

Dwarkesh Podcast #92 - Joseph Henrich - The Church Accidentally Triggered

Industrial Revolution

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Dwarkesh Patel

Today, I have the pleasure of chatting with Joseph Henrich, who is a professor of human evolutionary biology at Harvard University and an author of two of my favorite books, *The Weirdest People in the World* and before that, *The Secret of Our Success*. And I was just mentioning to you that I remember reading this many many years ago when I was in college, and at the time, I didn't think I would get a chance to ask you questions about it. But the most proximal reason I wanted to interview you is, I recently had your colleague, David Reich, on and we were discussing certain things in the record of human history where he said, "Eventually, you're just gonna have to have Joseph Henrich on and ask him these questions, because he's the one who would know." So let me ask you one of the questions which I was super intrigued by which he raised, and we didn't come up [with] an answer to.

So one of the things he's discovered through his genetic evidence is that 70,000 years ago across Eurasia, there's so many different human species, from the Denisovans to the Neanderthals to the Hobbits, and then apparently, there's this one group, which was potentially the size of 1 to 10,000 people in the Near East, which subsequently explodes, and now everybody who's descended from Eurasia descends from this one group. And so I guess the question is like, what happened? What did they figure out?

Joseph Henrich

A typical assumption when people think about this, if you put it in the Paleolithic, they assume that it has to do with some kind of genetic changes. Now, Reich's lab, there's no obviously big changes in the DNA, so it's a little bit of a puzzle. Neanderthals, for example, had larger brains, and in primates larger brains usually go along with more computational abilities, more ability to solve problems. So the expanding variant out of the Middle East, out of Africa, might've actually been less able at an individual level to process information. But if you look back over the more recent period of human history, you can see that it's a story of expansions of different populations.

So for example, in Africa, we have the Bantu expansion about 5,000 years ago, which actually eliminates a whole bunch of hunter-gatherer populations that previously existed in Africa. We have the remnant populations in parts of the Congo, in the Kalahari, in the Hadza, for example, in Tanzania. If you look at the Austronesian expansion, so that's the peopling of the Pacific, that was the expansion of one group of people at the expense of others, and of course, the Neolithic expansion into Europe is another example.

So really human history is a story of these different expansions. And it could be that this expansion across Eurasia, which then led to interbreeding, so we know it's the same species. Humans interbred with Denisovans and Neanderthals, as well as probably other species - there's a ghost species in there. This could be just institutional changes, so if you have institutions, for example, that interconnect your population, you can maintain more sophisticated technology. And some paleoanthropologists, for example, have speculated -

with some evidence - that the expanding populations had projectile weapons, so bows and arrows. And humans have periodically gained and lost bows and arrows in different parts of the world. So in Australia, for example, bows and arrows are never invented. In the New World, populations probably didn't have bows and arrows, but then later develop bows and arrows.

Dwarkesh Patel

It's also really interesting how some technologies you would just think of as extremely... I don't know what the word is, but the new world, like not having the wheel or something. I guess it kinda makes sense with no domesticated animals, but again, it's like such a...

Joseph Henrich

Right. Although the New World, everybody has dogs, and you can pull carts with dogs. So I've never really bought that, and of course, you can, you can use llamas in the New World to pull carts as well. People do that today.

Dwarkesh Patel

Yeah, so what's your explanation for why there's no wheels in the New World?

Joseph Henrich

So there were wheels on Mayan carts or on Mayan toys. My explanation is just the collective brain. So almost every single first invention of something big that we think is important for humans was invented in Eurasia. And Eurasia, as Jared Diamond famously pointed out, building on other people's work, it's the largest continent by far. It has the biggest population. It's also oriented along an east-west axis, which allows ideas and people to more easily flow. And there's a belt, which the historian Ian Morris calls the Lucky Latitudes, which runs from basically southern China all the way through to the Mediterranean. And ideas are just flowing back and forth there, across the center of Eurasia. But you also ended up with more complex state bureaucracies and the kinds of things that allow you to organize and move people around and whatnot.

Dwarkesh Patel

And what's the explanation for why the collective brain leads to state capacity? Or is it the other way around?

Joseph Henrich

Well, you can think of institutions that eventually lead to state capacity as just part of the innovative process of the collective brain.

So if you have more groups experimenting with more different ways of governing groups of people, gradually, you get the accumulation of the pieces that you can put together into different kinds of states.

Dwarkesh Patel

Got it. Okay, so going back to what happened 70,000 years ago, is the basic answer like, it could be something like bows, but we don't know exactly what it was? Or is it -

Joseph Henrich

Yeah. We definitely don't know exactly what it was. So we know that this population expanded, and there does seem to be some tool indications to suggest more complex technology. Probably, technology usually goes along with social organization.

So for example, if you look at Australia, which is a continent of hunter-gatherers, there's an expansion about 6,000 years ago out of northern Australia which eventually takes up seven-eighths of the continent, and they had a new social organization, including rules about who you marry.

You had linguistic exogamy, and rituals that interconnected populations. So rather than having local rituals and local myths, many communities would get together periodically to initiate the young men, and this would help bond that whole group. There'd be an exchange of technology, and teaching that goes on at these... they'd spent a few months in the same place so there was a lot of time for transmission.

Dwarkesh Patel

And then in terms of mechanism, so, if it's the case that you have these sort of convalescing waves of expansion, and David Reich's lab's evidence suggests that this expansion was quite violent, based on whether the genes are passed down through the maternal line or the paternal line. When you think about the mechanism in which technologies develop or these social institutions develop, how much of it is like, look, there's all these different groups that are trying different things, and one of them maybe figures something out, and then they just kind of explode? And how much of it is that within each group, they are experiencing sort of accumulations of learning over time, and it's not necessarily a selective process, it's more of a sort of accumulative process?

Joseph Henrich

Well eventually the groups have to meet, and they're gonna compete over territories, and a bunch of different things can occur. So groups can copy each other. So we know that from the ethnographic record and historical cases, sometimes a group will say, "Oh, those guys have really good technology tools." Maybe they'll get some migrants, or something like that, and then they can adopt the practices. So that definitely happens.

But there's also plenty of evidence of violent conflict. And the Reich lab's evidence and lots of other ancient DNA suggests that there are these dead-end genetic lineages. So, I mean, the Neanderthals are a dead end in a sense, although we interbred with them, so they're in us in some sense, but they don't have their own pure lineage or anything like that.

Dwarkesh Patel

And if you had to guess, whenever this big wave happens, is it more of a sort of concrete technology? I mean, especially if you consider the range of expansion that can often happen, right? It's like literally that same group goes from Siberia to England. It's hard to imagine it's a single technology lets you explore this wide range. But it's also the idea that some cultural artifact is enough that it gets transmitted over tens of thousands of years and that's what gives you the edge. I'm curious how you think about, what could possibly be this driving engine?

Joseph Henrich

Well the way I describe it in *The Secret* is that it's a package of things. So another good example would be the Inuit expansion out of the north slope of Alaska. And they expand all the way across the Arctic and eventually get to Greenland. And they have a whole package of social practices which helps keep them interconnected, and then they have bows and arrows, which the group they are exterminating as they go along, the Dorset, doesn't have. They have dogs and sleds. They have, along the coast they have boats, so they're doing whaling. So there's a whole package that puts together that allows them to out-compete and eventually exterminate the Dorset.

And one of the things that happens, though, is the Dorset probably had better technology, but they expanded, they spread out, their languages diversified, they lost contact, and they began losing technology. So you wanna see this as a dynamic pulse. There were probably expansions and then collapses, another expansion, another collapse, right? It's not one giant long march to victory.

Dwarkesh Patel

And then this process, which has happened many times where the population gets cut off or something: When you say it's a sort of cycle, is there some reason why, over time, that knowledge gets fragmented and breaks apart and populations disperse?

Joseph Henrich

Yeah, I think there's a cultural evolutionary dynamic that's part of this, because languages will naturally diversify and then as they diversify, there's less contact. People sometimes get inclined to marry endogamously, and especially if there's enough people around locally, why go all the way over there? And those people are getting more culturally different, so they're seeming a little bit like outsiders...

So the tough part that humans have always had is to stay unified because of the natural effect of geography and learning locally is gonna tend to fragment us.

Dwarkesh Patel

In the Secret, you described this interesting startup problem where if you don't have that much accumulated cultural knowledge, developing the ability to do social learning isn't as valuable. But if you don't have the ability to do social learning, you don't have that much accumulated cultural knowledge in your tribe or group. So how is this problem solved?

Joseph Henrich

Yeah. So before I get to solving the problem, I just want to sketch for the listeners that the question is, why is this cumulative cultural evolutionary process that is so important for humans relatively uncommon in the natural world? It seems like just our lineage. I mean, there were a bunch of split-off lineages, but now it's just us.

So to understand that is this idea that you just mentioned, where you're imagining an increase in brain tissue that's gonna be costly, and I can put that towards individually figuring the problem out for myself, or I can put it into learning from others. And in a world without very much cumulative culture, there's not gonna be very much useful information in the minds of everybody else so I should use that brain tissue for individually solving problems. And so it's hard to get this runoff where their brains get bigger for the purposes of learning from others. And then the question is, how do you get past that valley?

