all realms. And furthermore, and some parents will say not my responsibility, but Furthermore, you're putting the society into which you are moving them at great risk. So you are also taking you're also creating a cost that all of us bear by creating fragile children. And are they do they have a higher chance of surviving to their 18th birthday? If you put them in a bubble for those first 18 years? Yes, they do. Is that 18 year old, someone who is going to surprise you going to be creative, going to be productive, going to be analytical, insightful, going to be industrious, going to be capable? No, no, but they're going to be alive. So which, which of these things do do do you treasure More, obviously we want our children to be alive. But at the cost of everything else, everything else, a guarantee, almost a guarantee that by bubbling them up for the first 18 years, they will survive. And then what? Then you have a perennial child, and then you have a society full of perennial children.

**Bret** 1:05:21

Right. And, you know, I think many of us have happened on this realization from different paths. Yeah, I mean, this is not so different. I mean, it's not at all different, really from Jordan Peterson, suggesting that you're not interrupt children while they're skateboarding. Sure, right. It's the same thing. And the point is, is skateboarding safe? Nope. But it is a good way to break your arm and learn the lesson of how one breaks their arm while you're young. Yeah, and

**Heather** 1:05:47

is this safe? Second one, show this.

**Bret** 1:05:51

Right,

**Heather** 1:05:52

let's do this. So for those listening, this is a picture of our then our then eight year old son Toby. jumping off the fallen, excuse me, the root mass of a big leaf Maple that had fallen and ice storm the year or two before. It's it's quite a ways down and he's jumping into a mixture of Ceylon and Oregon grape, mostly not Oregon grape, although I see some of it there. Or I can great being somewhat spiny. And he did it over and over and over again. And so did the dog and so did Zack. And this just as the picture that I found, you know is could he break a leg? He could? Could he break his skull open? He could, this isn't where you start. You don't start by jumping off the highest thing into an uneven surface, you learn to fall, you you figure out how to deal with your environment in smaller steps such that by the time you're eight, you can do this. And by the time you're 18, you can do more.

**Bret** 1:06:45

Yeah. And you know, in fact, we are of course wired for these things. I have hypothesized that we have many weird characteristics. lowercase, weird, not weird country characteristics, but weird characteristics designed to train us to protect things that matter. Right? And my guess the prediction of the model is that you get hit in the testicles more when you're young. Right? And that I didn't know. I'm sure you didn't. But those of us who did, right, it's a very profound experience. And the point is anything that you do that results in a likelihood of that leaves a very clear imprint on you and it trains you without anybody having to wag a finger right? You you understand exactly what the problem is. And you just learn not to get hit in the nuts and

**Heather** 1:07:34

me It's the difference between knowledge gained by embodiment and experience as opposed to being told you know, like, dude, play better tennis, cool, done, okay, if it were that easy, which it's not and somehow in this incredibly abstract. Unfortunately, far too postmodern world in which so many of the people engaging even those who say they've, they've seen the flaws of post modernism and are not going to engage in any more so many people are operating entirely social landscape, like making arguments that are about sociality as opposed about social implications and what other people say and whether people think as opposed to what is true like what what actually is true and the way you know that best is by physically engaging the truth of whatever it is that you're trying to physically engage

**Bret** 1:08:19

well I do think physically is the way you learn all these basic lessons and then there's a way to extrapolate so you can learn lessons that you can't possibly afford to learn yourself. Yeah, I know it's become a joke in our family but I am quite a big fan of the subreddit what could go wrong? Because a lot of things can go wrong and the most interesting things on what could go wrong are the things that go wrong repeatedly that you don't think are likely to happen at all right? Those are very fascinating things And anyway, it does cause so so the point

**Heather** 1:08:52

and bonus you get ads for divorce lawyers when you're looking at what could go wrong? Actually,

**Bret** 1:08:57

I did not I did not think about whether or not I was browsing what could go wrong when the divorce lawyer ad came up, but But anyway, yeah, learn there's a bunch of stuff you can learn yourself and nobody has to tell you. Hey, don't get hit in the nuts again, right? Don't get hit in the nuts again, no needs to say it right. Also, hey,

**Heather** 1:09:14

try not you don't need school for right.

