

Rationally Speaking episode 134: Michael Shermer on, "Does science drive moral progress?"

Julia: Welcome to Rationally Speaking, the podcast where we explore the borderlands between reason and nonsense. I'm your host, Julia Galef, and with me today is special guest Dr. Michael Shermer.

Michael is a leading skeptic. He's the founder of the Skeptic Society and the founding publisher of Skeptic magazine. He's also a professor; a regular contributor to publications like *Scientific American*, the *Wall Street Journal*, and *Nature*; he's an author many times over at this point, most recently of the book, *The Moral Arc: How Science and Reason Lead Humanity toward Truth, Justice, and Freedom*, which we'll be discussing today. Michael, welcome to the show.

Michael: Hi. Thanks for having me.

Julia: If you would, to start, just lay out the thesis of your book in brief. How can we tell that there's been moral progress, and why do you think that science and reason deserve some credit for it?

Michael: Right. Well, I think the long view, the historical view over the course of centuries, if you just look at the headlines, it seems like things are bad and getting worse. The Syrian civil war and violence in the Middle East, and Putin taking parts of the Ukraine, and Ferguson, and Baltimore, and you can always come up with headlines. There's always going to be enough bad news to fill the evening news.

But over the course of centuries, if we look at the trend lines, overall violence is decreasing, and the death penalty has been abolished everywhere except America, and it will be here soon. Slavery is illegal in every country in the world, women have the right to vote in every country in the world except Saudi Arabia and so on. Depending on the category, almost everything you pick has a long-term positive trend.

Julia: What do you see as the role of science and reason in that trend? [00:02:00]

Michael: Well, I'm using science in the broad sense of reason and empiricism. Using the faculties of reason, and the idea of testing hypotheses. Actually looking into the world to see what's really happening and what works.

I'm arguing that ever since the Enlightenment -- and the Enlightenment was inspired by the scientific revolution -- the idea is that the universe is governed by natural laws and principles that we can discover and apply.

That is true not only for the physical world, and the biological world, but also the social world, economic world, the political world. I have a whole chapter devoted

to this in *The Moral Arc* starting with people like Copernicus, Galileo and Newton, who inspired their contemporaries and people who came after, like John Locke and Thomas Hobbes, David Hume, Immanuel Kant, Thomas Jefferson, Benjamin Franklin, and Thomas Paine. All the great names we're familiar with.

If you think about what they were doing, they were really scientists. That word didn't exist then; that word wasn't invented until the mid-1800s. In their time they were natural philosophers, they were interested in studying nature. Most of them did have a background in the physical sciences. Well, we would call it physical sciences, they just called it natural philosophy.

What they were inspired to do is to figure out how to solve social problems. What is the cause of economic flow, the flow of money, for example. Where does money come from? This whole idea was first pioneered by a guy named François Quesnay who was the physician to the French king, King Louis the 14th, who put him in charge of figuring out how the economy works.

They didn't call it that, there was no such thing as "an economy," but the idea of currency flowing through a country was analogous to blood flowing through a body. His physician had studied William Harvey and the flow of blood through a body, the circular [00:04:00] flow. This is where the idea of the circular flow of currency comes from. It comes from biological metaphor, or analogy, with the human body.

That idea that, okay, there's principles in biology to help us understand the human body and disease and how to make somebody healthier, maybe we could do the same thing with the economy, figure out how currency flows through an economy, where money comes from, how we could be a wealthier country, what's the cause of that.

This ultimately led to Adam Smith's great work, the founding work of economic science, which most people think is titled the *Wealth of Nations* but it isn't. The real title is *An Inquiry into the Nature and Causes of the Wealth of Nations*.

Julia: A little less catchy.

Michael: Yeah. Well, it's less catchy for sure but it tells us what it's about. It's an inquiry, a scientific inquiry. What is wealth? How do you define it? What causes it? What causes it to grow or shrink? That whole thing comes from this scientific revolution idea, that there are underlying principles, and that if we study it, we can figure them out.