So the case I make in Secret is that, say, three million years ago, two million years ago, there were several factors that came together. The first factor is the rate of change of environments. So you get this increase in the fluctuation of environments, so you're getting more environmental changes. And in cultural evolution, a lot of theory shows that there's a certain rate of change which is favorable to cultural evolution. It's gotta be slow enough so that the information of your parents and the previous generation is useful, but not so slow that you might as well just encode it in the genes.

So that's one. Second thing is, we're a ground-dwelling ape, which means we have hands like chimpanzees and gorillas, and we can potentially use tools and whatnot. But unlike them, our ancestors may have been savanna-dwelling apes, which meant we may have lived in large groups. So in mammals, mammals live in larger groups when they have to deal with predators and the predator guild in Africa at that point was quite thick. There were a lot of deadly predators.

So paleo-anthropologists think that our ancestors may have lived in large [groups of] savanna-dwelling apes. And if you have a lot of individuals, if the culture is sparse, the bigger the group, the more chance that there's someone doing something useful in the larger group. And so that means it's easier to get across the threshold. So those are three of the main factors that might have allowed our lineage, as opposed to all the other lineages around, to cross this. We're already a big-brained primate, we had hands, we're living in

these large groups on the savanna, and the climate changed during this period, so as to make us, yeah.

Dwarkesh Patel

And how big were these groups?

Joseph Henrich

Well, I mean, nobody's really sure, but maybe a few hundred individuals.

Dwarkesh Patel

Okay. And before the agricultural revolution, was there still this transmission of information across different groups?

Joseph Henrich

Yeah. So lots of different evidence suggests that groups were moving trade goods. So well back into the Paleolithic we see trade. Often we see some genetic transmission.

Dwarkesh Patel

Right, the expansions and so forth.

Joseph Henrich

Yes. And so, talking about the expansion, that's something where the ancient DNA is useful because the Neanderthals in Europe, the DNA suggests they lived in very small groups. But the DNA of the expanding groups suggests a larger population. So those would've been two different collective brains there as well.

Dwarkesh Patel

So in *The Secret*, you discuss a lot of these lost European explorers with modern technologies as of at least a couple centuries ago encountering peoples who have for tens of thousands of years discovered ways of hunting and processing foods and so forth that, without which even these people with modern technology will starve. And as I was reading that I was wondering: I'm not sure how I understand the process by which, if there's a 10-step process to making sure this bean is actually nutritious, and without any one of those steps, you might poison yourself or something. And at no point do you understand why this process works. You don't have a scientific explanation. How do you even learn that in the first place?

Joseph Henrich

Right. So one of the things we know, even in young children there's a tendency to preferentially learn from healthier, more successful individuals. So if you're processing it better - so something like bitter cassava, which has cyanide in it. If you just eat bitter cassava, it won't taste great. So if you then rinse it somewhat, it'll taste better and maybe

you could eat it, but you're going to accumulate cyanide over the long run. So it doesn't kill you right away. But if you do this whole long process that the populations in South America developed, then you're totally fine, you never get any accumulation.

So you can imagine that initially this is gonna be very strong and people are gonna sort of do sensible things... but then it gets a little more mysterious. And we know this because bitter cassava gets transported to Africa, and Africans immediately begin eating it improperly processed and getting goitre and the cyanide processing that goes along with it. So then that's gonna be a slow evolution where groups that do this are gonna be more successful and individual families are gonna be more successful. So, for example, you might have a household where they process the cassava more seriously than another family, and they're gonna have more kids and they're gonna be like, "Oh, that family's really good." And then people copy what they do in all kinds of ways, but one of them could be copying recipes.

Dwarkesh Patel

Hmm. I guess it depends on the mechanism of selection here, because when you consider the different ways in which two different individuals might be different or two different households or even two different groups, I guess it makes sense why cyanide poisoning is such a deleterious effect that it is a noticeable or quite a strong signal. But I think you discussed some other ideas in *The Secret* where it's like, the sort of spices in a region sort of match the antimicrobial properties or the antifungal properties you need to stay, I guess, clean or whatever in that particular region. But it sounds like a small effect, and how could such a small effect actually create a strong enough signal that when you're deciding who to copy, you notice that this family is healthier because they spice their food in a certain way? Or this group takes over the area because they've...

Joseph Henrich

Yeah, I mean, it has to be a big enough effect to matter, but I think if you go back to a world where there's a lot of improperly processed meat, people don't have refrigerators, and the leading cause of death in children is diarrhea. People carry high pathogen loads. If you can knock that pathogen load down, we know from modern research if you wanna make people healthier and even smarter, right? IQ goes up if you knock the pathogen load down.

Dwarkesh Patel

Got it. So this process of cultural accumulation you're talking about: you think it is not strong enough to pick up minor increases in fitness and it actually has to be quite a significant thing for it to...

Joseph Henrich

I think it operates a lot like natural selection, in the sense that natural selection will pick up tiny things if you give it long enough. Cultural evolution will do the same thing if you give it long enough, because just small differences in who you're paying attention to will affect

things, but it might take 1,000 years as opposed to decades, right? But we know culture can spread adaptive traits super quickly if it's a really big effect.

Dwarkesh Patel

Yeah. So the situation in which our ancestors found themselves, in some ways it's sort of like epistemic hell, in the sense of you don't know why certain things are working, but you do know that if you break with tradition, you might just doom yourself and your family. And that maybe, as you discuss, causes these religious beliefs and taboos and mystical understandings of the world to rise, where you just think like, "Look, you're gonna burn in hell if you don't do this 10-step process for refining your beans or something." In some sense, this requires you to abdicate reason because you have to just be like, "I don't understand this. this is the way it's been done, so we're gonna do it." Basically: how much reason do you necessarily have to abdicate to survive in the ancestral environment?

Joseph Henrich

I mean, one of the ways we research this is by going out to societies that make bows and arrows or have food taboos that protect them from dangerous marine toxins and ask them questions about why they do it and see if they [understand] and they don't understand the underlying causal stuff.

Dwarkesh Patel

Right. But then why do they say they do it?

Joseph Henrich

Well, a typical answer is, "It's our custom." or "It's important to people around here to do it this way, so we do it this way." So just Hadza bows, for example - I didn't do this research, Jacob Harris and Kim Hill and Rob Boyd did it - but they asked Hadza about their bows and about how they work and what the mechanics are, so they understood some stuff. So you use the bow and you get some mechanical understanding. But if you asked him, "What if you used a different wood, different materials," and they had never tried anything else but what they learned, how to make this bow. So they couldn't speak to a lot of that stuff. And the things about the compression of the wood is very important - didn't understand that.

Dwarkesh Patel

Okay, so that's quite interesting, right? Because you would think that you have to transmit cultural knowledge over time, but you also need to experiment in order to innovate. But it sounds like because of the belief in these customs, you would be less inclined to innovate.

Joseph Henrich

Right. And the thing is, once something gets good, doing it differently almost always makes it worse. And then there's also, some things are just different because people do it randomly

different, like they make a mistake. So I think people often underestimate the power of error in generating novelty.

Dwarkesh Patel

One question I have is why this process of cultural learning... So humans have extended childhoods, presumably to give us more time to accumulate culture, and then we live after menopause, presumably because older people, our grandparents, can teach us about the situation we find ourselves in. And 18 years is such a long time, and when I think back to – I mean, obviously I didn't grow up in the ancestral environment, but when I think back to what I was doing as a teenager I don't think I was learning that much. I was just less productive for no obvious biological reason. So I guess I don't intuitively understand why this process of cultural learning takes decades, and why it can't happen more rapidly.

Joseph Henrich

Well, you probably, as an adolescent, were in school, right? So you were probably accumulating some stuff in school – maybe. And here's an interesting fact about hunters. So anthropologists who studied hunters, hunter-gatherer societies in different places, and the physical peak that at least males have is in their early 20s, right? That's when they run the fastest. They got the best eyesight. But the best hunters in the community are 36 to 40, right?

They're not as fast as those guys, but they just know, they know the track, they know the animals, they know exactly what to do in these different – And then hunting skill begins to decline because basically the physicality of things begins to catch up, and so there's this kind of cycle. And at 18 young hunters aren't even producing enough food to feed themselves. So it's not until they get into their 20s that they're actually in surplus and bringing food home for everybody else. And you need to know hundreds, at least, animals, you need to know animal behavior, you gotta be able to spot tracks and spoor, and we're just very knowledge-dependent in terms of our hunting and gathering.

Dwarkesh Patel

Yeah. Given what you just said and also the experience of these European explorers suggests that you just gotta know a lot of shit to make it in any sort of environment on Earth. But then, there's all these other animals and they seem so dumb and they seem able to get by. So why did humans have such a hard time of it?

Joseph Henrich

Yeah, well, so I think we offloaded a lot of stuff into culture. So in one of my Lost European Explorers, there's a case where they're in Australia and they have camels. And the camels escape, and now central Australia has lots of feral camels. So the camels survived the lost European explorer challenge, because they have innate instincts. They can smell water a mile away. They can detoxify foods in their own – they have a complex digestive system that

detoxifies - we've lost all that, and we're worse than chimpanzees at detoxifying foods because we have all these cultural practices that do the work. So we've externalized detoxification and a lot of digestion, actually.