**Bret** 1:09:16

Try not to hit your funny bone. Yeah, got it. Yeah. All right, right. There's a very good reason you know, most people don't realize that there's a good reason for the funny bone thing. And it has to do with what happens to the nerves that operate you're very important hands as they pass through a joint that can't allow those nerves to be protected by all the outer stuff. And so, you know, bumping your funny bone is a warning. Hey, if you keep doing that, you're going to lose use your hand. Yeah, right. So anyway. If you insulate your children from the things that will cause them to get hit in the nuts, they might get hit in the nuts as an adult. Yeah, this is a bad thing. Yeah,

**Heather** 1:09:49

indeed. So actually, this totally totally apropos. This from one of Peter Gray's excellent books free to learn why unleashing the instinct to play will make our children happier. more self reliant and better students for life. So I've just got a bunch of things about play like let's talk about play here. So he's quoting here a 1994 this book was published his book is published in my forgot I don't have it here. This book was published more recently, I want to say 2014. But I think I'm making that up 2013 and he's discussing here a 1994 description from an anthropologist named Martini. about children in Polynesia on the basis of martinis extensive observations of children on the mark case an island of Whirlpool. I have never been I don't know how to pronounce that. In the South Pacific researcher Mary Martini wrote the following 13 members of a stable playgroup are observed daily for four months and less systematically for another two children range from two to five years old. They played several hours a day without supervision while their siblings attended school nearby. They organized activities settled disputes avoided danger dealt with injuries, distributed goods and negotiated contact with passing others without adult intervention. They avoided adults probably because adults disrupted their play. The play area was potentially dangerous. A strong surf broke on the boat ramp. The large rocks on the shore were strewn with broken glass. The valley walls were steep and slippery, children played a High Bridge in high sharp lava rock walls. Remember, this is children ages two to five. machetes, axes and matches were occasionally left around and young children played with these. In spite of these dangerous accidents were rare and minor. Hitting teasing and scolding were frequent. But fistfights tantrums and prolonged crying were rare. disputes were frequent, but were just disappeared after a few minutes. Children did not seek adults or older children to settle conflicts or direct there play. This is what functional play and childhood look like

**Bret** 1:11:54

right? And the just you need to map the scolding that would come to you if you took this lesson to heart and you engineered a world in which these lessons could be learned by children in the way that they are learned in other parts of the world. You would be potentially accused of child abuse and

**Heather** 1:12:13

you could become America's worst mom.

**Bret** 1:12:15

You could take over for Lenore, but I couldn't. I guess I could now, by the

**Heather** 1:12:21

way hurt her two boys are both young adults now and successful and thriving, thriving and alive human beings. Yes.

**Bret** 1:12:29

But I'm I'm reminded I hope I have the story, right, but Martin molan? Who is the prime mover behind the marble machine for which the mute from Yeah, target on set how it's pronounced. Okay. marvista get in touch We need to talk. But anyway,

**Heather** 1:12:49

the music for dark theme music for

**Bret** 1:12:51

Dark Horse, he describes playgrounds, yes, in which they're, you know, wood with nails sticking out of it just, you know, playgrounds from hell in which people actually children actually learned how the world works. I

**Heather** 1:13:06

mean, this, this is a move. But I think in Europe, I don't think it's really spreading to the US yet. But these intentional playgrounds that have these, these risks and hazards, right, and you say playground from hell. But it's not like this is a playground that was created for you know, utopia and has been allowed to fall into disarray. There's a playground that has been created with the risks embedded in them. Let's

**Bret** 1:13:26

put it this way. If you look at the marble machine, and you think about what it implies about the person that put it together, that person spent time on these playgrounds with hazards, allowed to actually explore and figure out how to build stuff. And you know, it created a genius mind. Now, you can't say how much of that was the nail sticking out of the boards, but something about this worked. And so anybody who would question it is obviously wrong, doesn't know what they're talking about, which, you know, I don't know, I'm sure kids get hurt in those playgrounds. Yeah, sure they do. But the point is, the fact that children get hurt now, is not evidence, you're doing something wrong, because again, it's the adults that you're putting at risk if they don't get hurt.