Democracy was kind of an experiment. That's why Jefferson always called it the American experiment in democracy, or he called democracy an experiment. It's

like running an experiment and seeing what the results are, and then running it again. You have an election and then you run it for a couple years, you see what happens, and then you run it again, and you run it again. It's an open-ended process.

Gathering information and then seeing what works and then trying it again. That's what I mean when I say science and reason has propelled moral progress - in contrast to what? To religion. Religion is not the primary driver of moral progress.

Julia: You've been talking at the societal level, but I think when a lot of people hear "moral progress," they're thinking of the attitudes and behavior of individuals. Are individuals -- because of science and reason, or because of something else -- are individuals [00:06:00] becoming more compassionate or better behaved in some way? Is moral progress occurring at the individual level and not just the societal level?

Michael: Yeah. That's a really important question and I think the answer is yes. In part, because of societal changes, political changes, economic changes. If you give people more freedom, more wealth, prosperity, more education, and more opportunities to do things, it changes their way of thinking. Literacy, I have a whole section on literacy.

The increase of literacy rates after the reading revolution and the rise of literacy in the 18th century and 19th century, really changed things. There's research now, recent research that was just published in 2013, showing that people that read a lot are more empathetic, they're more sympathetic, they better able to read people's minds.

That's so-called mind-reading, not the psychic stuff that you and I debunk. The act of figuring out what somebody is thinking by looking at their face. There's tests for this, you look at somebody's facial expressions and you try to guess what they're thinking, or what they're feeling, and people that read a lot seem to be better at doing this.

Reading fiction especially. The idea is that if you look at the world through the eyes of the character in a novel, particularly something like a Jane Austen novel, it really changes your perspective, and it helps train your brain to think, okay, this person is thinking that. The other person is thinking this. And it just leads you to take the perspective of other people, which is what morality is all about.

So at the individual level, yes, I think we're also seeing change. Now, there's human nature that isn't going to change. We all have a selfish drive, a selfish motive, we're greedy -- but we also have a good side to us, a good part of our

nature. We're pro-social, we're cooperative, we're altruistic. We like being nice and generous to other people, depending on the conditions.

The whole point of structuring a civil society in a certain way [00:08:00] for the last couple centuries has been to tilt the incentives to get more and more people to behave more morally. That is, to respect the rights of other people, the equal treatment under the law, that all people should have the same rights, those sorts of basic things.

That doesn't come naturally. You have to engineer, socially engineer that into a society, by tilting the incentives. For example, you structure the tax system in a way, that's why non-profits don't have to pay taxes. The idea is, well, these are socially good things that we should encourage people to support with their donations, and so we'll give them a break on their taxes if they do that.

That's the kind of thing a society can engineer, socially engineer, to try to get people to behave better. Same thing with crime. Okay, so crime goes up, crime goes down, it's not random. It depends on half a dozen to a dozen different variables that criminologists know pretty well.

And we can then tweak those systems. More police on the beat, less racial profiling -- as we saw that's a big problem in places like Baltimore. So we can change things one way, change them another way, to try to cause crime to go down, to try to cause police brutality to go down. And clearly it's never perfect, as we see. But that's the idea, the rational analysis of social problems.

Julia: Okay. At this point, let me just do a check to see if I'm understanding your basic thesis, and you can jump in and correct me if you think I'm wrong.

It seems to me that you're pointing to three different ways that science and reason, generally speaking, have increased moral progress. One of them being just a better understanding -- as a civilization, we now have a better understanding of what morality even *is*, because we now know empirical facts about the world, thanks to science, [00:10:00] that we didn't used to know. We know that people of different races are not inferior in the ways that would seem to give them less moral worth in our eyes. We know that God hasn't commanded slavery to exist as some virtuous institution, et cetera, et cetera.

Also, science and reason have evolved our understanding of how to think about moralities and principles of logic and reason like our inclination to try to universalize principles, to go beyond, this is just because it's what I want. And try to see things from a broader, zoomed-out perspective. That's one mechanism.

Michael: Yeah. That's right. That's perfectly said.

Julia: Excellent.

Michael: Yeah. Go ahead.