Dwarkesh Patel

I had this independent researcher and internet writer called Gwern Branwen on my podcast a couple months ago, and we were discussing AI. And I asked him - so his theory is very much like the brain became bigger, more intelligence. And so then I asked him, "Look, if it's this simple, why did it take so long for evolution to discover intelligence in the first place?" And he had this interesting answer, which is that in terms of the signal that evolution is giving you, there's a very narrow gap between skills that are so useful that they should just be distilled as an instinct into your genome, and then skills that are so worthless that are not worth learning in the first place. And so this narrow gap that's like, you need that generalization ability. It's not so primal that, you know, you're not gonna culturally learn hunger, it's just gonna be in your genome. I don't know if that sounds like an interesting explanation or helps explain anything.

Joseph Henrich

Well in cultural evolutionary models, a typical thing would be to let genes compete with individual learning to compete with cultural learning. And it turns out the rate of change of the environment affects that. So if the environment is changing slowly, then you should put it all in the genes. And if it's changing at moderate speed, then culture is the best way to go, and if it's fast, then individual learning. And the idea, the individual learning is favored because if it's changing too quickly, the previous generation doesn't know anything worth knowing because the world you're dealing with is just so much different from their world. And so it's this intermediate range.

So myself and others have argued that the increase in the frequency of change during the Plio-Pleistocene transition 2.5 million years ago is a change that increases the value of cultural transmission of learning from others. I'm not sure what your guest was thinking. I mean as our brains are not very good at solving problems, otherwise the lost European explorers could survive. And human brain size has been declining for the last 10,000 years. So we've actually been getting dumber. Fewer neurons, less computational power.

Dwarkesh Patel

Why has brain size been declining?

Joseph Henrich

Well, the collective brain argument suggests that at a certain size, you'll begin farming off specialists. So because there's a store of knowledge in the society, and we can all be generalists and learn how to do all the different skills. But at some point it makes efficiency sense for us to specialize in different skills.

In order for that to be the case though, we have to have social agreements of some sort that allow us to trade or exchange things like that. So, but then once we're specializing, we don't necessarily need as large a brain and we, because we distribute the overall brain power amongst the society. So it could be that we're becoming more of a superorganism. And you see the same thing in ants. When ants get specialized occupational casts, their individual brains shrink.

Dwarkesh Patel

Yeah. I think David Reich's lab had a result a month or two ago where they showed that the selective pressure on at least the European samples, which is the samples they studied, was that there's been selection for greater intelligence over the last 10,000 years. I don't know if you saw that or what you make of that?

Joseph Henrich

Well, they didn't say anything about intelligence. They did use the polygenic score for education. But there was no education 8,000 years ago.

Dwarkesh Patel

Which is correlated, right?

Joseph Henrich

Yeah, it's correlated. But then the question is, we don't know what goes into that, right? Is that actually computational software? I mean, people do well in school because they stick to it and they can sit in the same place for long periods of time.

Dwarkesh Patel

I guess it would be interesting for them to sort of deduct the docility hit polygenic score from the education, because we don't have a polygenic score for intelligence yet, right, so which is why you need some proxy.

Joseph Henrich

Well there are IQs, so there are polygenic scores for IQ. I think they actually did that one as well, like you said, it's correlated with education. But the things that go into giving you an IQ, I mean, the correlation between brain size and IQ is only about, well, across populations it's .24, so it's not very big.

The other thing is IQ is massively misunderstood, so the way to think about IQ, which has been going up over the 20th century, by quite a bit, so if you rescale modern scores to 1900, it's about 70, it's called the Flynn effect. I think that those are cognitive abilities for navigating the institutional world that we've constructed.

And a huge mistake would be to assume that those are the right cognitive abilities for the next century. So it'll be a different constellation. We study herders and cognitive abilities of herders in northern Namibia, and if you're in northern Namibia, you gotta be able to move through the landscape, so being able to just pick a direction and know where you're going and not get lost is super important.

So different suites of cognitive abilities are favored in different environments. This idea that there's this generalized thing applicable across all human environments just doesn't... I mean, education massively increases your IQ, right? If you're uneducated, you have a totally different IQ.

Dwarkesh Patel

And then is the way in which your horsepower is directed, is that a thing that you think is basically set by the time you're an adult? Or, if somebody's 30 now and the AI thing is gonna happen next and they have to totally reorient away from knowledge work, is that a thing?

Joseph Henrich

Well, I think it's a continuous scale. If you look at human brains, they're developing and continuing to add new connections and stuff, at least into the mid-20s. Now, there could be even more plasticity after that. Unlike chimps, we're still not totally myelinated for our whole lives. So there's definitely room. It's just there's less room.

Dwarkesh Patel

The kind of social learning for which our learning biases are fit, right? Like where you pay attention to elders because they survived somehow and they've accumulated the knowledge from past generations, how much do you think that actually basically applies to the way in which the modern knowledge work economy accumulates knowledge? And how much do you think is just an artifact of the kind of environment our ancestors found themselves in? Right now we're in Silicon Valley, or in San Francisco, and it's very common here for a 20-something to make a new product or service which, without that much - they don't have that much context of how the world works, but they can make big, big innovations and big changes. But at the same time, people on average maybe are more productive in their 40s and 50s in terms of wages or something. So basically, this sort of social learning you're describing, how much does it actually describe the world as it exists today?

Joseph Henrich

Yeah. And so, super important, so we'll take the patent database and if your same-sex parent - has to be same sex - patents in a particular domain, you're nine times more likely to patent in that same domain.

Dwarkesh Patel

And how do you separate the genetic versus cultural effect there?

Joseph Henrich

So these are very fine domains, so we're talking about, like, natural adhesives versus synthetic adhesives. So unless you think there's genes for that. And same thing with transistors and electronics, so very fine domains. And if you grow up in Silicon Valley, you're much more likely to patent, in general, but you're probably gonna patent in computers. But if you grow up in Boston, it's gonna be biotech. So having a father or mother who did biotech and then growing up in Boston, you're even more likely to patent in biotech. And this is true even if you move to New York. So if you look at people in New York who are from Silicon Valley and from Boston, the Bostoners are more likely to patent in biotech, and the Silicon Valley kids are more likely to patent in computing. So all the same rules apply.

Dwarkesh Patel

Well, I'm not sure because maybe the location, you learn a lot from the environment. But the fact that it's just kids, and so, if you think these old rules of cultural accumulation and collective brains apply, you would think, "Ah, you're 50 by the time you're writing your first useful line of Python code or something." When in fact, a lot of these big innovations come from people who are much, much younger, before they should have accumulated much of the know-how that this theory implies.

Joseph Henrich

So the model here is what to focus your efforts on, so it's the throwing model. So if you grow up in Silicon Valley, you focus your efforts on learning how to code or whatever. And so that means that's where you're likely to make the innovation.

Dwarkesh Patel

Right. But in terms of, you know, when there's 2% growth a year and a lot of the technologies that are dominant in the economy today, or a lot of the industries, didn't even exist many generations ago. Basically, does that suggest this model of - should we just mistrust our instincts of who to give prestige to and what kinds of people we want to pay attention to, whether it's professors or elders or whatever?

Joseph Henrich

Yeah, so that's definitely something I've thought about and I wrote about in *Secret*, which is that, as the rate of cultural change gets faster - and we sort of talked about this with environmental change - the value of older and older members of the previous generation declines because the world that they grew up in, and that they honed their skills to, is quite different from the current world. So you would expect the degree to which, I mean, optimally, you would look less far back or you would look to relatively younger individuals to

get your inspiration from because the world they adapted to is closer to the world you're gonna need to adapt to.

Dwarkesh Patel

Yeah. And speaking of Silicon Valley, let me ask you a little bit about AI. So one of the reasons to suspect some incredibly sharp discontinuity from the world as it exists today to a world with AIs. And by AI, I don't mean just, like, GPT-4, I mean, like, replacement at least for anything you can do on a computer screen, the AI can do.

One of the reasons we expect this hard discontinuity is that they have potentially the step function increase in social learning and the ability to accumulate knowledge that maybe humans had, or the magnitude of which maybe humans had when, between them and non-human primates. And in particular, the fact that you can just copy everything you know. Like you don't have to teach a young person, right? The constraints of biology mean you can't just replicate brains.

You have much more efficient communication. You don't have to communicate through words, you can just shoot your brain state across, the population size can grow arbitrarily large. So to the extent of, the collective brain is the size of the population and how interconnected it is, do you just expect we wouldn't even recognize the kind of world these AIs could make as a result of their cultural skills?

Joseph Henrich

Yeah. No, I mean, I, I definitely think it's pretty interesting, and holds great potential for expanding the collective brain. There are little things in there which might make one worry. So if you study the history of innovation, you find out that, for example, serendipitous meetings are super important. There's a great paper on Silicon Valley showing that companies will cross-reference each other's patents more likely when the people at those companies tend to frequent the same coffee shops, and they track people on their cell phones and stuff to figure this out. So serendipitous meetings are important and improper copying. So a huge number of innovations are mistakes where somebody copied incorrectly and then got something better.

Dwarkesh Patel

I read this interesting theory that maybe evolution designed transcription and translation to have more errors than it could otherwise have, just so that you can have this sparse reward when you're close to the right sequence.

Joseph Henrich

Yeah, yeah. I think that's a very interesting area of research, and it makes good sense to me.

