

## Why Your Mind Works the Way That It Does – Paul Bloom – #1027

Dave Asprey:

You are listening to The Human Upgrade with Dave Asprey. Today's episode is one I'm really excited about doing because we're going to talk about the story of the human mind. Today's guest studies adult and child development and how we make sense of the world, because it turns out that there's all kinds of automated systems in your body that are making sense of the world for you and after they do that, they give you a picture of the world and that picture may be more or less accurate based on a lot of things that are part of your programming.

If you haven't yet ordered Smarter Not Harder, my new book, I go into this in a lot of detail, but this is a different view than you'll find in the new book. Our guest is Paul Bloom, who's a professor of psychology at the University of Toronto and a professor of psychology at Yale University, and he teaches one of the most popular classes there called Intro to Psychology, and that led to his new book called Psych: The Story of the Human Mind. Welcome, Paul, to the show.

Paul Bloom:

Thank you. I'm delighted to be here. Looking forward to talking.

Dave:

Your seventh book. Because you've studied psychology at so many different levels, I feel like you've got some new knowledge and new synthesis of things to share, and one of the things I like about your work is you say that the core of modern psychology is compatible with us having choice and us having morality and us having responsibility.

Tell me about that.

Paul:

Yeah, many people see a big tension between them and they're not being foolish to see it. The psychology I believe in and I practice and I talk about is reductionistic. It reduces ultimately our mental processes to the activities of neurons. It's evolutionary, it sees things in terms of our evolution as a species. It's causal, it thinks that our behavior and our thoughts aren't due to magic, they're due to the same principles that underlie the physical world.

So, you're not nuts to say, "Hey, this clashes with religion. It clashes with spiritual beliefs. It clashes with the common sense notion that we choose what we want to choose and that we have some free will." And I try to argue through the book that the scientific view of the mind and the humanistic view of people, you don't have to choose. For instance, I have a chapter on rationality where I argue that we are very smart, creative, rational beings, and psychology is the story of that, of how we come to be that way. Psychology doesn't dismiss our abilities. It hopes to explain them and even helps us to appreciate them.

Dave:

I feel like there's two sides of reality, this is an old Facebook or blog post that I made, and there's one group of people who believe we're meat robots and they're hyper

rational, and these are the computer science people, that is my background. So, computer science people who everything is rational and the emotional is less valuable and the experiential is almost noise. And then on the other side of it, you have the yoga teacher where everything is woo, but you can't make it to class on time. And I think we all know people who are in the land of the lotus eaters or the land of the meat robots.

Where is psychology on that spectrum?

Paul:

Yeah, this isn't going to surprise you, but I reject that dichotomy. It's a hell of a choice to have to make. I do think, Marvin Minsky once described us as machines made of meat, and it's true. Psychology says that, we are evolved animals and basically everything we hold dear, all of our conscious experience, our loves, our hates, it's just the functioning of our very physical brain. Modern psychology rejects the notion of an immaterial soul and so do I.

But so much of my book and so much of my thinking and so much that I feel is actively engaged in the problem of how do emotions work? Why do we fall in love? Where does hatred come from? What goes on when you're in a meditative state? What goes on when you're in a state of flow? And so I feel that modern psychology has fully embraced the emotional, the feeling side, even the spiritual side of us, trying to explain that as the product of machinery made of meat.

Dave:

So, you reject the notion of a soul.

Paul:

I reject the notion of a Cartesian soul, a mystical thing floating around that makes our decisions and somehow connects to our brain. There's softer notions of a soul where soul just means ourselves, our ideas, our minds, our conscious experience, and that's compatible with psychology. But I reject a hardcore notion, dualism, that all of the important stuff doesn't happen inside the head. It happens somewhere else. Yeah, I reject that.

Dave:

So, for you, consciousness lives entirely inside the brain. What do you think about past lives?

Paul:

I haven't given it much study, but my strong bias, my priors, as they say, as these rational people say, are that it's a bunch of hokum.

Dave:

It's a bunch of hokum. Have you seen the papers, and I'm not trying to convince you otherwise, I'm just probing what you understand, I have come to the point where I

believe that I am simultaneously a rational meat robot and simultaneously an irrational being and that they both live in the same existence...

Paul:

And that much I can sign on to, yeah.

Dave:

Okay. You would sign onto that?

Paul:

Yeah.

Dave:

If you believe, consciously you choose to believe in past lives, whether or not you can prove they exist, you'll be less afraid of death and then you'll make better decisions. And if you're right that there are past lives, then you win. And if you're wrong and you die, then you won't know. So, the only rational thing you could do to live a better life now would be to choose to believe in past lives.

Paul:

A sort of passed Pascal's wager, Pascal's famous wager was he's going to believe in God because if he's right, God will reward him with heaven, and if he's wrong, well, no biggie. In some way I could take that as a psychological theory. People believe in past lives because they don't want to die.

Dave:

Well, it just makes you less fearful in this life so you can be more dangerous and make good decisions even if there's some risk.

Paul:

Yeah. So, that is not a claim about whether or not past lives exist, people believe in heaven for the same reason. And people believe in going to a spirit world for the same reason. Afterlife beliefs I think are very plausibly motivated by a desire to fear, a fear of death, and a perfectly reasonable theory. I guess I would push back as a psychologist on your notion that fear is bad. Fear is a wonderfully adaptive, important thing.

Dave:

Fear is useful. It keeps you from getting eaten by tigers. Unfortunately it also steps up and it gets more attention than is merited by the actual circumstances. So, fear of public speaking, for example, that's not an adaptive fear. It's just a fear that isn't helping you at all, right?

