

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion



DANNY LENNON:

And here we are. Jaebian, welcome to the podcast. Thank you so much for taking the time to chat to me today, my man.

JAEBIAN ROSARIO:

Thank you so much for having me. I'm a huge fan of this podcast, I've been listening for a long time.

DANNY LENNON:

That's awesome to hear. And, of course, we've had some really good conversations privately online, messaged back and forth about various different topics which has been quite enjoyable and actually kind of sowed the seeds of having a more formal chat here. So I'm actually glad to be sitting, looking at you now, being able to talk through some of this stuff. Lots of interesting topics for us to dive into, but, as always, it's probably useful to set some context for people listening, if they haven't come across you before – can you maybe just give a brief introduction to who you are, what you're doing, and then, your general interest in some of the areas that we're going to discuss today?

JAEBIAN ROSARIO:

Right. So it's interesting, my beginning part of this, as far as us knowing each other was ironically not for what we're going to discuss today, but more so for nutritional science, in general, I was really big into nutritional science. I was a nutrition coach and personal

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

trainer, and I had a background in psychology and philosophy. So I tried to add that into some of what I was doing related to nutrition, and I was just active online as mr.cogfit for a while, just talking about these different topics, debunking things that we debunk all the time when it comes to nutrition. And then, eventually, what happened was the pandemic hit, and my perspective of health sort of shifted and changed, and I no longer wanted to focus on nutrition, I wanted to focus on more of the critical thinking aspect of health – how do we think about health, how do we contemplate what health is, the philosophical aspects of health, and more so, what are the existential threats to health, besides poor nutritional habits or poor diets, or diet fads, or whatever. It was more like getting into the foundation. And another thing too that kind of changed my perspective, when I was talking about nutrition was that I would debunk the same things over and over again to the same people, but for some reason, they were immune to facts, they were immune to changing their minds, they were immune to new information. So I sort of stepped back and started thinking, what am I doing or what am I not talking about that is fundamental to how these individuals are acting and thinking related to their nutritional tribe, so to say. So it was very fascinating, and that's when I switched to studying public health now for my graduate degree, and in that, I'm talking more about science denial, vaccine hesitancy, and more of a broader sense of what health is, and what's the existential threat to health more so than the individual risk factors.

DANNY LENNON:

Yeah, and I think it's interesting how many of those things overlap of not only that critical thinking, but how you noted there, for example, within nutrition, people have maybe a certain tribe or a certain group think that emboldens them within a certain narrative, and it's very difficult to get through to that. But that goes across other areas that we're now seeing that they've just mentioned, and so, many of these topics that we discuss, we can go from

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

granular out to bigger or we go from a bigger meta level back in, I think they'll all apply. And so, for some of them, we might start with talking about some nutrition aspects as examples, but then that can easily be translated across. I do think it's interesting, your background in psychology and philosophy obviously plays in here as well, because there are psychological aspects as to why people take on information or don't, but then there's also a difficulty getting through to people when they have a certain philosophical way of looking at the world, and I know this is something that we've certainly talked about before, and I know Alan and myself have talked about this on certain podcasts related to ideology and evidence. So with that, maybe to start, one of the things that we had discussed privately before is how these ideological extremes can be a big barrier to having rational objective discourse in the context of nutrition, could you maybe just talk about the idea, first in relation to nutrition, and then maybe after we can broaden that out?

JAEBIAN ROSARIO:

So when it came to nutritional science, there was a whole bunch of different camps as far as people were into different fad diets, but the main two groups that we've talked about ad nauseam were the plant base sort of extremist, and the more low carb, ancestral health extremist. And with these factions, with these individuals, they automatically assume that their method was absolutely correct, no matter what, for whatever reason. And the argument will often be riddled with specific sort of fallacies, obviously, all the time moving goalposts, and as we're seeing with, let's say, I like to pick on the low carb space because it's obviously more easier for listening at home. The goalpost has shifted from things like sugar that we were arguing about two or three years ago to now seed oils, or we're arguing about saturated fat. So for some reason, these individuals, no matter what it seems, they are constantly moving the goalpost from the original argument to something else, and