I'm not sure of the current state of the evidence, but there are... Different parts of the genome are more or less susceptible to mutation, which is kind of interesting.

Dwarkesh Patel

Yeah. So going back to AI, maybe then another way to phrase it is, look, you're talking about these serendipitous meetings where you can learn something another person knows. And the great advantage these AIs have is that they can sort of meet with everybody at once. Future versions of AIs, you could really imagine holding the whole internet in context, right? I mean, we'll be the equivalent of those people isolated in Tasmania according to the AIs, right? Because they just have everything in context. You can get a PhD in every single field, and you can amortize that across all your copies.

Yeah, so are you sort of banking on, in the next 10 years, you're just gonna be living in the singularity or something because of your belief in the value of cultural knowledge?

Joseph Henrich

Yeah, I see there's various potentials, and I'm particularly interested in using AIs to augment problem-solving in human groups. So you can imagine getting the humans together because the humans have the big advantage of having stuff they care about, right? There's stuff they want to invent. So the AI is still a tool at some point. So I'm interested in that, but I'm interested in how these things like running out of training data is gonna be dealt with, the value of making mistakes and serendipity, if you get rid of all those things or how you're gonna reintroduce them, those kinds of things.

Dwarkesh Patel

Yeah. I mean, it's quite funny because until recently, people were saying the big issue with LLMs is that they hallucinate and make mistakes. And at some level, hallucination is no different than creativity.

Joseph Henrich

Well, may - maybe there's a way to harness that, right? But maybe we just didn't know how to harness it.

Dwarkesh Patel

That's right. What do you make of the idea that you could have AI firms or AI tribes, whatever way to think about it - is if the effective population size that can communicate with each other is such an important contributor to how much progress a group in history was able to make. If you could just literally run billions of AIs and they have this immediate ability to communicate with each other. And again, I'm not talking about current models, I'm talking about future, human equivalent. Basically I guess I'm just throwing out a bunch of different intuition pumps and I'm curious which one you find most promising or most interesting, or did you just find all of them not as convincing?

Joseph Henrich

Yeah, no, I don't have strong opinions about any of this, but I do think that one thing in order to make all that work is, humans are constantly getting hit with shocks, right? So there's economic shocks, there's weather shocks, there's conflict with other groups, there's pandemics. And the shocks have big effects on how things go. They inject new information into the system. So I'd worry about a system that is too homogeneous and doesn't have enough noise adding shocks and new challenges and things like that.

One of the things missing from our conversation is the kind of creativity that cultural evolution has figured out. So to give you an example, at some point in human history, religions invented big, powerful, moralizing gods. And this may have increased the people's ability to cooperate. So forget about the technological element. Some of the most important features of innovation over human history have been institutional and things that get people to cooperate.

So in my work, I argue that one branch of Christianity resulted in the transformation of the families in European societies into small monogamous nuclear families. I'm not sure an AI would have thought of that. Cultural evolution thought of it because of how it affected how the societies operated, so it sorted this out over historical time.

Dwarkesh Patel

Yeah. Can I play with that idea?

Joseph Henrich

Yeah.

Dwarkesh Patel

Because that's quite interesting. So again, I think this might even reinforce the advantages of AIs in this sense. So, to the extent that this sort of random fluke by the church led to this modernity and the great divergence or whatever, and it was a result of, there's a bunch of variation, and then you can select over some group that's doing the right thing.

The advantage you have with AIs is that you can have much more high fidelity replication of culture and you can explore a wider range of potential cultures. Sorry, and it sounds really vague when you talk about AIs in this way. So what do I mean? One problem companies have today is that, suppose a company's working really well. Maybe it's early Apple, or early Tesla, or SpaceX or something. And suppose it has to do with the culture, the people, something, it's not clear how you replicate that culture, not only across different institutions, right? If I'm running a company, I don't know how to copy SpaceX. Not only can you not replicate it across institutions, you can't even replicate it across time.

So over time, many institutions tend to decay, their culture fades as people leave or die or something. And then imagine if all of SpaceX, at least maybe at the time you thought it was the most effective, are just AIs where you know every single byte, and when you can make a copy of it 1,000 times, and you can put it against every single hardware problem we have in the world. And then you can, if you think there's another team that might have some different culture which is better, you can do the same thing with them. And culture here includes not only how they think about their work, but also even how does the board make decisions, right? Do they do this Monte Carlo tree simulation? And there's so many different things you could do here. So because of the wider range of possibilities you can explore and the fact that you can have higher fidelity transmission of cultural information, maybe the ability to do this random evolution also increases. But I'm curious to get your take on that.

Joseph Henrich

Yeah, as a kind of broad sketch, I think that is pretty interesting. I worry about too high a fidelity replication just because it's important to take the details of historical context and time into account. So that same thing, if you fix it, it might not really work a decade later when everything else around it has changed, right? So it's kind of a moving target. But you could fix that just by having lots of different variants that are different versions of that. So yeah, that would be cool.

Dwarkesh Patel

Sorry, that gives us a good opportunity to go into WEIRD. But before we get there, one more question about before the agricultural revolution. You know, obviously many groups around the world were different and many of those differences were probably inspired by the fact that they were living in different environments, so they needed to come up with different technologies and adaptations to survive best there. How much just random differences that had nothing to do with their environment do you expect there to have been, in terms of... I don't even know what the right category would be, but in the modern world, you might imagine something like, does a society have slavery or not? And maybe pre-modern societies all had slavery, so that's not the right way to think about variation, but that kind of...

Joseph Henrich

Yep. So I think there's lots of reason to think there was lots of variation. And one of the ways that researchers study this is they look at ethological variables and they compare it to phylogenetic variables. And here they mean cultural phylogeny.

So if your ancestral populations had matrilineal, matrilineal social organization, how likely are you to have it, controlling for ecology? And it turns out both of these things matter. People adapt to their ecology, but you can still see the signal of past society. So some degree of fidelity of transmission of social institutions, how we make our baskets, those kinds of things. There's lots of examples in the modern world, and we see this all over the

place. So if you look at gender inequality in the modern world, you find that a history of the plow leads to greater gender inequality. So males had a particular advantage in using the plow because it requires upper body strength.

This meant males became the dominant force in economic production at the household level. And that even today in populations where most people aren't farmers, this persists. So this is cultural persistence that has to do with whether you had the plow. So this is work done by Alberto Alesina and Nathan Nunn. A former postdoc of mine now at the Harvard Business School, Anke Becker, has done a similar thing with pastoralism. So if your ancestors were pastoralists, and pastoralists, for various reasons, have quite strong gender norms that persists into the modern world and still shapes, for example, female entrepreneurship.

Dwarkesh Patel

Interesting. Yeah, and the reason I'm especially curious about this is because it informs the following question. If the Industrial Revolution didn't happen in Europe but started somewhere else, how different would the world look like today? So obviously you discussed the fact that breaking apart these kin ties was necessary for the Industrial Revolution, but to the extent that was necessary, whichever place had the Industrial Revolution first would have had that, right? But, I mean, separate from the technologies or cultural practices which were necessary for the Industrial Revolution in the first place, still how different would the world look? How much variation was possible given our level of technology?

Joseph Henrich

Yeah, I have a lot of trouble trying to answer that because, I mean, China or some place in the Middle East might have been the obvious alternative place for the Industrial Revolution to happen. But I feel like you have to give those places a lot of stuff that developed only in Europe.

So for example, universities begin spreading in the High Middle Ages. So you'd want them to have universities. You'd want them to have universal schooling, which began to spread and wasn't present in these places prior to that. So that begins to spread in the 16th, 17th century. And so by the time you add all this stuff, it basically starts to look a lot like Europe.

And these are all things that are global now, right? So the universal schooling that we find around the world today, you know, begins with the Protestant Reformation in Germany and then later England. University's models are the European university, and globalized.

Dwarkesh Patel

I guess one obviously very salient example of variance which might not have been replicated, but I'm curious if you think it might have been, is, it seems like the British Empire was the first major institution which decided that slavery is just morally wrong and we're

gonna throw our weight around to eliminate it. And I don't know if you think that sort of naturally follows the development of social technologies that the Industrial Revolution would have brought about, but that seems super contingent. But I'm curious if you disagree.

Joseph Henrich

Yeah. Well, so my story is that the rise of the Industrial Revolution in Europe has to do with the consolidation of Europe's collective brain. And one of the things that requires is trust in strangers, and at least the beginnings of moral universalism.

And it's that moral universalism that eventually causes the British to say, "We've got to stop with the slave trade thing." It's a moral decision that they made because it's no longer consistent with the changing moral values over time.

Dwarkesh Patel

Right, right. Okay, so we've been dancing around the thesis of your book following *The Secret*, which is *The Weirdest People in the World*. And before we really jump into it, maybe you can give me a summary of what the thesis there is.

Joseph Henrich

Yeah. So the first observation is that there's a great deal of global psychological variation around the world. So European, American, Australian populations tend to be highly individualistic. They're inclined towards analytic thinking over holistic thinking. They have a lot of impersonal prosociality, so trust in strangers. They're against conformity, willingness to cooperate with strangers. So the question is, how can we explain the global variation in these features of psychology?