Julia: Well, let me give you the other two, and you can see if they're as perfectly said. The second mechanism is through an increase in individuals' capacity for empirical thinking, abstract thinking, et cetera, that helps them take perspectives other than their own, and do the kind of objective reasoning that's necessary for becoming more moral on an individual level.

And then the last mechanism is, indirectly, science and reason producing more technological progress, more economic growth, and those things leading to societies that treat people more morally for whatever reasons.

Michael: Yeah. That's about right on that last one. It is a more indirect measure. But again, the idea that a political system or an economic system is something we can study and understand is a scientific idea. In other words, it's not just the divine right of kings, forget that. There's no rational basis [00:12:00] or empirical basis to that.

What should we base it on? If you read Thomas Hobbes' great book, *The Leviathan*, it's considered the most influential political track ever written, that really started the whole study of political science. It's a 400-page massive book that starts with association of psychology, it starts with atoms in motion, particles in motion and how ideas are formed in the brain, how the brain works.

Now he didn't know much in 1688 compared to what we know today, but the idea is that he was tackling it like a scientist would. How do we get a political system? What is it? It's based on individuals. Who are these individuals? What is their nature? And so on. He builds a real scientific treatise on that. That's what I mean by about the scientific study of that.

Then back to your first point, I call that the witch theory of causality. If you believe that women cavorting with demons in the middle of the night causes the plague and the black death and crop failure and disease and accidents and disasters, then you're either insane, or you live 500 years ago in Europe when everybody believed in witches.

In part, the whole debunking of the witch theory of causality is what drove it to extinction. This doesn't work. It's demonstrably provable that women can't fly around on brooms, that there are no demons, that diseases are actually caused by germs, not by demons. Crops fail for reasons having to do with locusts and bad weather and droughts and things like that, and not because we prayed to the wrong God, or anything like that.

A scientific understanding of nature goes a long ways toward getting people to quit treating people in a certain way. In this sense, I'm saying that of course burning women alive is immoral by anybody's standard. In their time, they probably [00:14:00] saw it as something that was rational, like, we're going to save these people's souls. We're going to save our society from demons.

Julia: Conditional on their model of the world.

Michael: That's right. It was wrong. They were just simply wrong. Now of course the witch craze had other motives and people took advantage of it to exploit marginalized people and take their stuff. All that is true. But underlying it is the belief in demons, which is just a stupid idea.

Julia: It does seem like it would have been much harder for the witch craze to occur without an underlying warped model of causality.

Michael: That's right. The same thing with ISIS today, or any of the Islamic terrorist stuff that's so controversial. Yes, of course there are political and economic reasons, but those are secondary. Underlying it is this belief that there's a creator of the universe, he wrote this book, we have the right book, the other guys have the wrong book, and we have the right interpretation. If you don't follow it, the book says we're supposed to kill you.

Underlying all the secondary political economic reasons is this underlying supernaturalism, these superstitious ideas that are clearly false, and so that's what we have to debunk to get at making the ultimate change.

Julia: Right. Okay. So, I agree to a significant extent with each of those three proposed mechanisms by which science and reason advance the moral arc. But I also have some hesitation about each of the three of them. Let's just jump in and we can see if I'm misunderstanding you, or disagree, or what's going on.

Starting with the last one first, the mechanism of science and reason developing societies to become richer and better run. [00:16:00] I guess it's not clear to me that the texts that you've cited, like Hobbes's *Leviathan* and Adam Smith's *Inquiry into the Wealth of Nations*, that they were actually driving forces in those shifts in society.

It seems like countries have been trading with each other long before anyone articulated or named the principle of comparative advantage in trading. That there have been Leviathans, organizing centralized powers that essentially are given a monopoly on violence so that individuals don't have to use violence to settle their disputes. And that was happening for centuries and centuries before

Hobbes wrote *The Leviathan*. It's not clear to me to what extent the reasoning was driving the progress, instead of the other way around.

Michael: What you said is true. But of course there are good Leviathans and bad Leviathans. The idea of a liberal democracy grounded in the rule of law with a constitutional republic, or something like that, that's a more rational Leviathan, a fair Leviathan. A Leviathan that has checks and balances. More checks and balances in it than say an autocracy, a dictatorship, a theocracy.