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

they're often using the same tactics, the same fallacious reasoning to justify what they believe, even in the face of overwhelming evidence to the contrary. And it's often riddled with conspiracy theories, there's a lot of different conspiracy theories within the plant based sort of extremist community when it comes to the meat industry; there's a lot of conspiracies in the low carb space when it comes to the dietary guidelines in different countries. And it's sort of like, these are like two halves of the same coin, they're using the same reasoning, but they're arguing different points. So it's like, why are they coming to this opposite conclusion using the same tactics, and that's what fascinated me the most, because they're doing the same exact thing, but they're coming to different conclusions, and they're trying to justify within their own groups. But the ironic part is with, let's say, the low carb space, is that they're claiming that they're the free thinkers, they're claiming that they're the scientists, that they're the skeptics, that they are the ones who understand the science of nutrition, when in all reality, we both know that they probably don't. And when you hold their feet up to the fire, they don't. So it's like, how are they coming to this conclusion, what tactics are they using – and when you look across science denial as a spectrum to different areas, they're using the same tactics, the same exact tactics that climate change denialists use, same exact tactics that anti-vaxxers use, and now we're starting to see a lot of overlap in those groups.

DANNY LENNON:

Yeah, and there's much to get into there. I think one example that is interesting to me is when people use the philosophical or ideological basis for their argument around what humans were evolved to eat, and therefore, there's one particular best diet, and they will route that in, well, look, it makes sense that we evolved on a certain type of diet for such a long period of time, and so, we need to go towards that, because that is what is going to be healthy. And it's interesting then,

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

depending on which group of people or which individual you are talking to, they cite different types of indigenous populations, and therefore, use that as support for their particular diet. And that can vary, some of it may not even be accurate, but it's still based on this kind of false premise of the best way to understand the healthiest diet for us humans right now is to look through a very narrow lens of what did certain types of populations consume. But again, if you are very much bought into the idea of this makes sense because this is how nature intended us to evolve, it's very difficult then to be able to take on board someone showing you actual evidence that certain foods that have some degree of processing, for example, are actually fine to consume, that goes completely against your belief system of anything that is manmade is going to be a problem. Right? So I think that kind of is one thing that just came up as you were talking through some of that stuff.

JAEBIAN ROSARIO:

It's the automatic assumption that what is natural isn't necessarily better for us, and there was this whole entire book written on it, it's called Natural by Alan – I always mess up his last name – Levinovitz or something like that. I'm pretty sure you know who I am talking about.

DANNY LENNON:

Yeah, Levinovitz is how I'd go, yeah.

JAEBIAN ROSARIO:

Yeah, that's how I go, yeah. And his book was magnificent because it points to this, it's almost like a universal human inclination to want to go towards what's natural, or seeing what's natural and what's better, but it's not necessarily the case because what is natural is not necessarily what's better. But it's a very seductive narrative, because you feel you feel like you're doing something right, you feel like you're achieving something that you haven't achieved before. Our modern lives often, I would say that they often alienate us from one another, in a sense, because we're less probably social, less inclined to go to social gatherings, less inclined to see our family, more likely to

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

live apart, less likely to have a lot of kids. And this could have possible detriments to our psyche to an extent, you know, social isolation is a huge problem, and it's associated with a lot of different mental health issues. So I kind of see the appeal of wanting to go back towards nature, back towards what we perceived as what worked in the past, we kind of romanticize what we did before. It's that kind of the feeling of nostalgia, and I feel like some of us take it to the extreme where we feel like what was before us is totally better in all circumstances, and what we're doing now is totally wrong. And that's further from the truth, it's more complicated than that.

DANNY LENNON:

Yeah, and I totally get when people are sympathetic towards that view, because that was me at one point, and like, when you first hear it, it is a very seductive, logical sounding reasoning of, well, look, if we look at this field of evolutionary biology, and we would have evolved a certain way, it makes complete sense that we're set up to handle a certain type of diet metabolically. And therefore, now we're going to build this whole narrative around that. So I can understand why people find that seductive, but, of course, that's not what we're criticizing. We're criticizing the people that continue to push that. I definitely want to later circle back to how some of that plays out in other fields beyond nutrition, but just for now, if we do stick with nutrition, one of the really interesting ideas that I think is related, and that you've talked to me about is social identity and nutrition, and this kind of relationship. Can you maybe just introduce people to some of the ideas and thoughts that you've been having in this particular area?