And towards the end of the book, I actually connect these features of the psychology to economic differences, including the Industrial Revolution that happened in Europe, which reshapes the world. And the story is that the key event is the spread of a particular form of Christianity into Europe, where the Catholic Church - what becomes the Catholic Church - systematically dismantles the intensive kinship systems in Europe, leading to small monogamous nuclear families.

And this transformation leads to the creation of new institutions. So by the high Middle Ages, you get the rise of guilds, which are voluntary groups of craftsmen and self-help societies, because people don't have their families to rely on. People begin moving around. There's occupational sorting into different occupations. You get urbanization rising. Charter towns are on the rise. Universities pop up. New kinds of monasteries pop up. And then Europe begins to urbanize, and you get new kinds of law that are based around the individual. Contract law. And then eventually this leads to a lot more innovation because ideas are flowing around Europe and then eventually the Industrial Revolution. So that's the argument in a nutshell.

Dwarkesh Patel

Can you explain again what exactly the Church did which led to the kin-based existing system breaking down?

Joseph Henrich

Yeah. So the Church outlaws polygyny, and so that stops elite males from having multiple wives and concubines and whatnot, and creating kind of a giant family through that. It outlaws cousin marriage going all the way out to sixth cousins at some point, and that included spiritual kin and other kinds of non-genetic relatives as well as the cousins. It frees up inheritance, so it has inheritance by testimony rather than normal patrilineal inheritance. And a simple example here is in most societies, you inherit access to land corporately, which means you and your brothers and stuff all own the land. And it might be your uncle is actually in charge of the land, your father's brother. And so you can't sell it, you can't move it around, and you're also tied to it. It's where your ancestors are buried, and so there's this big importance of land. So the Church allows people to give land to the Church, the Church becomes the largest landowner in Europe, because you can do it by testament.

So those are just some of the examples of the ways it transforms the family structure, and eventually you get these monogamous nuclear families which are basically unheard of around the world, at least if you look at the anthropological record. And you can really see this when you can compare, individuals can move to European cities as individuals or nuclear families. In China when you move to the city, you maintain contacts with the folks back home in the village, and people flow back and forth and you get these little enclaves of different clans and stuff in the cities, the connections. And this is really important because your ancestors, and there's rituals that have to be done back in the home community. But Christianity does away with all those ancestor rituals.

Dwarkesh Patel

Okay, great. Let's jump into it by starting before - much before - even the church. I wonder how much of the things that make Europe weird existed even in antiquity. If you read about how Roman society worked, or how these Greek polities worked, already you have an emphasis on nuclear families. You have these sort of universal norms around, "Hey, we believe in republicanism," or, "We believe in democracy." And the structure of the system matters more necessarily than... I guess at least before the empire, right? So yeah, was Europe already weird before the things that its church did?

Joseph Henrich

Well, there were certainly some interesting things going on in Greece and Rome. But I don't think there's good evidence that you had the kinds of monogamous nuclear families that you would find later. I mean, even European law is built around patrilineage. So if your father's still alive, you are not a full citizen. You're in the pater house of these large families. Definitely intensive kinship, for sure, patrilineal, patrilocal.

Women, of course, don't have any rights. And republicanism, but the formation of Rome is built around a series of elite families. So it's a clan operation, and they call it republican because the clans all have some say in what's going on. So people sometimes see representative government where it's not really individuals being represented, but families. And so this fools a lot of people into thinking there was a lot more individualistic voting and things like that, whereas there's actually no voting. So in Greece, in Athens, Athens is unique because it does a bunch of things in the laws of Solon, that break down the intensive kinship. So for example, in Greece, you get monogamy for the first time, and Athens is considered unusual. So males can only marry one Athenian woman, which has potentially positive effects among the competition among Athenian men, but they can have as many slave concubines as they want. So when Christianity spreads, it ends the whole slave concubine thing, which was also common in Rome, and that's another effect on this whole thing.

Dwarkesh Patel

Yeah. But I guess the extent to which these practices were already formed hundreds or thousands of years before the church's intervention, maybe this suggests that Europe was already on this trajectory and the church didn't necessarily move the needle that much. Or what do you make of that thesis?

Joseph Henrich

Well we know that the... in the book, I talk about data where we can look at contemporary kinship practices, and we can look at the number of centuries that that part of Europe was under the church... so we have a database of the diffusion of bishoprics, and there's a clear connection between the intensive kinship practices and the number of years under the church.

Dwarkesh Patel

Hmm. And then if you think about what the church basically did, I think your work is often used to justify this idea of Chesterton's Fence, where if you don't necessarily understand a cultural practice, you should keep it around because... the stuff we were talking about, The Secret, where you don't understand why the 10 steps lead to the bean being edible, but you should trust the sort of wisdom of the ages.

If you think about what the church did here, right? Like, isn't this sort of like a... not necessarily a justification, but at least an example of just breaking down Chesterton's Fence? The church doesn't really understand why these kin-based networks that have existed for thousands of years might have utility. It still just gets rid of all of them. And that results in this lottery ticket that leads to The Great Divergence. So is there evidence for anti-Chesterton's fence from the Weirdest People?

Joseph Henrich

Sure. Sure. So what you're talking about is just the idea that culture has imbued institutions and various practices with a logic that we might not understand. So it's not calling for never changing the institutions. It's saying make sure you figure out the logic and the cost and benefits.

So I was an expert witness in Canada for the attorney general of British Columbia, asked the Supreme Court of British Columbia, whether the statutes against polygyny were legal. And so my job was just to inform the court that polygyny has this unfortunate effect of the elite and high-status males tend to get a disproportionate share of the wives, and that creates this pool of low-status unmarried men.

Now you can decide what you want to do with that. But you need to understand the kind of underlying social dynamics that you're gonna unleash if you legalize or decriminalize polygyny.

Dwarkesh Patel

Right. But again, going back to the Church, the Church didn't understand the positive or negative effects they're gonna have, right? They just like, "Let's rip the Band-Aid, let's see what happens."

Joseph Henrich

That's right. And it actually benefited the Church because it released people's responsibilities to their families and allowed them to migrate in and join the Church, and more heavily invest in the Church. And these later prohibitions against priests marrying and stuff was all an effort to get greater investment in the Church, because you weren't torn between helping your son and then investing in the Church.

Dwarkesh Patel

Hmm. And then that end result which benefited the Church, was that their conscious intention in breaking apart these kin-based ties? Or was that just the accidental byproduct?

Joseph Henrich

Yeah, I mean, in the record, I've never been able to find much evidence that they were thinking about the destruction of kinship ties. There is a great quote from Saint Augustine where he talks about the benefits of forcing people to marry more distantly. But, you know, this is something that was debated repeatedly in church councils all across Europe. And it doesn't seem to pop up very often.

Dwarkesh Patel

And the Church doing this, for obviously selfish reasons, was that in any way related to why the Church spread through Europe in the first place? Or did it end up spreading for separate

reasons and it won out over the other potential religious competitors for separate reasons? And basically, was this part of the selective mechanism which allowed the Catholic Church to become dominant in Europe in the first place?

Joseph Henrich

Yeah, I think so, although it's hard to know. There was a lot of randomness going on in the diffusion of the Church. But also as the Church arrived, these places, over a period of time, became more successful. So you can see rising urbanization in the wake of the Church's arrival. That would have meant more trade, their citizens' rights began developing because they were trying to attract citizens to the towns. That would have given the Church more cachet, ability to move. There's also the appearance of these voluntary associations which are new kinds of monasteries. And so the monasteries begin spreading throughout Europe. But they're all linked in a network because, like the Cistercians, they're all connected and they have big meetings. So they're actually spreading a lot of knowledge around Europe as well. So that's part of this kind of collective brain story.

Dwarkesh Patel

And if you compare what's happening in Europe at this time to the rest of the world, so starting with China: in 1500, the population of England, where a couple centuries later the Industrial Revolution starts, is three million, and then in Ming dynasty China, it's somewhere between 100 million to 160 million. And if we take your previous perspective of the size of the collective brain really matters a lot, the size of the collective brain in China just seems so much bigger. So what is the best way to understand what went wrong here? Why weren't they able to use their...

Joseph Henrich

Right. So when you're thinking about China, the first thing to remember is that for a lot of the history, we can actually see that size difference mattering a lot.

So a lot of European invention, or a lot of stuff used in Europe, is flowing in; gunpowder, paper, printing press, stuff, is flowing into Europe. And so okay, so then what happens after about 1000 CE? Well, the argument is that the destruction of the kinship group opens the floodgates to people moving around. So a recent analysis that we've done is, after a bishop arrives at a 1.5 by 1.5 grid cell in Europe, people begin flowing in and out of that grid cell more. And what we do to calculate that is we have a big database of a few million famous people. And we have birth and death locations. So we find out that the Church arrives and suddenly people are free to move around.

So you have a flow of individuals around, and you have rising urbanization. So Europe passes China around 1200 in the percentage of the population that lives in cities. And cities are where a lot of the action is, cities and towns. And you have the diversification of occupations. So normally clans would specialize in different crafts, and you'd learn from

your clan brothers and clan fathers how to do the occupation. In Europe you get guilds, and you get masters and apprenticeships developing where strangers will become an apprentice to a master, learn from him, move somewhere else as a journeyman, learn from that master, and then eventually set up a separate shop. Lots of opportunities for a flow of ideas.