Paul:

I think it's a deeply adaptive fear. We're social animals, right? And so it's critical that our tribe think well of us. Fear of public speaking, you put yourself out there, you make an ass of yourself and you'll pay the consequences. So, I totally agree, I understand where you're what you're going with this, and I don't mean to be a jerk and just picky.

Dave:

You're not a jerk, this is fun.

Paul:

Because you're right, one could have a crippling fear of public speaking and live as a hermit and give up opportunity. One could have a terrible fear of death and never drive in a car, never talked to a stranger. That'd be horrible. But the optimal amount of fear is not zero. What would you think of somebody who speaks to an enormous crowd of people and has no anxiety about it? Totally calm. That person would under prepare, would not take it seriously, and would probably mess up. Who would want a child who is unafraid of harm? The kid would go right into a highway. I'm fine. I don't care if I die.

Dave:

It's interesting, I don't experience any measurable anxiety when I go on stage, even in front of a big audience.

Paul:

Was that always so?

Dave:

No, when I first started, I don't even know what I said the first time I talked to a thousand people, I was terrified. So, I had to learn how to do that, and in order to enter a certain state.

Paul:

That's the perfect story of fear, which is your fear was there when you needed it to get you started. I was terrified the first time I drove a car.

Dave:

Yeah, I think most people are.

Paul:

But now if I step in a car and start driving, I'm terrified, that's pathological.

Dave:

And it's that when fear becomes pathological or a method for programming people, and it's neat to talk about fear with someone who's really studied psychology because it

feels like we've had a lot of fear maybe of amplifying negative effects, and it seems like that's what fear does. It makes our bodies automatically worry more about something than is merited, like fear of starvation. I'm going to starve if I don't eat today. But you actually have two or three months before you're really going to starve if you stop eating right now. But the feeling of fear is so much not reality based. How do we deal with that amplification of fear?

Paul:

Well, I'll first step back and make a point, which is, I make this in my book, I talk about the evolutionary psychologist, Randolph Nesse, and he points out that there's an optimal level, these things have evolved. There's an optimal level of fear and anxiety and lust and happiness and sadness that are calibrated to the environment. And psychologists, and you and me actually, are interested in cases of too much fear, too much anxiety. And he says that's what brings you into a psychiatrist's office. That's what makes you see a psychologist, makes you read books. But what about people who have too little fear? Well, those people don't end up in shrink's offices. They end up in morgues and prisons.

Dave:

I was going to say, yeah.

Paul:

So, there needs to be a calibrate. Now, what do you do if you're too anxious and you have too much fear? Well, I'm not a clinician, I'm not a clinical psychologist, but I imagine that there's certainly medication for it that lowers your base anxiety. And then there's talk therapy. There's cognitive behavioral therapies, about a thousand types, including what often gets recommended by people who aren't professional psychologists, [inaudible 00:11:35] real wisdom for techniques to alleviate your fear and so on.

Dave:

I've had great results from doing heart rate variability training, where I learned how to sense my body's fear response and how to consciously turn it off, like playing whack-a-mole with fear.

Paul:

Yeah, some sort of biofeedback may have some success, that's a great idea.

Dave:

So, what would you say psychology has figured out about consciousness that is consistent across everything? What are the universal truths of psychology?

Paul:

Gosh, I don't know where to begin. One universal truth about psychology is the malleability of memory. It relates to the idea of storytelling. And some people still walk around thinking that we're perfect recorders of the world, like holding up my iPhone and just recording everything and it all ends up in this hard drive in our head. And if you hypnotize me or I do regression or in my dreams, I could capture any moment of my life at any time. It's all there. I just can't access it. And psychology, I think, has proven that this is utterly wrong.

That memory is instead a reconstruction, it's an attempt. We have these fragmentary bits of information and then we embellish it and so on. We know that from studies.

There's been studies, this is a while now, but after the 9/11 attacks, a bunch of intrepid psychologists, including some friends of mine, the next day said, "Where were you when you heard the news?" And people told them, "I was at home." And then they went after these people many years later and said, "Tell me your 9/11 story." And the stories were totally different.

Dave:

Really?

Paul:

Yes.

Dave:

That's amazing.

Paul:

But for such an event it's likely to be different because here's what happens. People, you end up telling ... afterwards that, "Where were you when you heard when the plane hit the towers?" You tell me the story, but you're telling it to me, you embellish, you make it more simple, you take away annoying facts and everything. You tell it again. Maybe you hear your partner tell it a few times and it's a different story. And then by the time, 10 years later, because memory is a reconstruction, you're remembering not what happened, but the stories. And so many find, if you go back and take an objective event, we have film of it and you ask people their memories, it's totally different. And these are not small things. People have confessed to crimes that they never... Confusingly believe remembering that they committed them.

Dave:

Right. I came across a couple of studies that I reference in my new book, I found two studies that showed that the way we actually remember things is that the emotion is the key. So, we actually think of the emotion and we're using that to through our stories, to bring up the story that matches the emotion, versus a facts based search through the brain. What do you think of that mindset? Does that jive with what you've seen about consciousness?

Paul:

It sounds right. There's some research suggesting that events that correspond to intense emotion often get incredibly misremembered because they aren't stored properly in the first place. So, that extreme emotion damages the storage system and memories. And this is one theory of what goes on in post-traumatic stress disorder.

Dave:

Because you go to the amygdala instead of the prefrontal cortex.

Paul:

Exactly right, you go to the wrong part. Basically memories end up in the wrong part of the brain. And the idea is that they're not fully timestamped and they're not spatially stamped, leading these memories to emerge in a free floating way as, not hallucinations, but as a constant feeling of dread, for instance. But, yeah, emotions and memory are intimately related in pretty much the way you're talking about.