**Heather** 1:14:06

And you know, as with all of these long term questions, it's very hard, if not impossible to do the experiment. Because Because the control is so far out, and it just requires longitudinal tracking. So you know, you want to compare you want we would want to, and it's not going to happen, compare the children who spend time in those playgrounds with the children who don't, but not as children, like, Sure you can compare injury rates and even death rates as children, but also look at how they do as adults. And you know, the various indicators of health and productivity as adults on the prediction here, which is, which has been made across domains, you know, in many different specific ways with regard to the value of risk and adventure in play in childhood is that those children who are exposed to such things as children are much more functional and productive and healthy. And, frankly, to be capable of avoiding real harm as adults,

**Bret** 1:15:05

right? Which does not mean that it can't go wrong.

**Heather** 1:15:08

Of course it can. And you know how we are, we are lucky or lucky, we have you know, we have our willingness and in fact, insistence on exposing our children to to risk Now, none at first, none at first, right? This is this is not a like, just expose children to risk, there's a, there's a developmental period, and you don't want your newborn to ever think that you don't have their back. You know, and we talked about this either last or you know, a week or two ago. But you know, the older they get, the more capable they get, letting them take more and more risks getting farther and farther away, because they now are secure in the knowledge that they have one or two loving parents and you know, hopefully more kin and more friends around them, who will come for them if they need it. And that allows them to take more and more risks such that when they do step over that threshold into adulthood, they are actually really capable, and really able to determine when they encounter things they've never encountered before, how to assess how to decide what to do next.

**Bret** 1:16:14

I think it also makes sense to just point out that, you know, there's no great way of doing this right, allowing your children to face risks means running the risk that something bad will happen. Yeah. You know, and the way we've managed it is we have rules, right? And, you know, the rules in our house are you're allowed to break your arm, you are not allowed to damage your eyes, your neck, your skull, your back, you are allowed to break an arm or leg,

**Heather** 1:16:43

we don't want your central nervous system are off limits off limits. Yeah.

**Bret** 1:16:46

And you know, if it happens, we'll take care of you. But yeah, you know, but the point is, anything you do that results in an injury near your eye, the question was, were you in danger of violating that rule? You know, because then you're doing something wrong.

**Heather** 1:16:59

And this I mean, this is consistent with not all injuries, the same, not all harm is the same. And, frankly, I mean, this is gonna seem like we're going way off the rails here. But I reminded of the way that the me two went stupid, right? Where was it? Matt Damon, who, I think who you said basically that, frankly, sexual assault is different from being patted on the ass when you don't want to be patted on the ass. And, you know, some people will say, Well, that was sexual assault, like Actually, there are different degrees of of awfulness, and we need to be able to talk about it. And there's different degrees of injury. And so, you know, if anytime your kid falls down and gets a scrape, you run in with your, you know, bucket of first aid kit, and you make sure to slather it with iodine, you make sure to put a bandaid on it, make sure to kiss it and tell them it's all gonna be okay, well, they're gonna think that might have been the worst thing that could ever happen to them. And anytime, anything that happens to them, and someone doesn't come in with their bucket of first aid, they're gonna think they're being mistreated. And yeah, we didn't, we didn't apply very many band aids to our kids growing up. And it's not because they didn't have scrapes and wounds with it. Okay, get back on the bike then. And, you know, sometimes it can feel like, but I just want comfort right now. And sometimes comfort is what's necessary. But as as you started saying, and as now I do, too, it's about the future. You know what happened happened, there's no changing it, you can overlay your story on it, and I can overlay my story on it. But what happened happened? If we can both agree that whatever it was, wasn't good? And would it be better if it didn't happen next time? What can we learn from it? How can we move on, let's go have fun again. But do it while reducing the risk of that thing that just happened doesn't happen again, or reducing the risk that it does happen again,

**Bret** 1:18:48

I will also, just maybe as a final cap on this, there's something about situations that are actually dangerous, that the most important thing about these situations is that you not lose your cool, right, the most important key to getting out of a situation that you might not get out of is staying calm. So you can think carefully about what your actual options are. What is actually available to you that isn't immediately obvious. These things and the problem is if you insulate somebody from harm, they tend to freak out when anything goes wrong, and then they become a hazard to themselves. And, you know, it's like, you know, when we were kids, you know, you and I didn't know each other as kids but growing up in LA, you go to the beach, somebody has to tell you actually that when the when you start getting pulled out by a Riptide it's not an infinite phenomenon, a if you stopped fighting, it would it would give you up at some point and you would be able to swim away whereas if you try to fight it, you'll exhaust yourself. If you swim, parallel to the beach, you can get out of it right? But you know, if you are prone to panic, and the first time you experience a Riptide, you're an adult and nobody has you know, nobody takes an adult aside and says, By the way, there are riptides. And if you get into one, don't panic, it'll give you it'll let you go or swim parallel to the shore. Right? If nobody mentions that to you, because nobody talks that way to adults. And the point is, you don't know what to do, and you may drown. And so, you know, I've, I've been lost in the Amazon with people, and the ability to laugh about it, and to realize, you know, we might actually be out all night could happen, but we'll find our way back, there's a river, we can figure out where which direction from us it is, unfortunately, there are a lot of rivers, but right but but the point is, you know, there is a way out of this, it may not happen immediately. And it may not be comfortable in the meantime. But you know, but