JAEBIAN ROSARIO:

So I read this awesome book called *The Power of Us*. I highly suggest everyone to read it. It is essentially a social psychologist going over the theory of social identity, which states that our identity is not just us, it's not just how we perceive ourselves, but it's how others perceive us, and how we perceive ourselves and other

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

groups. We all identify with certain groups, and identification with these groups will impact our behavior, our thoughts, and our emotions; so when we identify as, let's say, a Keto dieter, we're going to have a certain amount of social expectations within that group, we're going to have certain norms within that group, we're going to have certain behaviors and dynamics within that group; and that group is going to impact the way that we think and vice versa.

So it's not just the fact that these individuals are lone, crazy wolves, just out here, having these twisted thoughts, it is the fact that they are often a part communities that perpetuate these narratives, and because you're part of this community, you're going to adopt that narrative, and you're going to automatically reinforce it, because that's a part of the group that you're with. Even with us as evidence based professionals, we have a social identity as scientists, as healthcare professionals, as people who appreciate science; we have a specific sort of social identity, we all have social identities, but certain individuals have social identities which are the opposite of ours; and identification with these identities, often leads to group dynamics, where we sort of see it as us versus them; and that often strengthens the social bonds within the group, but it causes a rift between other groups. And this is often where you see a lot of ideological extremist cults, certain cult dynamics, it's very much in there.

DANNY LENNON:

I think one of the big problems it also puts people on a defensive of any kind of counter evidence that gets presented to them is almost the first filter is, okay, how do I refute this, right? And at least, I've seen people share screenshots of certain forums of certain diet communities, and people will post something like, hey, I just came across this article, can someone give me some evidence to refute it or say why it's wrong. So this person obviously doesn't know why their claims are coming across are wrong, they just know it doesn't fit

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

with their diet. So now they're asking other people to, can you provide me a reference to show why it's wrong. It's like, it makes no sense at all. And interestingly, I think you make a really astute point about people who are in, let's say, this evidence base circle, whatever you want to call that, need to be careful of the same thing that there is a limit to where, if you over identify with that, and therefore don't continue to do the tenants of what that means, of being continually skeptical, of actually looking for evidence of looking across all the evidence, not just certain amounts of it, not having a kind of preformed idea of your answer before you go and investigate a question, if you don't do those things, you're susceptible just to regurgitating a certain kind of party line almost. And I think that's a useful lesson for everyone, because sometimes we can probably presume we're not susceptible. Right? That's the kind of fallacy of, like, everyone else makes all these logical errors in thinking, but I don't do it.

JAEBIAN ROSARIO:

Yeah, it's a big assumption that we are immune to the very things that we talk about, and it's not the case. I'll give you an example, so there's some experiments called minimum group experiments. So essentially, what social psychologists try to do is create a social vacuum, where there's no identifiable political ideology, there's no outside factors. Well, they try and minimize the outside factors as much as possible, kind of, like, how you try to do certain physical experiments at physics in the vacuum, right, to identify and isolate particular factors. So they try to do this in social psychology, and what they would do is give individuals certain arbitrary group designations. So for one instance, there was a paper, I have to send it to you, but they identified one group as over-estimators, and one group has under-estimators. And based on this arbitrary designation, these individuals will favor people in their own groups versus those in the other group. And this is interesting, because the groups are arbitrary, the groups mean nothing, but we still favor

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

people that are in our groups versus people in other groups. And there were other experiments, where an individual in our group would do us wrong, but we're more willing to forgive them than an individual in another group, and that's fascinating. And this is based on arbitrary group designations.

DANNY LENNON:

Wow, that's incredible. So yeah, there's obviously something at a deep level that is making us so susceptible to these things. So yeah, to think that we can just learn this one time, and then, oh, that's me cured of making any errors that human brain does is obviously just idealistic. It's something that needs to be continually worked.

JAEBIAN ROSARIO:

Right. And I'll give you another example, this one is going to be brilliant, you're going to love this one. So I made a post recently about this paper, it was done a while ago, where they will have individuals answer a mathematical problem, but it'll be based on – it was either gun control or skincare. When you have the math problem based on skincare, a lot of people got to correct regardless of political identification, but the same mathematical problem done for gun control, for instance, depending on what the answer was, whether in favor of gun control or not in favor of gun control, the political identity of the individual dictated whether they got the answer right or wrong. So Democrats, for instance, American Democrats, are more likely to get the gun control problem wrong, if the answer, the mathematical answer did not favor gun control, and vice versa for those who are conservative. So it's a matter of like identity can impact your ability to reason to such a point, you get a simple mathematical problem wrong.