Dave:

I want to know more about our perception of time, because I've had a problem forever. I don't have a timestamp on almost any of my memories. I couldn't tell you what I did last week versus a month ago versus even six months ago. It's all in the before time. And I know what I'm doing now and I know what's coming up in a big thing in the future, but I feel like I am either damaged or just very different than normal people because time is just not that big of a thing for me. What's going on with that?

Paul:

So, you asked what psychology learned about what's universal to us, and we could talk more about that. But psychology also has made some discoveries of differences.

You asked what psychology learned about what's universal to us, and we could talk more about that, but psychology also has made some discoveries of differences. And there's a lot of differences in conscious experience that we've ignored, and now we're coming to grips with them. Some men are colorblind, so they experience the world differently than others. Some people love cilantro, to some people it tastes like soap. But those are superficial compared to the deeper ones, and you're putting your finger on a deeper one, which is our experience of time and experience of the past differs radically. I don't think anything's wrong with you. I think you're just one kind of person who doesn't timestamp things that seriously.

Another difference, very related to this, is some people have a narrative of their life. It's rags to riches, overcoming adversity, it's a constant stream of failures, it's whatever.

Others don't. You say to them, "Tell me the story of your life." And they say, "What are you talking about? It's one damn thing after another." Other differences are some people... Do you have vivid mental imagery?

Dave:

Yeah, I can do that, easily. I think in pictures for the most part.

Paul:

So, some people have vivid mental imagery, very powerful, you get these cases of synesthesia too, where the vision and tastes are wired up. There's a guy who, when he ate, he has colors associated with it, and he couldn't read the paper while he was eating because the letters would evoke sensations that got in the way of his food. But there's some people who have no mental imagery at all. There's nothing.

Dave:

What do they have?

Paul:

They could think, they could do it rationally, but they can't call anything to their mind. Isn't that incredible?

Dave:

And they function in society, that is so mind boggling.

Paul:

Not only do they function in society, but you have these people who are 40 years old and they say, "You know, I always thought when somebody talked about thinking of something or imagining a face, they were just using a metaphor, and to my shock, I've spoken to some friends and I discovered they actually have pictures in their heads." Who could have imagined?

Dave:

Do you have pictures in your head?

Paul:

Reasonably enough. I think I'm in the middle range.

Dave:

In the middle?

Paul:

And I also have a voice in my head and some people don't. I don't mean the schizophrenic voice in my head, but I could narrate something or if I'm thinking of what to say, I'll run it over in my head. Other people, it's silent, silent as a tomb.

Dave:

I did have a voice in my head for a long time and it was actually pretty critical and fearful, and as I did whatever personal development practice, there was a lot of neurofeedback and meditation and visiting monasteries and whatever, I don't have a voice in my head anymore. It went away. It shut up. Is that a common thing where people develop a voice in their head that's not schizophrenic or that they modify it in some way as they go through psychological treatments?

Paul:

I think the experience of the voice in your head does alter a lot through your lifespan and maybe through different maybe treatments and so on. You hear more about cases which encourage it, which you develop an internal narrator. And you're right. Sometimes it could be, you could be walking around, you hear, "You loser."

Dave:

Yeah, I had a mean little bitch in there, and I dealt with that.

Paul:

There's a famous philosopher, Jerry Fodor, a brilliant philosopher of the mind who passed away sadly, and he was once at a conference, he was talking, he says he has a voice in his head when he works, and it goes, "Go, Jerry, you can do it, Jerry, go ahead, Jerry," this is a very encouraging voice.

Dave:

A beneficial one.

Paul:

Yeah, that's right.

Dave:

Tell me about the most revolutionary finding about consciousness in the last 20 years.

Paul:

I'll tell you something which isn't theoretically that interesting, but it's practically of enormous significance, and it just blew my mind when I heard about it, which is there's these people who move into comas and they're in so called locked in syndrome, where they can't speak, they can't move.

Dave:

Like politicians?

Paul:

They can speak.

Dave:

I'm sorry.

Paul:

They can speak. And these are tragic cases, and people tell you, should we pull the plug on them? And so on. And a bunch of psychologists I think from Europe, different countries in Europe, used the methods of neuroscience to see whether there was somebody in there, and what they did was, I'm going to get this slightly wrong because I forget the details, but they put the people in an FMRI scanner, which lights up when different parts of the brain are active more or less, and they got them to do one of two things. They said to them, for yes, think about swinging a tennis racket. Now, thinking about swinging a tennis racket would occupy parts of the motor cortex, it would light up and you can see that you're thinking about swinging a tennis racket.

For no, and I forget exactly what it was but it was something like, think about a musical tune. That's a different part of the brain. And you might have imagined the person who did the brain scan just had nothing going on. And for some people it does, but for some people they start asking questions. So, you say, do you have any brothers? And then if it's, yes, the tennis racket part of the brain lights up. And they have conversations of these people trapped in their mind. And, my God, there's somebody in there. There's one very moving story, it was reported in a New Yorker article, where they asked the person a series of 30 questions and they got them all right, so plainly there's somebody answering there. And then they asked the person, do you want to die? And then it just shut out. The person didn't answer. [inaudible 00:21:44] thinking it over, struggling with that. And so the consciousness which seems to be totally gone can be revealed through a method of neuroscience.

I'll tell you something else, this is another finding which is also practical, which is very old school, but it's always stuck with me. It's the spotlight effect. And the spotlight effect, by a psychologist, Tom Golovich, basically in the first experiment to do it, they get people to wear T-shirts, and this has been a while ago, so the T-shirts either had a respected person on it, like Martin Luther King Jr., or somebody who was not respected, and in this case, they had Barry Manilow who was very uncool at the time. And then you'd get people to walk into a room and then later on you ask the people, how many people noticed your T-shirt?