A theocracy is a Leviathan with a monopoly on the, well, I don't know if it's a legitimate use of force, but it's their claim of legitimate use of force, but that ends up with a pretty high body count for citizens. What you want is a Leviathan that keeps law and order but doesn't kill too many of its own citizens. Which is what bad governments do, which was what autocracies and anarchies do, and theocracies and dictatorships do.

The idea is that over the course of several centuries, there's been different experiments, as it were, social experiments or political experiments, trying out different democracies. Now they weren't necessarily thinking, okay, we're going to try it this way and compare us to [00:18:00] Switzerland or something like that. They're just doing whatever they're doing. But political scientists can look across the landscape of political systems over 200 years and assess which ones work better or worse. And the criterion is the survival and flourishing of their citizens, how well their citizens do.

And you can compare, say, North Korea to South Korea, to pick the lowest hanging fruit I could find, as the most dramatic. A huge difference in civil rights and civil liberties and prosperity and literacy rates and food. Quality of food, the height, their health, infant mortality, the rights of women and minorities, it just goes on and on. South Korea is just orders of magnitude better than North Korea. That's an easy example.

Even a harder one like the difference between different European states. Say the difference between Norway and Sweden and Denmark versus Switzerland, Italy and Spain or something like that. The differences are much more subtle.

I like the idea of Sam Harris's multiple peaks on the moral landscape, that is in some cases there may not be one right political system. There may be half a dozen or a dozen different democracies, some of which are slightly better in one area, others are slightly better in some other area. So they're all good and they're all better than dictatorships, but maybe you like this one better and I like that one better. I like that idea.

And then finally, these are statistical arguments, like testing Thomas Friedman's idea that the world is flat -- that no two countries with McDonald's fight, or no two democracies ever fight.

Well, neither one of those claims is true. Some NATO countries that have McDonald's have had conflicts before. Certainly throughout history, lots of democracies have fought, including European democracies. United States' civil war as two democracies [00:20:00]. United States and England were two democracies.

There's lots of exceptions, but statistically speaking, there's a slight advantage to two countries both being liberal democracies -- that is, they both score eight or higher on the polity scale, which means all your citizens have the vote, the vote is fairly transparent and fair, there's not too much corruption in the democratic process, the voting process and so on. No two countries that score eight or higher on the polity scale of quality democracies are likely to go to war, compared to others. Now it's not impossible, it's like they're 83% less likely to have conflicts. It's a statistical argument.

As for trade, two countries that trade with one another are less likely to go to war with one another. Not impossible, because they occasionally do. Before the onset of World War I, lots of those European countries were trading with one another and then all hell broke loose. It's not impossible. It's not an absolute law of nature where if X happens, Y always happens. It's more of a messy social science statistical type argument. But the effects are definitely there.

Julia: Right. Going back to the moral peaks argument, this is actually a great entry into one of my confusions about the first mechanism that I named, which is science and reason advancing humanity's understanding of what morality is, or what we want morality to be.

I actually can't tell how much we disagree about this. But it seemed to me that you might be more optimistic than I am about how fully science and reason can determine the right answer to moral questions. And this might actually be what we had disagreed about two years ago at NECSS when we discussed the evolutionary science of morality.

It seems to me that you're correct that an understanding of human psychology and social psychology [00:22:00] and political science can help us eliminate some obviously bad, obviously dominated choices. They can help us eliminate choices in which a lot of people end up suffering a lot for no real particular reason, simply because we just didn't understand what would happen. Or choices that are based on a false model of the world.



But it seems to me that even, once you eliminate those clearly bad choices, we're still left with a huge amount of uncertainty about what the right choice is, even with a lot of understanding of how the world works and of principles like universalizability.

Michael: Yeah.

Julia: So, like, liberty versus happiness. Probably everyone agrees that all is equal, liberty is good. And that all else equal, happiness is good. But there are bunch of cases in which giving people liberty to make choices for themselves leads to reduced happiness, and then there's this question about how do we trade those goods off against each other? It's not clear to me that science and reason uniquely determine the answer to that. And it seems like that's a representative case.