DANNY LENNON:

Yeah, that's incredible, and certainly, later on, I have some things that bring up politics, particularly... although again, a controversial topic, but we'll put that and COVID in the one episode it's going to be. I'm sure no problems from anyone listening. But there's a lot to get

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

through, because they're such useful examples. I think maybe a good way to make this into thinking broadly about health, thinking broadly about critical thinking is of any of the things we've discussed in relation to some of those nutrition examples so far, either people really reaching to ideological extremes getting in the way of actually objectively seeing something or having this kind of group identity, how has that played out in other areas of public health beyond nutrition that you think are kind of a useful example for people right now to get to grips with?

JAEBIAN ROSARIO:

Vaccine hesitancy is obviously on the spectrum, but it's the same ideological social identity that's impacting their choice of decision to get vaccinated or not. If you often listen to these individuals, they are often stating the same arguments, the same claims, the same worries that many public health officials and departments and institutions have already answered ad nauseam. But it's because of this concept called motivated reasoning, where the individual who identifies as anti-vaxxer or identifies as a person who doesn't necessarily want to get vaccinated or identifies as a free thinker, that's the one I mean to talk about now, where they don't want to get what the government told them to get, they're often having these thoughts and misconceptions, even though these things are corrected, because their mind can't comprehend that they're wrong. It's really hard to explain, but it's the mind's defense against being wrong, it's that cognitive dissonance where you identify as one thing, or you have a certain group of individuals who say this one thing, and then you see the facts and the information on the other hand – that creates a lot of discomfort, so the best way to get rid of that discomfort, the easiest way often is to just say, the people, the officials, the government, those who are saying that this thing is okay to have and take, are obviously wrong, they're paid off, they're corrupt, they're this, they're that. You see this in diet circles all the time, you know, the

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

dietary guidelines are corrupt, the USDA is corrupt, it's this, it's that. It's not me that's wrong, it's them that's wrong. Because it's easier for me to comprehend, because I don't have to get rid of my social identity as an anti-vaxxer, I don't have to get rid of my social identity as a person who doesn't want to get vaccinated to whatever extent or a person who's concerned or a free thinker or hatred or whatever I want to identify as that doesn't want to get vaccinated. I don't have to go through that social death of getting rid of my social identity, it's obviously them that are wrong, not me.

DANNY LENNON:

Yeah, so I see that there's two kind of separate ways some of those counterpoints someone might put across and, in each way, they're quite different. One is, as you've just outlined, that someone is presented with certain data around, let's say, vaccine efficacy for preventing severe disease and death. One way they can go and say, well, I just don't believe any of that. Right? Every study on vaccines I don't believe any of this information that's coming out, I just don't believe it. In that sense, you're kind of screwed. The second one is a more kind of reasonable, but yet, in some ways, unreasonable aspect of saying, okay, I accept what you're saying, that indeed there is this kind of risk reduction, it seems particularly for severe disease and death specifically, and then they'll kind of give some reasons why they don't feel that really is valid for them, right? It's like, I'm still not really worried, I'm still at an absolute low risk, so I don't care about reducing that risk further, or maybe even trying to distort some sort of those statistics of saying, okay, well, maybe there's this risk reduction here, but are we getting a real fair reflection of side effects from the vaccine, or, I'm not too sure about the statistics you're showing me, even though this has been reproduced of how much risk is reduced from particularly the first two doses of an mRNA vaccine. And so, there's these two different ways to go complete denial, or, kind of accepting it to some degree, but then coming

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

back and saying, but these other factors, and kind of reasoning away from it in that way. Do you think one of those is more likely to have discourse, and how would you approach each of those?

JAEBIAN ROSARIO:

So denial is often very, very, very, very difficult to undo, because the person oftentimes doesn't have the same value system that you have, they don't value scientific evidence. So what often helps is putting in the seed of doubt sometimes this is through having a nice conversation with them, possibly just interjecting some – to some like the logic that's inconsistent with denial, because often denial isn't really – it's really more emotive than it is knowledge based. So sometimes I really just try to like, for instance, I have a family member who she believes that COVID is real, but denies that the vaccine is how far safe. And so I tried to talk to this person, I'm like, well, did you get the polio vaccine. Yes, I got the polio vaccine. Why did you get the polio vaccine, if you think all vaccines are not safe? Oh, it's this one, it's rushed. I'm like, but do you know how it was developed. And then often, they said, no. And I left it off at that. I'm like, it's a little kernel of doubt, I'm not trying to make them seem stupid, but I'm trying to get them to rethink, like, if I don't know how this thing was developed, how can I say it's rushed.