And then you'd go into the room and you say, did you notice this person's T-shirt? And the finding, this has been done a hundred ways by now, is we have a spotlight effect. We think everybody notices us, but they usually don't. We're thinking about ourselves, we fail to make the inference that other people are thinking about themselves, not ourself. And as Golovich says, this is very liberating. It's very liberating to know that when I discover at the end of day my shirt was misbuttoned or I had shaving cream on my ear, or when I said something incredibly stupid, that it matters a lot to me, it feels so salient, like the whole world knows. But most people are worried about their own ear, their own shirt, their own stupid thing. And I find that liberating.

Dave:

How do adults learn that everyone isn't thinking about them all the time? Because it feels like all of us worry about that way more than we should.

Paul:

Yeah, some of us never do. It's very hard to. I know intellectually that it's not as big a deal as it seems to me, but I just know it intellectually. In my gut I feel like I'm the center of attention, particularly when I screw up.

Dave:

Isn't that just fear?

Paul:

Well, it leads to fear or anxiety or just sadness sometimes. But the cause of it is the spotlight effect. There's something else. The story of your son is a great story, and there's another phenomena, and maybe I guess this is the more theoretically interesting one, called change blindness. There's a wonderful demo, and you can go see this on YouTube, where there's a bunch of students who are wearing white T-shirts and black T-shirts and they're passing basketballs back and forth. And people have said, watch the basketballs and count how many throws there are. And at the end people say, I counted, there's 15. But in the middle of the video, they have somebody dressed up in a gorilla suit walk through, pound his chest and then walk out. Most people don't see the gorilla. And when we're focusing on something, the whole world, we don't notice changes.

If suddenly I dip down and then came right back up and I'm wearing a different shirt, most likely you wouldn't notice. There's these lovely studies where they have people meet other people on the street and ask for directions. Then they have two people carrying a door and they interject between them and then they switch people, from a man to a woman, from somebody who's white to somebody who's Black, and the person giving the directions doesn't notice. When you give directions to a person, you don't record anything. So, we're oblivious to so much of what goes on. Your son had so much latitude, nobody was noticing. He could have walked around the corner and came back dressed up in an entirely different way and nobody would notice.

Dave:

Do you ever worry that people will use this understanding of psychology as a bad actor? For instance, hey, everyone, let's look at the latest drama in the news while they're changing, there's big gorillas stomping through changing society and things like that?

Paul:

So, now let's be humble about psychology, which is many of our findings aren't powerful enough for me to worry about people using them for evil because they're the kind of things you find in a laboratory. There are some things. So, there's a lot of psychology of persuasion.

Dave:

Right, Robert Cialdini, he's been on the show.

Paul:

Yeah, Cialdini is one of the masters of that, and Cialdini uses his powers for good. He has all these ways to talk about work for the environment and help other people and everything. But of course, there's nothing stopping unscrupulous actors from flipping it around and using them for evil. And you mentioned politicians before, well, good politicians, smart politicians use these techniques. And if they're good morally or bad morally, they'll use the same techniques. So, yeah, it is a worry.

Dave:

Now, we're talking about all these unconscious things and one of the guys you write about in your book is BF Skinner and the idea of reinforcement and punishment. How similar are we to being rats in a cage, as the famous song goes?

Paul:

So, I don't treat Skinner gently. He had this weird idea, which seemed very weird at the time, which is you can't talk about mental processes. Everything we were talking about for the whole last little while, he'd say, it's just nonsense, not science, just nonsense.

And of course he's wrong. We have consciousness, we have emotions, we have memory, we have perception and so on. But, to defend Skinner, he came up with some very powerful techniques that are still used today for conditioning animals, for dealing with people who are non-verbal in some way. And some of these techniques are very powerful. My favorite example where we really are rats in a cage is slot machines.

So, Skinner pointed out, maybe discovered, what he called a partial reinforcement effect, which is if when you do something I reinforce you every time, for an animal that's giving you a food pellet, for a person it may be giving you money or just saying, "That's fantastic." But if I stop, suddenly just stop, cut you off cold, your behavior will stop pretty quickly. You say, it's not working for me anymore, [inaudible 00:27:55] stop. But suppose I reinforce you randomly every once in a while and then I stop. Well, you keep trying and trying. Now, slot machines work under the principle of partial reinforcement. They don't pay off every time, of course. They pay off in a schedule that is savagely calibrated to make you keep on going.

Dave:

Right, like social media algorithms.

Paul:

And if it's not slot machines, it's this freaking thing, where I've took Facebook off my phone, I stopped Twitter, I took Facebook off my phone. I wake up two in the morning, I'm a little bit up, so I'd look at Facebook, and they've got videos. And these videos have been chosen to be exactly the sort of videos that I really like. Old Key and Peele

sketches, just stuff I like, clips from movies I like. And then I was like, an hour goes by, because I keep scrolling up and up and up and up, and sometimes I don't find it. I keep trying and trying and trying and then boom, I get something. And these techniques capture the low level processes in us. And you talked about psychology for evil, well, there you go.

Dave:

It's amazing what you can do when you dial those algorithms in, and there's a second level that social media companies are doing now. People who create content, even like me, if you follow the algorithms, you can actually make a ton of money, it's something that I would never do, but reaction videos, where people open some product and make a stupid face. The algorithms so heavily reward content creators who make these dumb things that they'll do a dozen in a day, even though they aren't really useful content, but they're hitting the slot machine.

Because I did that one and I got a million views and I made 70 bucks on clicks or something. I don't know, that's not my model for how I do this. I don't know how the payments work. But it's funny because they're making slot machines and they're making slot machines using slot machine type rewards because sometimes they make one that works really well and sometimes they don't. So, it's a machine that's feeding itself at this point, all by manipulating people at one level or another. It's creepy.