Michael: Yeah. It's a good example. I'm not sure either that it can find *the* answer, but maybe it can help direct us toward some really good answers without saying one of them is the best one.

I like the libertarian paternalism idea of --

Julia: That's not a contradiction?

Michael: Well, maybe! (laughs)

Julia: I mean, I don't know, I was just asking.

Michael: I don't know if it's a contradiction. For example on the state of California here, where I'm from, I have to opt-in to donate my organs if I'm killed, by punching a little dot on my driver's license. In Oregon, up the road, you *will* be donating your organs unless you opt out. So they have a much higher rate of organ donation.  
[00:24:00]

Now as a society, I think that's a good thing, that we should encourage people to donate organs, without making a law that you have to. You still have a choice, although whether you opt in or out does tilt the incentives, because we know how human psychology works, people are lazy and they're less likely to opt out than opt in. I like that because there's a certain amount of freedom to do what you want, without too much state control leaning on us. So maybe that's another way.

Taxes is probably another example. Different states have different tax rates. There's a federal tax rate that we all pay and then different states. It's one thing to say well, you can move to any state you want. It's not so easy to do when you

have a family and a home and things like that. So, that's a little harder one, but at least there are some options there. The idea is of changing it, to see how it goes. To see if this tax rate brings in more business, that tax rate brings in less business. If you decide you want more or less business then that's what you got to do, and probably science isn't going to tell us which is the *right* one, but help direct us maybe, something like that.

With moral issues, what I've discovered over studying this for most of my adult life is there's no one right theory that fits everything. The Kantian philosophy versus John Rawls versus Aristotle. There's so many different ones, and they're all pretty good for covering a lot of things but none of them, utilitarianism, whatever, none of them covers everything. There's always the trolley problem, or the lifeboat story or whatever, that shows the flaws in each of them.

Okay. Fine. Not of them are perfect, but maybe we can use science and reason to help us see how all of them together can help us reach moral decisions, understanding that there is no absolute right or wrong, something like that.

Julia: Yeah. I think you and I [00:26:00] definitely agree that it helps. Honestly, I have a lot of uncertainty about the values of those parameters, how much progress we can make just through science and reason that we can all agree on, and then how much is left open to subjectivity or disagreement, without any real way to resolve it. I just don't know.

Michael: Just take, like, gay rights, which we're going through right now. There are a couple issues going on there. First, there's the debunking of myths about homosexuality – “It's a choice,” no it's not a choice, okay. Or, “They want to impose the gay lifestyle on straights.” No, they don't. They just want to be left alone to do their own thing.

Julia: There are totally some facts that are relevant there. I agree. Yeah.

Michael: Yeah. First, debunking those. But then you have what's usually under the rubric of philosophy: well, they should have the same rights as everybody. Well, why? Why should they have the same rights?

Well, I claim that we can actually make a biological argument, or what's roughly called a natural rights argument -- that they, by dint of being born human, they should have the same rights as everybody else. Regardless of whether it's a choice or not. On the one hand, I think it's good that it's not a choice, because that helps people be more accepting. But even if it was a choice, so what?

Julia: Yeah. That argument always bugged me. That argument that gay people should be allowed to marry *because* it's not a choice – that always felt a little

dangerous. Like, what if the science ended up showing that it *was* a choice? You've just set yourself up for ... you've made the wrong argument, basically, for the right side.

Michael: That's right. Here, I would argue natural rights trumps utilitarianism. That is, somebody could make the utilitarian argument that if we give gays the right to marry this could harm society as a whole. This *is* what they argue, that it's going to lead to polygamy and people marrying their sheep, or whatever. They're lame arguments.

But let's say they made the arguments, let's say it turned out it was true, okay, so what? They still have the right. Natural rights trump utilitarian arguments. The right [00:28:00] of the one worker on the track trumps the five workers being saved, that were going to be killed by the trolley car, in the same way that a doctor with five dying patients in five ORs, with one healthy patient in the waiting room, is not allowed to go kill the one healthy patient to save the five. It's illegal. He'd be in jail if he did that.