When it comes to the person who accepts the facts more accepts the statistics more, it's easier to work with them because you kind of give them counter evidence to help them sort of reason why certain findings are the way they are, but there's some individuals who often misrepresent research and are motivated reasoning to not get the correct answer, or distorting data or they're doing whatever it is. Ultimately, I feel like those individuals have some sort of agenda whether that agenda is to be right or to seem smarter than they are, sometimes it's narcissistic, or sometimes it's generally out of fear. I think a lot of conspiracy theories come from fear, from anxiety, from

uncertainty. So one of my best ways of helping those individuals especially, is to make them feel empowered by giving them resources to help them sort of do their own research, even though we both know that's not entirely accurate, but in their mind that's accurate. So the best way to help them is to help them do their own research, but in a more productive and right way. That's when you give them resources that are more credible and saying, hey, can you please read this, and let me know what you think, let's talk about it. So that way, we have a basis of understanding like, hey, we could actually talk about the evidence together, I want you to read this and tell me what you understand and don't understand. And from that, hopefully, you realize like, there's a lot you probably don't know, and you should probably reconsider some of the things that you're talking about because you're not that knowledgeable on this subject.

DANNY LENNON:

There's some subset of people that I also have a lot of sympathy for in how they came to a certain position, and particularly, if they have distrust in some of the organizations that are most promptly putting out this information, because I think we can probably identify several cases where at least certain individuals or even certain organizations or institutes have put out information that isn't like truly evidence based or at least wasn't the complete truth about something. I can certainly talk about examples here in Ireland, where we've had health officials say something that is, like, just not correct or just not completely true. And so, even if it's an oversimplification, people can point to that and say, well, look, this person was saying this, I know that isn't like scientifically accurate, so I'm kind of losing a degree of faith there. And I think what ends up being the problem is missing that, indeed, we can have certain individuals who are scientists as a job and end up being the person that we see on TV that's representing what certain organization is recommending. But that is distinctly different from science as a field of

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

investigating this, of looking at these multiple different studies, do they reproduce each other, are we seeing the same thing in different countries, are we seeing different organizations with generally the same guidelines, all these things to increase our probability and confidence as opposed to these examples of actually, yeah, I agree with you, there's these certain individuals in these positions that I agree, in the certain instances, said something that I don't think is actually completely accurate or is overly simplistic or not completely the truth, and so, I have sympathy with that, but that's not really what we mean by science.

JAEBIAN ROSARIO:

The issue with understanding the philosophy of science and the sociology of science, and meta science, these are all very complex concepts that people don't necessarily comprehend, because it takes a lot of brainpower to truly absorb. But when it comes to the philosophy of science, we have to see science as a process towards approximate truth. We're never going to understand everything fully, things are going to change constantly, data is going to change constantly, and I really try to drill that into people's heads that, hey, science is a process, it's an imperfect process, but is the best process that we have towards gaining knowledge. And understanding where the authority of science lies, it doesn't lie in the individual scientists, it lies in the data, it lies in the body of evidence, it lies in the justification that the scientists give, which is based on the experiments that they do. And if we can stress that norm, then we can sort of understand why recommendations change, why certain individuals who are human made mistakes, why this wasn't entirely accurate, why during the global pandemic we're kind of unprepared, and that's not only because of the scientific community, it's a systemic issue. It's issues with our governments, it's issues with the supply chain, it's issues with our economies – especially in the United States, we were never prepared for a pandemic, I can say that with confidence – we were never really

prepared for a pandemic of this magnitude. One of the first mistakes that we saw, especially was the CDC being in charge of manufacturing tests in the beginning of the pandemic. It's not like that now, from my understanding. But the CDC isn't a manufacturing organization, they're not made to make test, it's not their job. So when we have issues like that, we can understand that this is a lot more complex than, let's just blame Fauci, or let's just blame this individual, let's just blame that individual. And we start looking at it as what's the body of evidence, what are some of the barriers towards getting this evidence or what are some of the barriers towards even policy, because sometimes we have to make compromises, sometimes we have evidence based facts, like, we have a fact sheet, but sometimes that doesn't go with the status quo, or sometimes that doesn't go with what's feasible, or sometimes people are not going to be adherent to a model of what we can do. So you have to factor in the point of human behavior, and the fact that scientists are humans as well, and we may make mistakes, and we have to revise those mistakes. And the differences I will see from science compared to other enterprises is that being wrong is part of it, is inherently a part of it, and we strive towards getting it right, because with science and everything, we wouldn't keep doing experiments, we wouldn't keep testing stuff, we wouldn't keep having hypotheses, we wouldn't keep having questions.