Paul:

That's right. So, I would blame Skinner for this, but to say I blame him means he was onto something about human behavior.

Dave:

Now, what do you think all of the social isolation of the last couple of years, what effect is that likely to have for young children on society? What are they going to be like 10 and 20 years from now if you spent two years of your early development years without the normal stimulus you'd have?

Paul:

It's a really good question. I think there's been damage of at least two types. One type is what you're talking about, the social isolation might affect different kids at different ages. There's young kids who have not gotten used to seeing people without masks, for strangers. And then there's adolescents who, during a time at their life which is supposed to be heavily socializing, might have existed only on Zoom. And I think that's really rough. Then the second thing is for children of a certain age, there's learning gap problems where there's some studies suggesting that they didn't go to school basically, and online school was a disaster, that they suffered from serious limits in reading and math, which might percolate up. So, that's all bad news. And a lot of bad news is just that it was really hard for kids. The good news is I'm a big champion of resilience and I think we're just a lot tougher than people give us credit for.

But I don't know. I don't know how the pandemic has changed us as people. I don't know. I know some people, so this is just anecdote, I don't know how broad it is, who have become agoraphobic. I notice people who spent a lot of time in her houses, I know an older woman who spent a lot of her house, and now she's not leaving. It's not like she can't leave the house, but she's comfortable in her house. She likes communicating over Zoom. She's nervous about getting sick from somebody else. And I think people, particularly people with various preexisting mental problems, the isolation could not have been good for them. And I don't know, I don't think we fully have an understanding of what was successful or not. I've read some deep analyses of American states that did lockdowns versus those that didn't and so on, and the conclusion from these analyses is it's kind of hard to tell what works best.

Dave:

Yeah. There's a different kind of crisis you talk about in your book that I really appreciated, and it's the replication crisis, and it's happening in psychology. It's happening in lots of fields, like Alzheimer's research, like depression, all these things where someone makes a study, everyone believes it, and for 20 years we follow that path until someone's like, "That original study was BS." Tell me about what's going on in psychology with the replication crisis.

Paul:

So, it hit psychology really hard because so many of our most significant findings fail to replicate. And you might think it's just bad luck or the replication wasn't done well. But in addition, it turns out that there's a reason why, which is that we were doing our science wrong. We were doing it very opportunistically. There's a million specific problems. The main problem is, basically, if you do enough statistical analyses, you can get a result even if there's nothing really going on.

Dave:

The old if you torture the data enough, it will tell, quote.

Paul:

Yes, exactly. So much of psychology was firing an arrow and then drawing bullseye after it hit. So, we've gotten better, we've cleaned up our statistical act, we're doing better experiments now, we're preregistering them, which means that you say ahead of time what analyses you're going to do. To address a different problem, we're now much more serious about testing a wider and more diverse range of subjects. Somebody once calculated that a randomly chosen American college undergraduate is over 4,000 times more likely to be in a psychology study than anybody from anywhere else outside of America.

Dave:

Because they're free Guinea pigs.

Paul:

They're free, they'll do anything for beer money and a couple of some course credits. And now we're doing better. So, a lot of research is-

Dave:

We are doing better, and it's true in all medical studies, in psychology and everything else, the 20 year old white male might not be a good model for the 50 year old Chinese woman. There's some core stuff, cellular level, but the psychology, the Eriksonian stages of adult development, all that stuff, we missed that. So, we're fixing that.

Paul:

That's right. I'll give you an example of where it made a difference, exactly what you're talking about. There's a lot of studies showing, maybe not surprisingly, that college undergraduates have much better memories than elderly people. But somebody looked at this, and they do, but somebody looked at this and found out, well, you're testing the college undergraduates in the late afternoon when they're free to test it. Then you bring in elderly people in late afternoon. But the elderly people typically do best in the early morning when college undergraduates are still sleeping off their hangovers,.

Dave:

Circadian biology is tied to aging, right?

Paul:

So, when you make it a bit more fair, there's still a difference, but it's not as radical. And this is an example of how a failure to attend to the diverse needs of different communities leads you to wrong conclusion.

Dave:

It makes a lot of sense that if you test people at their peak for who they are, and there's probably individual variations... I was very much an above the neck guy early in my career, and I am a computer hacker, computer science, artificial intelligence network kind of thinker, because that's my tech background. And when I got into neuroscience and started a neuroscience company that does feedback and all, I became more and more aware that it feels like many fear and anxiety signals are coming from outside the brain but inside the body. And it's almost hard to differentiate. And I've asked different experts this question of what percentage of anxiety is coming from our physical body versus from our thoughts. What would you say for the average person, what percentage of anxiety is physical versus thinking of stuff?

Paul:

I don't think it's the kind of answer that gets a percentage to it. Because it's sort of a mix. It's like how much of your height as a result of your genes and your environment.

Dave:

Versus eating enough animal protein or something, right.

Paul:

Yeah. It just isn't the sort of thing that could be seen as math, instead of an interaction. I would agree that there's some times where your anxiety is definitely your physical body below the neck. The simplest case is when you're in physical pain. Your leg is aching, that's not going to do much for your state of mind. And then the other simplest case is your triple espresso, that'll do it, or your double of Jameson, that'll also help the anxiety in a different level. Can I ask you a question? Just because of your background and everything.

Dave:

Of course.

Paul:

What do you think the success or failure, whatever it is, of things like ChatGPT, what do you think that bears upon your picture of the mind?

Dave:

I'm so happy you asked me that. I wanted to find out what you thought it was going to do to people's consciousness and to us as a society, so I'm going to get your opinion on that, but you're asking me about-

Paul:

I'm asking you first.

Dave:

Why ChatGPT works, or?

Paul:

No.

Dave:

Tell me a little bit more.