We've already made that decision, that the natural rights of an individual's autonomy, bodily autonomy and the right to live, trumps anybody's decision no matter how many people he can save. Even if it was 50,000, it doesn't matter. The one has the right. We made that decision. I think natural rights law, in that sense, trumps utilitarian arguments.

Julia: That's interesting, because I've definitely seen research suggesting that there's a correlation, on the individual level, between the ability to think abstractly and analytically, to think cognitively about moral questions and not just rely on your initial intuitive answer... That there's a correlation between that property, and giving the utilitarian answer on dilemmas like the trolley problem. So people with more analytical, meta-cognitive ability are more likely to say, yes, let's push the guy off the bridge to save the five children from being hit by the train, et cetera.

And so, this actually brings me very neatly to the last category of mechanism, which is a change in individuals' reasoning abilities, or tendencies, leading to more moral progress. Because, I absolutely see where you're going, that abstract reasoning ability is *necessary* for the ability to take other people's perspectives and ask yourself, well, do I have any rational reason for prioritizing dogs over pigs, in that I'm not willing to mistreat dogs but I am willing to mistreat pigs? Et cetera, et cetera.

So it seems necessary, but it doesn't seem sufficient. [00:30:00] It seems that after you pass a certain threshold of ability to reason analytically, there's mixed effects -- where to some extent, the ability to reason abstractly can allow you to

rationalize, for example, or allow you to bypass empathy or concern for natural rights, in favor of an overall utilitarian solution.

Michael: Yeah. I think that's right. It's not enough, it's not sufficient, it's not going to get us there. You still have to have laws, you still have to enforce the laws. People are going to do things that are irrational no matter how smart they are, because they can rationalize pretty much anything they want.

Julia: Yeah. Actually, you're the one I usually cite to make that point!

Michael: Yes.

Julia: Why smart people believe weird things. It's because they have the ability to rationalize.

Michael: That's right. Another way to think about it is, why don't we burn women as witches anymore? Now it's true that it's against the law, you can't do it, but that isn't *why* we don't do it. We don't do it because it never even enters anyone's mind to do it anymore, at least in the West. It still happens in a few isolated places here and there, in Africa.

I don't have to have the law telling me not to do it anymore, because it never enters my mind anyway. That's ultimately what we have to do, is change people's thinking about other people. Same thing with women's rights and civil rights, gay rights, animal rights. If you just think about Baltimore, Ferguson, all these recent events...

But we have to look back at, say, half a century to three-quarters of a century ago, of what inner city racial tensions were like. It was really bad. The racial attitudes that most people held, that they don't hold today. Most people are not nearly as racist as, say, my father's generation was. You can see that in pop culture, you can see that in TV shows and films and language, books, magazine articles, and newspaper articles, just how people talk about other people has shifted.

I saw an example of this recently at a [00:32:00] little talk I gave for Sunday assembly, that had a live band, and they played a Beatles song in sort of tribute to my book, which was the "It's getting better all the time" song. It's getting better, it's getting better all the time. Then John Lennon sings, "It can't get much worse," which is his way of keeping Paul in check there. His songs hold the optimism in check.

Then the next line is, "I used to be cruel to my woman, I would beat her and keep from the things that she loved." And I thought, holy shit, I forgot about that

passage! Would Paul McCartney have written that today? In 1968, that was a throwaway line. Like, no big deal, yeah, I used to beat my woman, whatever. Holy moly, you can't do that anymore. You can't sing about that. That's not a throwaway line.

Donald Sterling, the owner of the Clippers here in LA got heaped upon with hate because of these racial remarks he made in private. Most old guys like him back in the 50s used to think like that. Now fewer of us think like that. It's not gone, there's still racial attitudes that are not good, but it's better than it used to be.