So it has to do with how the kinship system transformed the movement of people, the rising of urbanization, the nature of guilds, and then eventually you get universities and things like that. So it greatly intensifies the interconnectedness of the collective brain, and the amount of cognitive diversity.

Dwarkesh Patel

What do we know about India during this period? Because from what I've read, from a perspective of how much written history we have, it's kind of a black box. But we know that there was trade between India and other parts of the world, and we know it had a big population. Do we know why India before the Mughal period or before the British period wasn't... yeah. What was the effect of not having maybe Abrahamic gods or.. with the kind of other cultural practices India had?

Joseph Henrich

Yeah, definitely not an expert on this one, but some of David Reich's evidence suggests that the caste system is quite old. Because you can actually see it in the genetic system. And the caste system is not good for innovation, because if you happen to be good at another skill but your caste doesn't do that skill, you can't switch over. So it's gonna prevent the sort of available genetic diversity. Complex families, intensive kinship, there's reason to think that those things were all important. Yeah, so, patchwork of polities.

But there was lots of interesting ideas, actually, that are developed in India, and they move into Central Asia, eventually end up in the Islamic world, and then get into Europe. So for example, Arabic numbers are actually Indian numbers. Zero was probably developed... I mean, Indians were huge with numbers. It's kind of interesting. Perhaps related to the religion.

Dwarkesh Patel

Not that this would be a justification for the caste system, but is there any way in which the specialization it engendered would be good from the perspective of this collective brain perspective?

Joseph Henrich

So specialization is good. And so the interesting thing about most human societies is specialization automatically- or not automatically - it tends to evolve along some kind of kinship line. So in Oceania, there were different clans. In each clan, there'd be like a

canoe-building clan and a warrior clan. So that allows specialization, but it doesn't allow you to harness the genetic diversity, because it's not like the canoe-building clan had special canoe-building genes. It's just that you would pass down this cultural knowledge.

Now, a better system, but it seems hard to evolve, is one in which we all opt, select, into occupations in which we think we're good at. But for that world to exist, you need a world of voluntary associations with emphasis on the individual rather than on the group. So this is the world that evolves in Europe, once you demolish the intensive kinship units, because otherwise you're gonna get castes and clans and all these things we see elsewhere, where we see a division of labor, but it's transmitted through a kin network, the knowledge.

Dwarkesh Patel

And why wasn't there another sort of stultifying... because we began the conversation by talking about, there does seem to be this cycle where over time, because of cultural differences, because of kin, whatever else, over time groups will tend to diverge. Languages, culture, other things you mentioned, tend to diverge over time. Why didn't the same thing happen in Europe where, let's say, in the third century or fifth century, the Church starts doing this stuff, and then by a thousand years later, if you're part of this guild or whatever, now that's become like the new kin, and now there's actually less mobility again?

Joseph Henrich

Well, so there was a lingua franca, Latin, and so intellectuals would all write and communicate in Latin for a long time. So even though they were speaking different dialects of French and German and whatnot, they were able to communicate in Latin. And Christendom basically formed an overarching network that helped. And one of the key things that this world religion does, and other world religions do it too, is you have to marry other Christians, but it dissolves the tribal line.

So Europe has tons of tribes in the pre-Christian world, but because of how you have to marry other Christians, you had, you know, Celts marrying Franks. And in fact, the early arrival of Christianity into England is when a Frankish princess is marrying an Angle in Kent. And so they're marrying back and forth. And this is gonna dissolve the tribes because intermarriage, "what's the kid?", you know? So that's how you get rid of the tribes, but you need a world religion to do that.

Dwarkesh Patel

Right. And so it seems like there were two very important features that were relevant here. One, it seems like obviously the competition between different European groups which gave incentive for monasteries or universities or cities to attract the best people and make all these advancements. But secondly, the fact that they were descended from a common

empire, from the Roman Empire. Basically, in a world where the Roman Empire never existed, do you still have this collective brain in Europe emerge?

Joseph Henrich

So I think the Roman Empire plays a big role, because, for example, there were Roman roads in parts of Europe which allow people to flow. And you have communities which were part of Rome and relatively sophisticated. Now, they go into a bit of decline, but there's still the memory of the empire. So, you know, Charlemagne wants to be crowned emperor of the Holy Roman Empire in 800 even though there's not very much left of it.

But it was still an ideal, and that Carolingian Empire actually had real effects because they worked with the pope in order to enforce a lot of the marriage and family programs. And the Carolingians had their own agenda because they were trying to use these marriage and family practices to weaken some of the other aristocratic families. But they had the religious tools that they could put to work, and if you didn't have those religious beliefs, then you couldn't put them to work.

Dwarkesh Patel

Sometimes people defend ancient conquerors based on a similar idea of they spread knowledge around the world, and they set up these lines of communication. People say that about Alexander and then causing Hellenistic expansion and trade and so forth. They say that about Genghis Khan and the Silk Road. They say... I mean, obviously this led to the Black Plague, so... so it's tough where that nets out.

They say that about Napoleon and the Napoleonic Codes and so forth. Where do you basically come out on that story of: have the great conquerors been good for the collective brain or bad for the collective brain?

Joseph Henrich

Well, I've never actually focused on that. I mean, I guess my immediate reaction was there must be a better way to transmit the knowledge than the whole conquest.

Dwarkesh Patel

And then I guess there's also the open question of how the disruptions that are caused by them... How much did they set back the -

Joseph Henrich

And population decline, spreading disease and stuff, so certainly it could have been done better.

Dwarkesh Patel

Right. And going back to David Reich's work, if your theory implies that there should have been a decrease in genetic similarity in Europe as of, after the fifth century or something, as a result of the culture, the Church's practices, do we see that in the genetic record?

Joseph Henrich

Yeah. Yeah, so Europeans are quite well mixed compared to other populations. And so we were talking about India. You know, if you do a principal components analysis of this two-dimensional plot of the genetic similarity you can actually see the class, and people are pretty spread out. If you put the Europeans on the same plot, they're well mixed.

Dwarkesh Patel

Right. But do we see the period of greatest mixing starting in the fifth century?

Joseph Henrich

Yeah, good question. I don't know the answer to that question. So that would be... That's a nice piece of evidence, so... You know, there's a couple of groups working on medieval ancient DNA, so hopefully we'll have more answers on that question. I mean, there is enough now of pre-Roman burials, so Bronze Age type stuff, showing that early Europeans definitely had complex, intensive kin groups, patrilineal, patrilocal resonance kinds of stuff, polygyny.

Dwarkesh Patel

And then stepping back, I've read there's so many different theories of the Industrial Revolution and of modernity. And there's Robert Allen, the economic historian who thinks it's a result of higher wages because of the Black Death. There's Gregory Clark, who thinks it's because of this positive eugenics in England where the upper classes were having more babies. I mean, there's like 20, 30, probably hundreds of different theories of why it happened, where it happened, and when it happened. And so each one of these, when I read them, sounds plausible. I don't have a knockdown argument against any of them. But I'm not sure how to think about which one is correct, and yet, if we're stacking all of these up against each other... why you think this story is any more accurate than any other story that people tell? Is it overdetermined?

Joseph Henrich

Well, I mean, the first thing to think about is, those other authors - possibly Greg Clark is an exception, but they don't think about the psychological variation that exists. So there's good reason to think there's all these psychological differences, and you have to believe they don't cash out. And if you think they exist, then you have to explain them, and so you need a theory that explains them. So Bob Allen, he's a blank on the psychological variation. So let me give you some evidence that I think is pretty good evidence. So we have a database of

the diffusion of Roman bishoprics through Europe. And then what we do is we look at what happens when a bishopric arrives. And I mentioned before, you get a flow of people.

But another fact is, if you look at the production of famous people, these places where the bishopric has arrived start producing more creative individuals relative to non-creatives. So there's an uptick, and it keeps going up for centuries, so the relative increase, and so that suggests you're producing more authors and inventors and writers and whatnot. And then if you take each of those, and you correlate it with modern patents, places that spent more time under the church produced more patents between 1980 and 2014 based on European patent data. And this holds if you just compare regions within the same country. So you can see long-term effects of this, and you can see immediate effects in the historical record on the production of creatives.

Dwarkesh Patel

So what would you make of a theory that says, "Look, all of these theories are basically correct. All of these stories are basically correct." And it's them stacking up that leads to the Industrial Revolution rather than any one of them being the most important proximal cause. And maybe there's reasons, like, let's say there's 10 of these stories and you had to stack them all up and China had five of them, but they also had maybe independently, like three other ones, but they also had two stories which go against them or something. And it's like, no one of them is that proximately important, it's their combination, right? So, I guess your theory seems compatible with Robert Allen's that coal being cheap and wages being high was important.

Joseph Henrich

Well, I guess one of the things that I think is a mistake is to focus too narrowly on England, because England was benefiting from ideas that were flowing in from France. There was a lot of great science being done in France. And, I don't think Gregory Clark's right. I can explain almost everything he explains with cultural evolution, and he doesn't even really take that seriously.

Dwarkesh Patel

Oh, interesting.

Joseph Henrich

Yeah. So patience, one of the things he argues is patience. In WEIRD, I use the exact same data - I actually get the data from him - to show that you have this increase in patience. But we know that people can culturally learn patience, and this can all be culturally transmitted, and in this world, it leads to more success. So if you're the kind of person who doesn't waste a lot of his money and we begin to value thrift and stuff, which Protestantism does, then we should expect there to be an increase in fewer murders and lower interest rates.