DANNY LENNON:

Yeah, no that raises a couple of things I want to ask about. And actually something with perhaps an underpinning in psychology and philosophy that I want to ask about is the, I suppose, the need or the clamoring of humans for certainty, because I think that really applies here, when there is uncertainty, particularly in something that is so new, and it throws our complete society off track, we obviously want to try and pull towards things that are certain as opposed to sitting with some degree of uncertainty. And this kind of brings me back to

a topic and a conversation that I've had with some close friends around one of the big challenges, when going from talking to a scientifically literate audience to say the general population who may have varying degrees, maybe no background in science, or even understanding mathematics or anything like that, is how to think in probabilities. And there's lots of people that have written some great books on this, and I think Annie Duke's book, *Thinking in Bets* does a really great job of illustrating how we can think in different probabilities all the way from zero up to 100% across a whole spectrum. But most people aren't trained in mathematics or science, and so, when they think of the probability of something happening, they have three probabilities, 0%, it definitely won't happen, 100%, it definitely will happen, or 50% it might happen, it might not. Whereas really, there's not three properties, there's this whole spectrum. And I think the difficulty that we're seeing now is people being able to look at, number one, what is the probability of something going to happen; number two, accepting that we can't be a 100% certain about any of these interventions, so saying that it's not guaranteed to stop me having a bad outcome isn't really a good argument against it, because it can never do that. And instead, when we're trying to weigh up, for you, as an individual, what is the best kind, of course of action for you to follow is like, and they say, well, I can't be certain that this group is telling me the truth. It's like, actually, you're right, I don't know how to tell you that you can be 100% certain in whoever you pick, but what you should do is probably pick what has the highest likelihood of being accurate. And that's probably much more likely to be true from these various collaborations of scientific kind of consensus across a topic, as opposed to one random person you came across on TikTok or whatever. Right? Just probabilistically, that's more likely to be accurate, so play the probabilities' game. How do you try and have that conversation with people about thinking in

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

levels of uncertainty and trying to make decisions probabilistically?

JAEBIAN ROSARIO:

David Hume, philosopher David Hume gave one of the best descriptions of this. He said, believe in proportion to the evidence. So that means that if the evidence is never certain, you can never have like a certain belief. So our confidence level would have to be in proportion to that. So yeah, for instance, if I'll give you an example, if I go out on the street right now, and I sock somebody in the face, and a lot of people see it, most likely the probability I'm going to go to gym, I'm going to get in trouble. A lot of people saw me, there's cameras all over the place, I'm going to get in trouble. But there's also possibility that I can get away with it. Which one is more likely? I'm going to get in trouble in front of everyone, there's cameras everywhere, everyone knows my face, versus, I'm going to magically get away with it, because something, I don't know, fate or something like that. The probability is more likely in favor of me getting in trouble. Same thing with thinking in terms of a certainty, there's a possibility my car could explode for no reason. There's always a possibility – there's a possibility somebody could hit my car, there's always a possibility. Is that going to happen? I really don't know. Is my car going to like just magically combust out of nowhere? I don't know. But am I preoccupied with those thoughts? No, because, most likely, that's not going to happen. So that is the issue with thinking in terms of uncertainty, where we're always uncertain about a lot of things that we just assumed to be true, when in reality, we really don't know if it's true or not. I don't know whether my computer's going to shut down right now. It's highly unlikely because my battery is full, I have full WiFi, but it could happen. I don't know if this building is going to collapse at any moment, I don't know that. But most likely, it's not going to happen. I have this assumption when I turn on my car, it's going to turn on. So we have assumptions every day about uncertainties that we really don't think about.

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

The problem is when we start thinking about it, we don't understand risk, we don't understand stats, because it's not sort of how our brain was made to think. We think in terms of anecdotes, stories; we don't think in terms of what's the statistical likelihood that this is the case, and that's the case, and this and that; we don't think in terms of probability, we have to train it. So that's often what I try to get towards people who are thinking about certainty that there's always uncertainty, and to think properly about it, we have to train ourselves to do so.