Over the centuries, I'm claiming that just, that everybody, all of us have changed our way of thinking. And this is why changing language and the way we talk about other people does make a difference. The kinds of terms we use. I get that. I don't like it when the PC police go too far, but the idea behind it is right, that first you change language, and then you change thinking. That's what's been happening over the centuries.

Julia: Yeah, on that note, actually, there's a great satirical essay by Douglas Hofstadter, whose name I'm blanking on right now. But it's indirectly making the point that using gendered pronouns, and titles like Mrs. [00:34:00] versus Mr. are ... That it's actually absurd and once we step outside of the status quo, it becomes obvious that it's absurd.

And the way he makes this point is by using racialized pronouns. He's imagining, he's positing a society in which we use different pronouns depending on someone's race. And he's writing facetiously in defense of this policy, as if, Why would anyone have a problem with this? And it feels so jarring!

The analogy is obvious. And it becomes harder to see what the justification is for the gendered pronouns when we find the racialized pronouns so absurd. I think that's a great example of the abstract reasoning-type argument, that you argue has been instrumental in shifting our moral progress over the last few centuries.

Michael: Yup. That's right. And the next one is animals. Just the way we think about animals. It's influenced by the understanding of the evolutionary biology and the inter-connectedness of all species, and then especially of all the sentient beings, all the primates and the cetaceans like dolphins and whales. We're beginning to understand they're a lot like us.

Okay, it's true, they're a lot more different than us than, say, gays and blacks and so forth. But there's still connectedness there. Cognitively speaking, they can't speak and they can't reason like we can, but they can certainly suffer like we can. They can feel, they can sense, they can hurt. That's the basis, that's where we begin with moral concerns.

Our moral progress begins with, let's stop causing other people to suffer. And it was Jeremy Bentham that started that in the late 18th century, with his statement, really in a footnote to one of his great works: it doesn't matter whether they can talk or reason, but can they suffer?

Julia: Right.

Michael: That's where moral concern begins. [00:36:00] I'd be happy if we could retire those two chimps at SUNY Stonybrook that are in the news now. Let's just start with chimpanzees and gorillas and oranges, and then move our way down. We're not worried about rights of cockroaches to exist or anything like that, let's just -- one step at a time. We're a long way from veganism being the dominant thing, it's true.

Just things like Temple Grandin's work to make the slaughterhouses more humane. The whole thing is gross in principle, but it's gonna happen anyway, so let's just start this transition now. And we'll get there, maybe half a century to a century.

Julia: Yeah. It's interesting. I think that there is more understanding now than there was a generation ago that animals have some moral worth, and that their capacity to suffer matters, and it should determine how we treat them.

And yet, there's so much more factory farming and therefore mistreatment of animals at the hands of humans today than there was a generation ago. And I don't think that's because we're more callous than we were. I think it's just that we have more technological capability to cause that suffering now than we did before, and there are more of us.

Michael: More of us, more to feed. The population of the world back then, one or two billion which I think will be by 2200 so we're talking long-term here. I think that'll be a big part of the solution. Maybe synthetic meat.

Julia: Yeah. I'm hopeful about that. As long as we stop calling it vat meat, or even synthetic meat, we just need a better name.

Michael: What's it called?

Julia: I've heard people call it vat meat, like meat grown in a vat, which is just a terrible, terrible name.

Michael: That's terrible. Yeah.

Julia: Yeah. But so, here, I think this is interesting. As our ability to reason morally advances, at the same time, as technology advances, the potential [00:38:00] for any one person or any one society to cause huge amounts of damage, I think is going up. There's some saying, I forget who said it first, that every year, the IQ required to destroy the world goes down.

So I think there's two crosscutting trends going on here. I wonder whether you think that as science and reason develop further, we should necessarily expect the net result to be good, given the role the technology plays.

Michael: I would probably disagree with that generalization, whoever made it. Well, let me back up. Just take someone like Putin. He is kind of a 19th century throwback, old KGB guy. But the systems in place to keep him in check are far better than they were, say, half a century ago when Stalin was running the show. That is to say, just think about the chances of Putin cobbling together something like a USSR, swallowing up NATO countries like Estonia and Latvia, Lithuania. I think the chances of that happening are pretty slim, simply because NATO -- backed by America -- would stop him. I think he knows that. There's enough pressure against him, in economic sanctions. His economy is in the toilet now.