Dwarkesh Patel

What's the reason to think that... I mean, his main explanation, I think is genetic, right? Is there some reason to think that that is less likely to be as important a factor as culture?

Joseph Henrich

Well, we know that populations - migrants - into the US and Europe shift their psychology over a few generations of being there, and we know there's been natural experiments done by economists like Chris Blattman where you actively try to teach people, train them essentially, to discount the future less. And that seems to be culturally transmittable. So this suggests that - I can't rule out that there's been any genetic evolution, but I can show that culture can operate on this quickly and powerfully.

Dwarkesh Patel

Right. I think one of his key pieces of evidence, I don't remember the exact numbers on this or even the particular detail, but it was something like if you look at the inheritance of wealth or titles or - I forget what the exact thing is - the correlation across generations points to the kind of pattern you would see with genetic inheritance rather than cultural spreading.

Joseph Henrich

Yeah. He doesn't actually fit any cultural evolutionary models, and if you include that people are learning from parents and learning from their social milieu, your parents determine where you are in the social milieu, so you're surrounded by people who are being more patient and behaving in certain economic ways, then that's gonna have a huge effect. I just told you about how if you grow up in Silicon Valley, you're gonna patent in computers. It's not because you have genes for computers.

Dwarkesh Patel

Yeah. Given the persistence of these cultural effects, how should that change how we think about whether it makes sense to have more immigration from societies that are already WEIRD or whether that matters or not?

Joseph Henrich

Right. So we have a paper under review right now in which we show that from the 1850 roughly to 1940, a big driver of US innovation both the quality and quantity of patents, is the cultural diversity of counties. And we actually use immigration as a kind of way of showing the causal effect of this. So what you want is a lot of cultural variation. Now, if you get people from societies that are more distant from whatever the current US culture is at the time, it's gonna take more time until they're able to fully integrate. So if they're coming from [a] very distrusting society, they're not gonna be able to latch into the collective brain immediately.

So you see this in around 1900. There's data from people, mostly coming from Southern Italy and coming from Germany and Britain, and the Southern Italians are coming from a society that has a high distrust of strangers. So their immediate effect on the patenting system is low. But the strength of these cultural traits seems to go down by an order of magnitude each generation. So the second generation, you can still see where they came from, but they're a lot more like the majority culture than their parents. And then it goes down another order of magnitude. So yeah, so you just have to do more work essentially to assimilate people, enculturate them. But the potential value of having diverse ways of thinking, different ideas, can be really valuable, I think.

Dwarkesh Patel

What do you make of, so Garrett Jones is an economist who has this, he calls this spaghetti theory of assimilation. I don't know if you've heard of this. The idea is basically, look, immigrants do assimilate, but they also assimilate us, and so whatever cultural practices they have will, in proportion to their size of the population, have an effect on wherever they migrate to.

And his example is when Italians came to America, spaghetti, which is traditionally an Italian dish, also became an American dish, right? So they assimilated American culture as well. And sub in traits like trust or whatever there. Basically, this sort of reciprocal assimilation has implications of whether we want immigration from non-WEIRD societies. What do you make of that idea?

Joseph Henrich

I think that the spaghetti example or the pizza - pizza or spaghetti, both good examples - is a great thing, right? Because American food is a fusion of cuisine from lots of societies, and that leads to quite good food. Same thing you can see [in] music. Things like jazz come, have African rhythms in them. And so rock and roll is along that lineage of -

Dwarkesh Patel

But we don't want, like, do we want the diversity in low trust and high trust?

Joseph Henrich

Well, the question is, do social interactional traits operate the same way as these things? And if you have ethnic enclaves, then you're gonna get low trust in those ethnic enclaves. You get things like the mafia, right?

So you don't want that. But if you had an immigration policy that distributed people, and in a high-trust society, you benefit by being higher trust because you can do things like collaborate and start companies and stuff, which you have to be high-trust to do that. Otherwise, you don't do it in a very effective way. So there is a pressure for low-trust people to become more high-trust. But if you're in mostly high-trust people, there's not an

incentive for you to move down. And social interactional traits are different than things like food types.

Dwarkesh Patel

In psychology, there's been this problem of the replication crisis where a lot of the main results are hard to replicate and it's not clear how much of this is real science. Have you looked into how many of the WEIRD results are based on, of the differences in psychology between different populations and so forth? How much of that actually replicates?

Joseph Henrich

Yeah, my sense is it replicates quite well. So we published our paper in 2010, and in, oh, late 20 odds, Armin Falk, who's an economist, and a bunch of others, Ahnke Becker, Ben Enke, published a paper where they measured economic preferences in 80,000 people around the world. And that just showed big variation in things like patience, various kinds of reciprocity, altruism, so the kinds of things we would expect. And then other large-scale projects have similarly shown lots of variation.

Dwarkesh Patel

The groups we have today, which are not WEIRD, when you study them, do you think that the fact that they have resisted modernity for so long suggests that they actually are weird in their own way? Which is to say that this is not representative of the way that Europeans might've been thinking in the second century; rather it's like the Hadza's particular weirdness leads them to be averse to modernity in a way that is unique?

Joseph Henrich

Well, that's always a concern, and it's especially a concern when you're studying hunter-gatherers because a lot of the hunter-gatherers that are left in the world today are [in] places where agriculturalists couldn't easily move to.

So that's something we're thinking about all the time. The ways around that are to go to places where agriculturalists didn't go or couldn't go. So we have a lot of good ethnographic history on people in Australia, and then we have the Arctic populations, which, you know, big sections of Paleolithic Europe were probably kinda like Northern Canada is today. So at least environmentally it's not crazy, because, you know, Ice Age Europe. And places like the Aleutian Islands, the West Coast of California, we have lots of ethnographic evidence, and that there was no agriculture there.

So just putting together all these different lines of evidence help us develop a picture. I wouldn't wanna bank everything on the Hadza. Of course, we can't do experiments with some of those groups. But we can see whether the Hadza look like these other hunter-gatherer groups.

Dwarkesh Patel

Oh, speaking of the Ice Age: do you have a take on why before the Ice Age agriculture didn't develop even though genetically there probably weren't that big a difference between, like, 20,000 years ago versus 10,000 years ago?

Joseph Henrich

Yeah, I don't have a clear picture of that. It is the case that the Holocene was a particularly long stretch, a particularly long interglacial. There were some long interglacials, but the soonest one before that was 120,000 years ago.

Other than that, they were getting broken up. I sometimes wonder if we may someday figure out that there was actually a little bit of agriculture. And it would've all been destroyed by the Ice Age, right? So it's not clear that there would be any heritage of it left. So we would have to find some remnants of some domesticated crops.

Dwarkesh Patel

Although I was asking David Reich about this, and I forget the reason he said, but he did say that if there were societies before the Ice Age, we would have evidence of them in the archeological record or their genetic record or something like that.

Joseph Henrich

Yeah, if they had gotten to any scale. But we know from modern societies, there are groups, for example, in the Amazon that have root-based agriculture that wouldn't leave any archeological record.

Dwarkesh Patel

This is a question I also asked to David Reich. There's, you know, with modern LMs and just generally with newer techniques for processing information and understanding evidence, there's a potential for answering questions that maybe we couldn't have done before, especially from maybe a cultural perspective where you can actually consider lots of different cultural artifacts at once in the context of you can run cultural simulations or something. Maybe those are more fanciful ideas, maybe there's more practical ideas. But if there's one question you have which it's sort of bottlenecked by having the right data or being able to process the data the right way and future LLMs or AIs could help us there, does something immediately come to mind?

Joseph Henrich

Well, this gives me a chance to tell you something we've been working on. So we were talking about this kinship hypothesis, the idea that kinship intensity affects psychology. And when I presented the ideas that are in *The Weirdest People in the World*, I get hard times sometimes from historians who will have some kind of very European-specific story

about why this happened that has to do with European royalty or coal or something like that.

And so my move is to not try to get into the weeds and start reading Latin texts, but to go test it somewhere else. So if it's true that kinship intensity should work like this, then we should be able to test it somewhere else. So we have a large corpus, two different corpus from China. And so we have late-imperial China, something called the Gazetteers, which were produced across the prefectures, and they had a stylized content. So this is the same genre, thousands of books, and then we have about 7,000 books going back 2,000 years in Chinese history. And the techniques that the AI is allowing us to do is to get measurements of psychology from the texts. So we take a questionnaire. This is a technique developed by my post-doc, Mohamed Attari. We take a psychological questionnaire that's been validated, it's in English, and we wanna get an equivalent in ancient Chinese.

So we run it through a semantic similarity comparison, and we look for quotes from the ancient Chinese corpora that match each sentence in the English corpora. And then we rebuild the questionnaire in ancient Chinese. So that's our psychological measure for something like individualism or collectivism or moral universalism. And then we take each book or each paragraph in each book, and we do a comparison, cosine similarity comparison, between the two sets of text there, and that allows us to stamp each paragraph with a measure of individualism for example. And then we do that for the entire corpora. And this allows us to track psychological change across space and time in China. And then we can correlate that with kinship intensity, and we get the same correlations that we do in Europe.