Paul:

I'm asking you the same question you're going to ask me, which is what difference do you think it will make?

Dave:

I think it's absolutely going to trash human society and I'm also a fan of it on some levels. But the reason is that it's based entirely on the past. So, what the past has is all

of the errors of reproducibility are in the system and it doesn't know that that's bad data. We also have a huge amount of manipulated scientific research that, to the point, companies have been fined tens of billions of dollars for fake pharma studies that are in the system as if they are fact. So, when someone replaces Google as a search engine, which is happening right now, you'll just go to ChatGPT and say, tell me this, and it'll summarize all of knowledge in new language for you. And you say tell it to me like I'm a fifth grader who likes Nickelodeon, and it'll use Nickelodeon. It's great if you want to absorb, but you're absorbing all of the garbage without it being labeled as garbage and it's not cited, so you can even go back and find it.

Paul:

And there's a related problem, which is, the way somebody puts it, what does the ChatGPT want? And basically what it wants to do is make you happy. So, what it does inevitably, shockingly, is it'll make up references. I've seen this. A friend of mine freaked out. He said, "I asked for citations on this work, and it produced these amazing citations." I went, "How did I not know about these things?" And the answer was because they don't exist, it just makes stuff up.

Dave:

Whoa. That's crazy. I did not know that. So, it makes up a study that doesn't exist to make you happy.

Paul:

Ask it for a study on something you know a lot about and suggest what is the study that shows this? And it will make them up. What about the social consequences? I guess the standard argument is it's going to put a lot of people out of work. And there's an interesting paradox, which we always thought AI was going to put out of work plumbers or farmers or electricians, we've got robots to do these things. But it seems to be actually eating away at the knowledge people, writers, for instance.

Dave:

I had ChatGPT draft a legal agreement for me that was 90% done, so attorneys are going down.

Paul:

You still need an attorney for that last 10% to look it over.

Dave:

You do, mostly because they have protective licensing and things around that.

Paul:

Yes, this is true.

Dave:

So, there's a lot of protectionism built in and I think we'll see more of that where ChatGPT may have created it, but you still have to have my stamp of approval because I got a law passed or my insurance company made it happen or something. So, there's that, but the social consequences I think are also going to be toxic because the terrible process of learning the way we teach people is write a paper. And, okay, so what do all high school students do? They go find a bunch of references, then they rewrite them in slightly different language and string them together. That's actually what you do. And that's what ChatGPT does. And by doing that, you accidentally learn how to think if you're lucky and you probably learn how to structure sentences if you had good teachers.

And I'm a New York Times bestselling author. I'm really good at writing after a lot of practice, I've written 3000 articles and all this other stuff. But the thinking that led to writing those articles was the value. The reason I write books is because it structures and crystallizes new knowledge in my mind and it's knowledge that I believe is worthy, and apparently my readers do too because they do me the honor of reading the books or at least buying them. I don't know how many people read them after they buy them, but I hope they do, and you hope as well with your new book. So, what I think is going to happen is all of the learning that kids would get from doing it the hard way will go away.

The benefit of it will be that a lot of the drudgery goes away, but societally what we're going to find is the people who own ChatGPT or its other competitors, there's a couple others out there from other governments and other companies, they'll do exactly the same thing that social media companies have done. They're going to tune the algorithm to make you do what you want to do. So, I think there's a great deal of cognitive liberty that it will dissolve as a result of this because you'll grow up and you're like, well, if I need an answer, I just do this, and it's kind of the big daddy in the sky. It's just the big daddy that was programmed with a lot of garbage data and is being manipulated by a company who doesn't have your interests at heart, so that that's a bit scary.

Paul:

It is. There's different ways it could go. You could imagine more bespoke AIs where a market will come up where an AI is really built in for a lot of accuracy. For these reasons, you'd be reluctant to use it for certain purposes, there's a lot of people like you. Market forces are sometimes wise. And so you can imagine other AIs being created to solve the problems that you're raising.

Dave:

I believe that it's possible to have an AI running on my computer that acts as a cognitive firewall, that I can say, well, find anything that's designed to manipulate my consciousness, delete that, extract the facts from it and present the facts in bullet points. I want that as my firewall. And right now there isn't a company making it. It is my great hope that ChatGPT, OpenAI, or someone else will give me control of the algorithm fully. I would pay a lot of money for that. And so then I can filter my reality. So, right now

I believe that all of us have our own independent lens on reality. This is based on the book *The Case Against Reality*, which says that that nature optimizes a species to only sense things in the environment that help it survive for fitness of purpose.

So, we ignore C-rays and infrared because they're not that useful for us to be able to see otherwise we'd be able to see them, things like that. And it even goes back to the blindness, where we see the basketballs, but we don't see the gorilla, so I would love to extend my ability to filter reality, to have an AI do that for me, which would allow me to really just distill the most juiciest bits of reality so I could have more juicy bits. I guess that would be cognitive cocaine from an information perspective. It's like the most distilled, most powerful stuff. But wouldn't that be amazing? You could say, hey, tell me what matters in this paper. And it just summarizes the paper in a way where you got everything you needed and nothing you didn't want.

Paul:

That would be would be great. Neal Stephenson, in his newest novel, has a future where the social media is crafted to exploit your inner desires and everything, so it's just perfectly optimized to keep you stuck in all the time. But the affluent hire people and then AIs to curate things and exactly what you're saying so that not only do you get the cognitive cocaine of pure distilled truth, as much as that's possible, but also you're not exploited or manipulated. But if you can't afford it, you're screwed. I'll tell you though, one thing that I would want is a lot more selfish and less high minded, I want an AI to go through all my email and all my, God knows, a million email responses, learn my voice and what I want, and then when I get an email, boop, draft the perfect response I would write, I'll look it over and then send it. It could save me so much time. The perfect assistant.