DANNY LENNON:

Yeah, that's an important point, because that actually ties into how people become susceptible to misinformation is that we aren't set up to really think statistically or probabilistically. It's a skill we learn through this endeavor of science and mathematics, and really, those tools are there to bypass the normal human brain on how it thinks because it is susceptible to these various fallacies that we've already mentioned. And the interesting thing is when you look at how misinformation or disinformation gets spread widely, and in this context, we're talking about, let's say, just stuff about completely dismissing any use of the vaccine, or, this is the worst thing ever, it's going to kill everyone, like, really extreme anti-vax propaganda, none of that is built off, here's the statistics about what it's doing; all it's built around is various stories, many fabricated or even like just isolated anecdotes of something that happened that elicits an emotional response, and that's what is going to resonate with someone, as opposed to talking statistically and probabilistically about what your actual risk is, because they know that people aren't good with analyzing risk in that manner.

JAEBIAN ROSARIO:

We are, and I'll give you a perfect example. There is a fallacy related to stats. It's called the gambler's fallacy. It's a fallacy related to probability in statistics, I'm sure you're aware of it. But we have this idea, this inclination that

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

if I flip a coin, that my past flips of the coin is going to impact my future flips of the coin; meanwhile, when I flip the coin, it's independent either way of where it's going to go; my past flips of the coin is not going to impact my current flips of the coin; and that's because the brain has a more historic configuration, we often go back to our past to shape what we're going to do now and what was going to happen in our future, we like to predict though, we like to predict stuff based on our past. So that's the brain, sort of, I would say, like, just in, like infecting our understanding of statistics and probability, because our brains weren't meant to do so, you see, it's like you're asking the brain to do something it wasn't normally meant to do, it has to be trained in that sense. So it's very fascinating that we have certain heuristics, we have certain sort of assumptions that bypass even the basic laws of probability. So it just shows that, no, we were not meant to think in terms of these factors, and people who are spewing nonsense related to COVID, or related to the vaccine, or related to nutrition, they often don't think in terms of statistics or probability, or what's most likely the case when you talk to them.

DANNY LENNON:

Yeah, when you walk up to that roulette wheel and there's been six reds in a row, then everyone's just going to pile on black because the next one is has to be black this time, there's been too many reds, as you say, yeah, it's an independent decision, but we don't think that way. Maybe to round this out, because we're coming close to time, but, of course, just to really squeeze in another controversial topic, and I think it's useful to bring up is around politics, and not necessarily politics itself, but how a certain political ideology or affiliation, and therefore more likely a worldview, and one could even say, a personality type is also maybe correlated with that, ends up impacting how we kind of vet and take in information. And this is not always the case, so I just want to make that clear, but it's just being aware of our

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

susceptibility. So as an example, I think one of the things Alan and I talked about in our episode on ideology versus evidence is if you have a really strong worldview that's based in as a libertarian, and like, that is the dominant view that you see everything, then not necessarily, because I know people who politically are libertarian, but can really engage well with nutrition science, so I'm just saying, generally, the risk is higher, if you have that really strong worldview, you really identify strongly with that, that if you are presented some of the evidence around certain interventions for changing the food environment, and how that impacts population health, and a lot of the evidence that says benefits for various regulations around the food industry, or certain interventions that actually increase the kind of restrictions around some of those corporations and so on, you'd be maybe more likely to push back against that evidence because of an ideology. Again, not everyone, but it increased the risk, and that's just one example I can think of where, rather than just looking at evidence for evidence's sake, it's kind of rooted in our worldview, or our political affiliation, and again, I'm just as susceptible as everyone else, that there are certain things of how I see the world and how I think society should be, and therefore, how I vote that are probably going to impact me in the same way but it's just being aware of for you, what are some of the parallels of some things that we may be talked about in relation to health or even nutrition that also tie into political affiliation, and what are some interesting points to you?