**Heather** 1:20:43

I mean, when you're actually lost in the Amazon, and I have, I was once and only once really felt like I was truly lost, and I was all alone. And I thought I actually, I actually am not sure what to do here. You know, the stakes are very high, right? Because when you're actually deep, you're hundreds of miles from any permanent settlement. And you know, there's one direction there's one field station somewhere near where you left from, but if you really can't figure out which direction it is, from where you are, because you've entered some sort of Bermuda Triangle, sort of felt like in my case, you know, you gotta you got to get exactly that or else you could be walking forever, and you know, probably will never see anyone ever

**Bret** 1:21:22

Well, that's the problem, especially at night, you are in danger. Once you've made one error, it's very easy to compound it because especially you know, everything looks the same, you think it doesn't all look the same until you're off trail and three meters off, and everything looks new and, and

**Heather** 1:21:37

it's amazingly difficult to find trails, like if you've only ever been on trails that are maintained by you know, a weird style organization, right? Then it feels like well, at least as soon as you find the trail, you'll know, it's like no, you can just walk right across the trail off of it and

**Bret** 1:21:51

one and once you've done it, if you think the trail is that way, and you walk that way, and you walk over it, which is especially likely at night, then you don't know whether the trail is yet farther or you need to turn around. And once you've started talking yourself into one of these things or the other, you can just compound the problem dramatically. So the thing is, in that case, it's certainly the panic that gets you to write and exactly start thinking Alright, at least I want to know if I'm walking in circles, I need to mark you know, as I move I need to mark so I at least know how to undo what I just did. Right? So that sort of thing.

**Heather** 1:22:26

Yeah. So the route the moral of this story is carry flagging tape.

**Bret** 1:22:29

Everywhere. Yes. Especially downtown. For sure.

**Heather** 1:22:35

Yeah, no, that actually that's a that's a perfect segue to the last couple of things. And then we can talk a little bit more about them but we've already talked about we have childhood in order to play it's not plays on something we do to fill time and childhood because what else are you going to do childhood actually extends in length in order to create time for plan I felt so this is a terrific book as well. I'm gonna put all these in the show notes, but David f lancy, the anthropology of childhood cherubs, chattel, changelings. So he's an anthropologist who has done as far as I can tell the only sort of compendium of anthropological literature on on childhood and you can see how many book darts I have in that. So this is this is a well loved book. But there's just one. Yeah, one thing in here to 20 He says, and I this is just amazing hypothesis from 1898. From a book called the play of animals, this guy named groups says animals do not play because they are young. They have their youth because they play that's that's early, right like that's, that's just just post Darwin. So that's remarkable. And then just after that in this book, Lancey describes something that Fauci Dian Fossey with the mountain gorillas said about them so in Rwanda is park the ball calm, okay, I can't speak. You can't, it's the volcano Park. The Mohawk mountain gorilla troupe, first habituated by Diane Fossey has several juveniles and play especially after the morning feeding session is almost non stop. So again, as in many of the great apes studies, the animals are being provisioned in order to sort of bring them into a place where they can be observed so that is that they're not entirely in their totally normal wild state. But so they've morning feeding plays almost on stop. One juvenile repeatedly twirled himself in a circle falling down in apparent dizziness, I observed. This is this is fossi I observed youngsters climbing up and down a slender five meter high tree and exaggerating the swing motion as they climbed, dangling from either hand or foot while grasping and waving large leaves they removed. Aside from solo locomotor play on the ground and in the tree. juveniles chased each other in games of tug of tag and tussled in rough and tumble play involving as many as three players at a time. They pull each other off the tree dropped bomb like from the tree on top of their playmates and rustled in a rolling fireball. Trying to distinguish body parts among the entwined animals was possible in the space of 40 minutes, the jungle gym tree they've been using have been utterly destroyed and the surrounding lowbush have been flattened into a lawn. So, you know, this happens in suburbia, and no adults let that happen, right, like you just it's it's not allowed, it's not allowed. But we kids want to be able to do this and in you know, occasionally it's because they want the destruction but usually it's not the destruction is a side effect. And we need to be allowing them into spaces where destruction is allowed to happen, not because we want to encourage destructive tendencies at all, but because we want to encourage rough and tumble play on structured play, you know, falling on each other, you know, all of these things tag and tug of war, and all of these things in which the children themselves are deciding what the rules are, and who gets to play, and how to bring in others and, and how to scold others, and how not to run to the authorities whenever anything goes wrong, or someone's feelings get hurt.