Dave:

Wouldn't it be amazing? Was it *Dodge In Hell*, is that the one?

Paul:

That's it, *Dodge In Hell*, three words.

Dave:

Amazing book. Guys, if you're listening right now and you want just an amazing view of virtual reality and a future like that, it's called *Fall*; or, *Dodge in Hell*, and it is one of the most... His books have been a series of thought-provoking books for years and he shaped society in a way that a lot of people don't know, but that is an amazing look at exactly what we're talking about. Wow, I love it that you intuited that. If you could take all of your work or maybe even do a Neal Stephenson kind of thing, upload your consciousness to an AI, would it be alive?

Paul:

No. I'm a materialist in that I think that this guy right here is me. I could duplicate myself maybe. And in fact, actually I want to change my answer a little bit. It may well be alive, working on this computer, but it wouldn't be me.

Dave:

If I had an exact copy of your meat hardware, would it be you?

Paul:

If you make an exact copy of my desk, it wouldn't be my desk. It'd be a different desk. If you make an exact copy of me, and an identical twin is kind of that, it's not me. It's a copy of me. This is a very physicalist, materialist thing. It's true, from a spiritual point of view, you can make the argument I'm making, that only this is my brain. A different brain is not my brain.

Dave:

I think you have a really good point there. Now, let's talk about suffering, because this is something that people seem to do by default, and Buddhism has a perspective on it, different religions have a perspective on it. But why do you think that some people suffer more than others?

Paul:

I'm very interested in suffering. My previous book was *The Sweet Spot*, on why we choose to suffer. And it has a lot of answers, but maybe the answer that's most interesting to you given your interest is I think suffering, chosen suffering, is part and parcel of a search for a meaningful life, which is if you have real goals, real, complicated, purposeful goals, they're going to involve some sort of suffering. Physical suffering, emotional suffering, difficulty. And in that way, you can't have the one without the other. You could try to be a pure hedonist and that would involve less suffering, but to have a meaningful life, suffering is part and parcel.

Dave:

There's also a lot of things that people do to choose at least short-term suffering or short-term pain that seems to improve our quality of life the rest of the time, and I'm talking about cold therapy, which I've been a proponent of for 15 years now. You get in a really miserable cold ice bath and you don't feel great for a few minutes, but then when you're done you feel better, and it turns out throughout history, there's a bunch of pain involved practices. Some of them pretty extreme, like the sun dancers where they're piercing themselves with hooks, but we seem like to hurt ourselves for brief periods of time because it does something good for us later. What's the psychology behind that?

Paul:

So, there's a lot of psychology behind that. In some cases it's just instrumental. So, I want to keep my job, so I take the 8:15 to the city and I don't really enjoy it. I wake up

early, but I want to keep my... So, that's the obvious sort. So much of the suffering that we choose to do are because, well, I'm writing up an exam right now. I'm not sure I'd call it suffering, but it's no fun. But the students need an exam, I got to do this. The more interesting cases are when we really get something that is suffering in and of itself, it's not instrumental in that way. I'll give you two, three stories very quickly. One is signaling, which is sometimes we suffer to show others how tough we are, or alternately as a cry for help. In a religious case, often we suffer in the context of religious ritual to show others how devout we are. That's signaling.

A second one is contrast, where my dad told me this joke a long time ago, I never forgot it, which was about the guy who's banging his head against a lamppost, and when asked why he's doing it, he says, "It feels so good when I stop." And someone is suffering is like that. You fill your mouth with hot curry and you drink a beer and the shock of the relief, you go into a hot bath and then it cools. Finnish saunas, you're roasting yourself, you feel your body like you're char broiling, and then you dive into the cool lake and the contrast is wonderful. And the third thing, and this connects to your interest in consciousness and brings us back, is sometimes through suffering we lose ourselves. That little voice in our head, which sometimes is mean to us, the fact that we see everybody, the spotlight effect and all that, in high intensity exercise, or when you're being whipped, that stuff goes away.

Dave:

I was going to ask you about that. So, what's your take on BDSM?

Paul:

I think BDSM is different things. It used to be thought of as pathology, but it turns out if it was, people who participate in BDSM should be psychologically worse off in some ways, more likely to be depressed or anxious or schizophrenic. None of that's true. BSM people, they tend to be a bit more extroverted, that's the big difference. They don't see to be damaged in any way. I think it's often a technique for consciousness altering, where there's a real big burden being you or me being me, carrying around all that self knowledge, the seeing yourself, imagining yourself through the eyes of others.

Techniques of BDSM can take away all that. You adopt another identity or at least give up your own.

Dave:

Interesting. I've seen a lot of recent psychology coming out about that. It feels like 50 Shades Of Gray, whatever it was, 10 years ago, everyone started going, what the heck is going on with this? And I've known some people who've had profound catharsis and what to them feels like healing and transformation and altered states of consciousness from it, like doing mushrooms or something, but they're just accessing it in a different way.

Paul:

Yeah. 50 Shades Of Gray is a great example because it was the most popular book of its decade, the second most popular book was the sequel, which shows that we really have an appetite for this, at least in fantasy, I find that interesting.

Dave:

And it's been around for hundreds of years, so it seems like it's something that's maybe innate even.

Paul:

So, I think it is a pleasure technology that speaks to parts of us that are universal and hardwired.

Dave:

A very interesting perspective on that. I've never heard it defined that way, but it resonates as being true. That's awesome. Thank you for that. One of my dear friends and mentors, I'm actually on his board of directors now, is Dr. Daniel Amen, who's done a lot of look at metabolic function and blood flow in the brain and how that reflects our anxieties, reflects our behaviors in the world, and I've interviewed Dr. Chris Palmer recently about looking at mitochondrial function in the brain, what's your take on the brain hardware problems being a cause of a lot of human behaviors?