That's an example of other things that we could generalize about. What are the chances that any state would re-institute slavery as a legal institution? Pretty much zero. What are the chances of France and Germany going to war? France marching its troops through the Chunnel into England? These ideas are almost laughable now. Whereas it used to be, the last 500 years, the great powers of Europe were constantly at war with each other.

There's enough institutions in place like the UN. There's big trading blocks like the EU and NAFTA, that these things are in place [00:40:00] that make it, not impossible, but less likely, that anybody could get that much power. ISIS is bad, but the chances of ISIS successful creating a new country...

Julia: ISIS isn't huge on science and reason, mercifully! Imagine if they were really scientifically advanced, how much scarier that would be?

Michael: Yeah. Exactly. I think we will stop them. The idea of taking us back to the 7th century caliphate where no one has any rights and so on, I think that's pretty slim. I'm not terribly worried about it. It's bad what they do, we should do something about it, but it's not an existential threat to civilization.

Julia: Yeah.

Michael: I don't think, as the more checks and balances on anyone getting too much power has spread, there's now 118 liberal democracies in the world out of the

192 countries. 118, so more than half. A century ago, it was in small two digits, hardly anybody was. The more of those, the less likely there'll be conflicts.

Julia: We have about one minute left. I'll just amend my point a little bit, and then you can respond, and then we'll close.

You've been talking mostly in terms of states as actors. When I was talking about the potential for humanity to destroy itself, or wound itself grievously, I was thinking mostly of non-state actors, detonating a nuclear bomb, or creating a synthetic pathogen that's engineered to be as lethal as possible.

Or, actually, even of states unintentionally causing great harm. Like, I could imagine a state developing an advanced technology, like doing gain-of-function research in epidemiology, that ends up causing great damage to the world without anyone having been actively malicious.

Michael: Yeah. Again, not impossible, but far less likely than it used to be. [00:42:00] Just take nuclear weapons for example. In 1986 there were 70,000 active nuclear weapons, now there's less than 10,000. There's about 17,000 total, but only about 9,000 that are active and ready to go. We have about half of those, Russia has the other half – well, it's like 49%, 49% Israel and China and Pakistan, India, have a handful of the rest.

For the most part, one of the good things Putin does as an almost dictator, is keep track of his nuclear materials better than the previous couple of leaders, so at least there's that. It's less likely that terrorist could buy... and they can't develop it, developing nuclear weapons from scratch is too hard and expensive. They could still buy it on the black market, it's not impossible. But we have more controls. The UN keeps track of that stuff better now.

Biological weapons, yes, that's a concern. That's not quite as expensive to develop as nuclear weapons. There, I am glad we have something like an NSA that keeps track of some of that stuff, although I think they have too much power. That worries me.

Julia: Okay, well, on that uplifting note... We're just about out of time for this section of the podcast, so we'll wrap things up, and move on to the Rationally Speaking pick.

Michael: Okay.

[musical interlude]



Julia: Welcome back. Every episode, we invite our guest to recommend the Rationally Speaking pick of the episode -- a book, or a movie, or website, or whatever tickles his or her rational fancy. Michael, what's your pick of the episode?

Michael: Well, I guess my pick would be the book I'm currently reading, which is Jerry Coyne's new book, that just I think comes out this week, called *Faith Versus Fact*. Jerry is a real hardliner on this, [00:44:00] that religion and science are not compatible. The idea behind it, that the facts matter more than the faith, I think is pretty rock solid. And so that's my pick for this particular moment, *Faith Versus Fact* by Jerry Coyne.

Julia: Great. We'll put a link to that up on the podcast website, and I encourage all of our listeners to check out Michael's book, *The Moral Arc*. Michael, it's been a pleasure having you on the show. Thank you so much for joining us.

Michael: You're welcome. Thanks for having me.

Julia: This concludes another episode of Rationally Speaking. Join us next time for more explorations on the borderlands between reason and nonsense.