**Bret** 1:25:59

Yeah, and you know, you and I remember how different a world it was in the 70s and early 80s, when kids used to play with, you know, the neighborhood kids would get together and play in the street and the adults didn't necessarily know where they were or you know, when they were going to be back. And this changed as a result of essentially a panic over the abduction of children, which obviously children do get abducted, but they weren't really being abducted in large numbers from their front lawns. You know, it's typically people who have them who abduct them. And

**Heather** 1:26:31

yeah, this is good. This is when it's Canadians main points like we are just we live in a culture of fear, like fear is being used to control us. And for the most part, the thing is that you're scared of the stranger danger isn't a danger,

**Bret** 1:26:42

right? And it's a byproduct of feeling about it. It's a byproduct of the way news, even honorable news collect stories that cause people to watch and so exaggerates the hazards and cause effectively the death of an entire type of play. But what has replaced it is the question, right? To the extent that children instead of going outside and riding their bikes and their skateboards and their whatever else are sitting in front of screens, even if what they're doing has a value. Yeah, it's consumptive rather than productive. Right? Yeah, it is. It is very rare. I mean, there are exceptions, I think, you know, why am I forgetting the name of that computer game in which you build Minecraft? Minecraft is a place where kids can be productive in a way that matters. I don't know what fraction of what goes on in Minecraft is that way, but it's at least possible to do useful stuff that actually teaches you. But to the extent that what you're doing is just consuming content. No, you're actually training yourself to be a consumer rather than training yourself to manage risk. And then there's the question about what happens if your childhood is filled with super cool snippets of video, right? Like amazing stunts and things? Does that make you more likely to be able to do amazing stunts? Or does it make you feel like there's nothing you could possibly do? That would be interesting, because you've seen the most amazing stunts? Right?

**Heather** 1:28:07

I'll never get there. I'm not that good. I couldn't possibly achieve anything like this. Why try?

**Bret** 1:28:12

Right? And, and you know, you get a lot of the joy of it of of going, Wow, that's really cool. Yeah. And it is cool. But but but the point is, it doesn't lead you in the right direction. It doesn't incentivize you, you know, your friend does some cool wheelie on their bike. And you think, yeah, I want to do that too. And maybe you discover the wheelie tree, which is what allows you to learn how to do a wheelie where you hang on to a branch, and yeah, balance your bike. But But the last thing I want to say is that the video games, especially video games, the way they exist now, where you have these massive multiplayer social games, which in the one way are better because they are social. So at least even if kids aren't sitting with each other, they get interaction, and they develop something like a friendship and all of that. Yeah, but the point is it decouples the kind of camaraderie and danger facing that we used to do in the street with our bikes, and whatever, and has put it into a realm where the dangers aren't real, and they probably don't inform you very well about anything in the real world. Right? And they sort of give you the social reinforcement for something that isn't useful. It's wasting your mental capacity for these things. And you know, what, what will that do to adults? Yeah,

**Heather** 1:29:17

well, I'm reminded of, I'm reminded of the gang of kids playing in the streets that I that I did, there was, I don't think it was a consistent part of my childhood, but there was at least several months, when there were a number of kids in my neighborhood, and we played, we played a game that we called Greeks, Greek gods and goddesses. And we each we each chose one of them, and to embody, and we roamed the neighborhood in acting,

**Bret** 1:29:48

not Rome, roamed Alright, now, I just spelled sorry, has been a little pedantic Yeah.