Paul:

I don't know much about the details of it. I guess my answer would still be the same as before, which is that hardware problems could slow you up or speed you up. They can cause disruptions, they can mess things up. And this is really worth knowing from a clinical standpoint. Some people have this deep psychological prompt because there's something wrong with the hardware either for reasons above the neck or below the neck. But it won't explain why you vote Democrat or Republican. It won't explain your views on race or technology or politics or the relationships you have and so on. So, the content is more a product of mentation and thought, while the process can be affected by the things you're talking about, does that make sense to you?

Dave:

It kind of makes sense, but people who are maybe less prefrontally activated are likely to be more anxious, which could lead them to vote one way or another. And I've seen people who fix their brains when they don't have blood flow or they have low mitochondrial activity. I had chronic fatigue syndrome and I had very low mitochondrial activity and I had no blood flow in my prefrontal cortex in business school, which is why I kept failing my exams until I addressed the hardware parts of that. And I do find that if you're more driven by fear because you don't have enough energy to think about stuff and to choose whether you're going to respond or react, that that could affect your political leanings. It could affect the way you treat people. We need to punish that person for being an addict versus we need to treat that person for being an addict.

Paul:

Yeah, it could.

Dave:

There might be some stuff in there.

Paul:

There was a view, very popular, that conservatism are more fearful than liberals, and it was fitting with what we're talking about here. And I used to believe it. I used to teach it because there's a lot of really real, strong arguments for it. This may have be one of the casualties of the replication crisis because people have been trying to replicate the findings and they don't replicate as well. And, as always, with a lot of the cool findings we come up with, and again to be humble about my field, there's enormous publication bias. Because you have a hypothesis like that. If it works, you publish it, you send it to Nature and Science, this is great news. If it doesn't work, onto the next.

Dave:

Yeah, you toss it, why would you document the whole thing, it's too much work and you don't get another grant for that.

Paul:

Exactly. And honestly, as a working psychologist, if a study doesn't work, nobody's going to publish. It's hard to get it published. It's a lot of work to write up and it's not very interesting. And from an individual point of view, it makes sense to me to publish my studies that work. But from a community point of view, from the standpoint of psychology and further into science, this is disastrous and we need better policies.

Dave:

And I have a final question for you, I interviewed Dr. Robert Waldinger, who's in charge of the longest running human happiness study, he's I think the third person in charge of it, because these are the guys from Harvard from 80 something years ago looking at what makes them happy, and he says relationships is the number one source. Do you agree with that?

Paul:

Yeah, I do. My friend, Dan Gilbert, who's the biggest happiness maven I know, I put on Twitter because I was interested for this article I'm writing, what are the top discoveries of psychology? And that was exactly his answer as well. He said, "The importance of relationships to happiness." The way it's often put, that from the standpoint of wellbeing and health, having friends and people who love you has more of an effect or not having as more of an effect than obesity and cigarette smoking. And I will add one thing to the list though, just because it's not something which people normally think about, but also plays a role, which is the country you live in also has an enormous effect in your

happiness. If you tell me what country you come from, I have a pretty powerful guess as to how happy you are.

Dave:

So, if you're from Finland, you're pretty happy,

Paul:

Yeah. Finland, Canada, New Zealand, Australia. The countries that are wealthy, that have a good welfare system, a good environment for business, and then there's the totally miserable countries. The US isn't bad, by the way, for happiness. It comes up in the top 50%. But given how wealthy it is, it punches below its weight, you would expect it to be happier.

Dave:

Yeah, I think you have a good point there, and who knows why all that is. I actually think it's way more to do with our food additives than a lot of people would believe.

Paul:

That's interesting.

Dave:

Just because we allow a lot more garbage into our bodies and some of that stuff is psychoactive, at least in my research it is, and so I believe that research because it's well cited and it seems reproducible, and if I eat the stuff, I feel like the way the research says, so I'm going to go with that being reality.

It has been incredibly fascinating to chat with you, Paul, and thanks for continuing to write books. It is always a labor of love.

Paul:

Thank you.

Dave:

And I know as an academic, writing books for normal people to read sometimes gets looked down upon by your academic peers. Have you had to deal with that?

Paul:

Oddly, no. I think things have changed. Things have changed because some real prominent scientists, much more prominent than I am, have written books, physicists and psychologists, and paved the way for the rest of us. But now this is considered a fairly respectable activity.

Dave:

Thank goodness. I talk about David Sinclair, who's a friend in the anti-aging field, which is another of my big areas of work, and he dealt with some of that, and finally just said, I'm writing a book. And in my belief, if you discover something new and you don't do the hard work of telling everyone, it doesn't matter if you discovered it if no one ever gets to benefit from it. So, if your work is worthy, you owe it to the world to write a book for the world, not just for your peers, and that's just a new mindset.

Paul:

That's one way of putting it. Yeah.

Dave:

Well, thank you for doing the hard work, both in research and in writing, and your website is paulbloom.net and the book we just discussed for all of our listeners is Psych: The Story of the Human Mind.

Paul:

Thank you. This has been an extraordinary conversation, a real pleasure.

Dave:

I enjoyed it as well. Upgrade Collective as well as everyone listening, you could be in the Upgrade Collective, we had our audience, a live audience, helping to feed me questions and talking about what Paul said during the interview. If you'd like to be a part of that community, which has lots of positive relationships, just go to [daveasprey.com](http://daveasprey.com), and there's a link where you can join. It's affordable and it's a community and it's fun, and we're all curious and none of us get triggered, and if we do, we make fun of each other.

Paul:

You're resilient. A resilient community.