JAEBIAN ROSARIO:

So I've noticed that a lot of low carb, ancestral health space is becoming increasingly anti-vax. That's more anecdotal from my experience, from what I've seen. They often push this narrative of personal responsibility above all, and personal health above all, which is ironic given, you juxtapose who they blame for everything, the government, meanwhile, they say that health is clearly your responsibility

which is oxymoronic at the same time. The problem is, we think, especially in the fitness industry, I think this is a fitness industry problem overall, and not just nutrition, we think of health in terms of the individual; we think in terms of, like we said, anecdotes; we think in terms of one person, health is not only about one person, it's about the population, it's about the community, it's about your neighbors, it's about the people in your life, those around you, it's not just about you. And with a more, I think, that type of libertarian ideology, not saying, in general, but just overall in the fitness industry, especially, we have this assumption that the individual trumps all, when, in reality, the individual cannot function well without a solid society. You need a society in place, you need social norms in place in order for it to run. Everyone can't just run red lights if they want to, just because it's their own personal choice. People shouldn't be allowed to smoke cigarettes in my face, because it's their own personal choice. There has to be some sort of accountability, some sort of compromise, when dealing with other people. We are social animals. We have to deal in a social setting, and dealing in a social setting requires compromise, it requires that we get along, it requires cooperation. And we cannot do that just assuming that everything is all about us. Freedom – freedom is definitely important, but it comes with a cost. Freedom comes with responsibilities, unfortunately, like Spiderman said. But freedom comes with responsibilities, when you are free, if you're in existential philosophy, burden of freedom is that you're responsible towards not only yourself but other people, because ultimately you make the choice. So freedom doesn't come without its own baggage, so saying that you're free to do whatever you want, is neglecting your responsibility to other people, it's neglecting who you are supposed to act and how you're supposed to act in this world. We are supposed to act in certain ways. You cannot just do whatever you want.

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

DANNY LENNON:

Yeah, there is not this thing of just leave me to live my life and you get on with yours, like, no, that doesn't, that's not how society functions. Right? We have this kind of agreed upon social contract, either stuff via law or things just that aren't even in law, but we just know how to function with each other, and how we treat each other, on kind of a mutual basis. And yet, if we are going to throw that away in the name of freedom, we're going to miss out on a lot. And it's interesting when you do look at particularly where that is the strongest call to that everything is down to personal responsibility, and nothing should be beyond that. Usually, it's not people who are facing the harshest circumstances socioeconomically, right? There's no one there saying, oh yeah, let's just all take responsibility. It's people who are completely detached from that world who have the kind of luxury of being able to say, just take responsibility for yourself, and that's the kind of ironic thing that people can't see.

JAEBIAN ROSARIO:

And the thing is, like, people forget that Rome wasn't built in a day. Everyone's success came with the help and aid from other people. I didn't get to this point, where my understanding and my knowledge and my community and whatever you may have, and my education, I had people that helped me, I had my mom that helped me, I had professors that helped me, I had teachers that helped me, I had my fellow classmates that helped me. There's so many people that helped me along the way. You didn't get to where you are by yourself. Even if you own a gym, you still have employees; if you don't have employees, if it's just you why the hell are people going to want to go to your gym. There has to be – there are people that install the electricity in your gym, there's people that had to install the plumbing, there's people that had to get you the workout machines. There's other people involved in your enterprise, regardless of what you want to say or how you want to act. Jeff Bezos is not a one-man company. He has how many people that work under him, that got him his wealth.

#426_ Jaebian Rosario – How Social Identity and Ideological Extremes Impact Scientific Discussion

So it's not just about the individual, it's about the collective, it's about cooperating with one another, and it's also about respecting individuality, but realizing that the individual belongs to something else as well as, a society.

DANNY LENNON:

Before I get to my final question, for people who maybe want to follow more of your content, get in contact with you online, follow you on social media, that type of stuff, where are some places that you would tell them to go?

JAEBIAN ROSARIO:

So I'm on Instagram and Twitter and Medium, @sciencebyjae. I'm also on Substack @sciencebyjae, I write there often. And I'm also on Patreon @sciencebyjae. So that's it.

DANNY LENNON:

Awesome, yeah, and for everyone listening, that will all be linked in the show notes, so you can go and check that out, if you want to get any of that writing and follow Jae along on social media. With that, that brings me to the final question that I always end the podcast on, and it's simply: if you could advise people to do one thing each day that would have a positive impact on any area of their life, what might that one thing be?

JAEBIAN ROSARIO:

I'll give you the advice that Seneca gave me, the philosopher Seneca, where it's you gather one quote, one insight, one page of reading every day, doesn't matter, just something, learn something every single day, just one thing, every single day.

DANNY LENNON:

Fantastic. Perfect way to end. Jae, thank you so much for this conversation, really, really enjoyed, and thank you for coming and doing this.

JAEBIAN ROSARIO:

Thank you so much for having me.

[00:52:01]