**Heather** 1:29:56

beat you know, being being what we saw, as you know, Perhaps the best but also the worst of of that person. And I don't, I have a little bit of a hard time imagining that everyone else was as into Greek mythology as I was at that point, but, but it was so much fun and so free. And we were also, you know, I grew up in West LA in the 70s and 80s. And, as I remember it anyway, we were certainly allowed to roam freely in across all of the front yards, and I think across a lot of the backyards, too, yeah. And just, you know, do our, in my case, I always, I always chose Athena, I was Athena and I got to I got to do the Athena stuff in the in the neighborhood with all the other boys and girls, and and it was just extraordinary. Sure, it was and you were so you were probably on bikes often,

**Bret** 1:30:47

often on bikes. But yeah, I mean, I remember all the kids in the neighborhood, and it was a nearly constant for much of the year, you know,

**Heather** 1:30:56

yeah, well, that's a benefit, of course, being in Southern California, Southern

**Bret** 1:30:59

California. Right. And, you know, we got into a lot of trouble. And I think almost none of that trouble was at my instigation. But nonetheless, I learned a lot about trouble and why you shouldn't get into most trouble. And you should get into other kinds of trouble and how to tell the difference and all of that. And, you know, again, I hate to be the, you know, the wagging your finger and get off my lawn guy, but but there is a question about whether or not the play you are engaged in, has any utility whatsoever with respect to the adult stuff you're going to be expected to do? Right? And, you know, the bike stuff, the running around the neighborhood, the you know, that stuff had relevance, right? Not exactly, it wasn't precise. But the point is, you know, the same stuff that allows you to navigate the hazards of biking around your neighborhood and jumping off of curbs and leaping over hedges. And all of that is about the physical world and what can happen there.

**Heather** 1:31:56

Yeah, I think I think I'm gonna disagree with you a little bit here, though I don't I think that we specifically do not want to hold play to any such standard. I think we want to encourage unstructured play in which the children choose the thing, and I want it embodied.

**Bret** 1:32:12

I'm not I'm not disagreeing with that. I'm saying that if somebody else has fed you a video game in which the idea is that you're going to, I don't know, pursue goodies of some kind or blow stuff up. The point is, it's not even clear that the lessons in it are inherently true. Right. But I structured physical play, the lessons are inherently physical.

**Heather** 1:32:31

Yeah, I mean, I guess the distinction for me, because I think you and I actually do have a, you know, we aren't just opposed to video games, right? Like, we have actually seen it, you know, in, in many of our former students as well that in some cases, gaming was a way to allow them some social interaction before they felt that they were sort of capable of doing so themselves. And that said, for me, the issue was one of disembodiment, but also one of consumption. And so the, the more, the more interactive, such that you can actually change the rules of the game and decide your own fate and interact with others. And they can also give you feedback on what it is that's going on, the better the game is. And so you know, an entirely passive thing. Is the the least play like, right? And it's and it's the most school I frankly, and it's been it's part of why school is failing the way that it is.

**Bret** 1:33:28

Well, I'm gonna make the same point I always make, which is, I mean, it's actually two different points. One is, it's not the box, it's the business model. Yeah, right, when the idea of the video game is to keep your attention and prevent you from wanting to do anything else, because it's so what you're doing is so visually rewarding, or puts you in situations that are so socially rewarding, whatever, whenever it is, the point is, you've optimized for something that isn't about you, it's for whatever, Corporation made the thing. And the other is that, you know, there's a I hate to make this point about play. But I think it is actually in some sense, the central theme of what we've been talking about is, it's all well and good to have fun when you're playing and you should fun is one of the driving motivations. But the purpose is not entertainment. Right? The purpose is not even recreation. Recreation is the wrong modality. The idea is to usefully upgrade your software. And the reason that play is fun is because if you do it, your software gets upgraded.

**Heather** 1:34:30

Well, it's the distinction and it's one that we make in the book, although not on this particular point. Between the junk version of something and the full version of junk food, junk sex, junk play.

**Bret** 1:34:40

Yep, right. Totally. Junk plays the perfect, perfect description. Yep. Yep.

**Heather** 1:34:44

So one, one last thing. There's a an article from 2001, which you can show briefly here, Zach, called mammalian play training for the unexpected, published in the quarterly review of biology In 2001, as I say, and their their functional hypothesis that they make here is that play enables animals to develop flexible kinematic and emotional responses to unexpected events in which they experienced a sudden loss of control, specifically. And that may not sound all that new agey. It's from 2001. But this article is actually great. It's in quarterly review. So it's, it's a big, it's a good journal, and a very good article. And they make Actually, I didn't write down but I think it's like 24 different precise predictions, this article, which is just a really good sign. So let me say, but I just want to share the first prediction here. But first, they say unless it's a review article, so they, they say plays nearly ubiquitous in all mammalian orders, which suggests either common ancestry for players or similar selective pressures on all of those different orders. And there may be some of that but clearly the most parsimonious explanation is that play is part of being a mammal.

**Bret** 1:35:56

Right? Did you have some someplace further we're going

**Heather** 1:35:58

well, I'm I got a lot of stuff that go for it. Okay. The their major hypothesis, as I said, although this is their description of it, as opposed to in the abstract, is that a major ancestral function of play is to rehearse behavioral sequences in which animals lose full control over their locomotion, position, or sensory spatial input and need to regain those faculties quickly. And further, is sort of a sub hypothesis is that we hypothesize the animals in play, learn how to deal with the emotional aspect of being surprised or temporarily disoriented or disabled. And then they're away. Furthermore, in adverse social situations, emotional overreaction, may lead to undue escalation of conflicts. So that you know that right there, and that is what we were seeing sort of society wide. And then let's see, I've highlighted the first prediction. If I can find it, here we go. prediction from this article, the amount of play experience obtained affects the ability to physically and emotionally handle unexpected events and temporary handicaps. Animals deprived of play, be it by natural circumstances, or artificial manipulation, will be less able to deal with such situations.

**Bret** 1:37:11

So in some ways, if you interface this with the various models in our book, this is a rehearsal for useful application of consciousness that effectively, the conscious mind is navigating situations for which you don't have a pre written program. And that, you know, if you're thrown by such a situation, then you're not going to be in it. You know, basically, you don't have enough practice with your conscious mind in order to deploy it usefully. Yep. And bad things will happen. You could, as we were talking about a few minutes ago, you could take a situation in which something has gone wrong, and panic your way into death or into further lostness in the Amazon or whatever, whatever it is, it happens. And

**Heather** 1:37:55

let me just say, not just panic, your rage necessarily, but anxiety, your way too, I think anxiety is, by many measures, a sort of a lesser form of panic. And that the, the rise of anxiety disorders, is exactly in line with the decline of children being allowed to be children.

**Bret** 1:38:12

Oh, this is this is good. Because if you think about as you put all these models together, the idea is that which is unexpected or to trigger your conscious mind, which needs to have played usefully in order to know what to do when it is triggered. And if you interrupt this process, then the thing that should cause you to go into the secondary mode where you figure out how to usefully get out of your situation, or to make some other value from it, just results in paralysis or behavior or whatever.

**Heather** 1:38:40

Yeah, your your, your nervous system is just constantly triggered, like actually, you're just in high alert all the time, and you can't be calm, and you can't make good decisions and you can't innovate.

**Bret** 1:38:50

Yep. Yeah. does look a bit like what we're seeing

**Heather** 1:38:54

it does. It does. Anything else? I think we're there. All right, well, then, this brings us to the end of another episode of Dark Horse. For those of you watching, rather than just listening, we're going to take that 15 minute break and we'll be back with a live q&a. You can ask submit questions at Dark Horse submissions.com. We do not get to all of them, but we get to many of them. Please consider joining our Patreon We very much appreciate the support. If you're watching on YouTube, consider also watching an odyssey we are still fully demonetised on YouTube. And that is hopefully going to change at some point but we don't know. You can get shirts at store dot Darkhorse podcast.org email, any logistical questions, not questions for the q&a but logistical questions to Darkhorse moderator@gmail.com. Please consider coming over to natural selections.substack.com join for free and you get emails when I post new pieces every Tuesday and subscribe to all four of our Else if if you would on YouTube and honestly Brett Weinstein's main channel and also Dark Horse podcast clips, and like, share, spread widely.

**Bret** 1:40:12

Anything else? achieve excellence,

**Heather** 1:40:15

achieve excellence be good to the ones you love, eat good food and good outside

**Bret** 1:40:20

the well everybody