Dwarkesh Patel

Interesting. How worried are you about the fact that, if you think about modernity, was a result of finding this one cultural variant - at least according to your story - which then helps us develop the better technologies, all these new institutions and so forth. How worried are you about the fact that the modern world because of the spread of WEIRD, has just much less cultural variants and because of this monoculture, a potential variant which might be useful in the next transition just wouldn't emerge?

Joseph Henrich

Yeah, I am worried about that, because just the destruction of languages. So we're losing languages left and right. English has a particular form that you don't find in lots of languages, so that's just an example of the kind of cultural diversity we're losing. So that's definitely a worry. I do think that we're getting new variants. Japan adopts a lot of WEIRD institutions. But it's really creating a new third unique thing. It's got a bunch of Weird elements, but Japanese law, despite being the same as the US, operates very differently. So unlike Americans, Japanese don't tend to sue each other and they tend to use mediation and things like that, even though the superficial law is pretty similar. So I do think there is

creation of novelty which could be useful. But yeah, in general, I worry about the loss of novelty.

I also should say that I think that the sort of impersonal world of impersonal institutions in WEIRD psychology is quite fragile. For example, in the US in rural areas, you see moral universality declining since 2008. This is based on John Haidt's YourMorals.org data. And so there's an increasing difference in the morality of urban areas versus rural areas in the US.

Dwarkesh Patel

Hmm. I'm sure you get asked about this a lot, but fertility seems to be declining around the world, and there doesn't seem to be any existing cultural variance, other than maybe the Amish, who can resist it. Do you have takes from a cultural anthropologist perspective of what's happening here? And a follow-on question here is, should we really encourage these cultural enclaves like the Amish to the extent that this anti-fertility meme is so viral that they can't be part of the common culture and still preserve fertility, you really need this closed-off societies in order to preserve fertility. How seriously do you take that idea?

Joseph Henrich

Well, I definitely take declining fertility pretty seriously. And especially if you're a collective brain guy like me, just having fewer people is gonna be a big problem. And I think that there will be spread of ideologies or religions or something which are pronatalist, and those groups will have a big advantage in cultural evolution because a community that is pronatalist tends to produce more pronatalist babies.

Christianity spread using that. Mormonism spread in the 19th century using that trick. So I just feel like cultural evolution is gonna find the combination and there's gonna be some pronatalist groups spreading.

Dwarkesh Patel

There are a lot of different societies in the world today. Is there some explanation of why none of them have the existing variants necessary to keep fertility high?

Joseph Henrich

Well, from a cultural evolutionary perspective, this is relatively new, right? So the demographic transition is only really late 19th century. Lots of the world is just getting hit after 1970. And we also have things like rising female labor force participation which is gonna stifle it, rising female education. And so once that stuff maxes out, then you'll see variation among different groups in terms of the number of babies they produce, right?

And this thing unfolds in demographic time scales, so we're not gonna see it for a few generations, but there'll be some group somewhere that will be producing more babies than everybody else. And the reason why I think religion is the likely one is because people do

things because they think God wants to do it. And if people come to think that God wants them to have more babies because it's a way of worshiping him or getting to heaven or whatever their religious configuration is, then that'll be a group that produces more babies. I mean, Catholics were defying the demographic transition for a while. They just seem to have stopped.

Dwarkesh Patel

Right. How worried are you about the fact that... I mean, you discuss in WEIRD that throughout this period in European history, European states are at war most of the time. How worried are you about the fact that, because of a decline in war between great powers, that this build-up in cultural mutational load that you were talking about or maybe where things just get less efficient over time and there's no selective pressure to get rid of that inefficiency. How worried are you about that just making governments or nations less efficient over time because there's no outer loop loss function that says if you mess up enough your country might not exist, or your group might not exist? Which we were talking about the waves of Yamnaya or the Anatolian hunter-gatherers just conquering everything. If that doesn't happen, will we just see culture and nations and governments degrade over time?

Joseph Henrich

I think the answer to that is yes. The one way that countries or whatever the political institution is could address that would be doing this thing that I've curiously called "domesticating the competition". So sports teams constantly renew themselves by competing. Firms live and die and renew themselves over time. Like you said, companies will start off being super great and then they get too big and then they get kind of inefficient and then eventually they disappear. None of them last forever. And that seems to be true of political units. But in principle, you could have at least some renewal processes. So democracy potentially provides a renewal process, although there are things like the institutions that the government builds that are hard to renew. So one simple political idea is I think when you create a new department, it should have the same thing that cells have where at a certain time, they time out and you gotta make a new one.

And that's because just the way human bureaucracies, institutions work is they kind of corrode from the interior, from the inside, just the way cancer spreads in a cell. So you just gotta kill it and make a new one. So we could institute that. But I guess the idea hasn't quite caught on yet. I mean, there are bits and pieces of it around, so it's not like it's unused.

Dwarkesh Patel

Yeah, I guess maybe the thing that's less understood or is not appreciated is that the reason that over time in history institutions have improved is because of the selective process that at least at certain levels of selection no longer exists.

Joseph Henrich

Yeah. I mean, the Roman Empire didn't say, "You know, we gotta redo everything." "Why not adopt democracy and we could have a republic." Nobody does that. Things fall apart.

Dwarkesh Patel

The researcher Stuart Armstrong has this idea called Chesterton's meta-fence. And here's what it states: In our current system, democratic market economies with large governments, the common practice of taking down Chesterton's fences is a process which seems well established and has a decent track record and should not be unduly interfered with.

Joseph Henrich

Can you say any more about what the author has in mind? I would like an example or something.

Dwarkesh Patel

Yes. So I think this is a rebuttal against this common idea that we shouldn't be arbitrarily changing - like suppose a new technology comes about and we're worried about the risk it might pose to society. Suppose the young kids are doing something different culturally and we're worried about like what effect that might have on the culture and so forth.

He's basically saying, "Look, this has been happening for five centuries and this process by which new cultural variants enter the mix and so forth has worked really well for us, even if it's happening at a rapid clip and we shouldn't interfere with it."

Joseph Henrich

Well I don't think I have strong feelings on this. I'm always focused on trying to understand the process of cultural evolution, and it is true that people often resist cultural change that in retrospect we think is good. But of course when you begin to make cities, you lead to all kinds of epidemic diseases. So if you'd anticipated that, you might have worked on some of the public health procedures before you built the cities. So foresight can be good.

Dwarkesh Patel

Right. I guess the sort of bigger question here is, it makes sense in the kind of environment our ancestors faced why they'd have intuitions against progress, because if you already have technologies that are well fit to the environment, any change is likely to be deleterious. And whether we find ourselves in a world that's different enough where we can just, very intentionally disregard our worries about changes in culture or technology, or whether it's similar enough that we should actually... I mean, there's two ways you can interpret The Secret, right? One is, "Oh, look, this is why we should care more about culture" and so forth. Another is just, "Oh, wow. They're living in such a different world. I understand why my intuition against progress - where it comes from, and now I can totally disregard it."

Joseph Henrich

Right. So I would say that the lesson from Secret is not to disregard it, but just to be cautious because we could be dismantling things that are really important for the structure of society. And you shouldn't just dismiss valuable cultural practices as the relics of a medieval age, or the relics of a pre-enlightened age or something like that.

So ritual is a good example because rituals seem to have real psychological benefits in binding people in community and helping develop self-regulation. But it's easy to be an atheist like me and say, "Ah, rituals are stupid. We gotta stop doing them." Turns out they're doing a bunch of stuff and if you don't wanna lose that stuff, you gotta figure out another solution.

Dwarkesh Patel

A question that arises in my head is, look, we began this conversation talking about all these societies in the past, even when they figured out something successful, they did not themselves know why it was successful and so they just had to ascribe it to custom. They just say like, "Oh, this is the way we always made bows" or hunted or something. Why think that we have an answer for why the Industrial Revolution happened? Why think it's any different than the Inuit trying to explain why they make their bows a certain way?

Joseph Henrich

Oh, you mean, how or what we're up to is different?

Dwarkesh Patel

Yeah.

Joseph Henrich

Well, I mean, we're trying to apply science, which has been very successful in all these different areas. So, you know, evidence, and we all put out our arguments and we go through the process and some evidence is better than others and that's just our epistemology.

And I'm interested in the cultural evolution of epistemologies. So societies have varied over time in what counts as good evidence and what counts as a good argument. So one of the psychological changes that we see emerging in Europe compared to other places is how important is what the ancients say.

So in lots of societies, if someone says something and you can say Aristotle or Confucius didn't believe that, then it's like, "Oh gosh, I guess I'm sunk." Whereas at some point, Europeans decided, "Actually who cares what Aristotle thought. We know a lot more than he did." So this is a big epistemological change. And then the emphasis on empirical evidence

in science is not something you find in earlier traditions within Europe, and it's quite variable across different societies.

So you should think about the very standards by which we count a good argument and good evidence is itself culturally evolved.

Dwarkesh Patel

Yeah. And how much do you worry about the lack of cultural variation in science in particular, where we have like one big institution, the NIH, which funds most science. And there's similar processes of consensus and peer review and whatever, that educated whether you get a grant, whether work is accepted, whether it's considered worthy scholarship and so forth. Should we think that maybe we should have more variation in those methods because maybe the scientific method isn't complete, there's epistemic tools could be improved or it could be different and so forth?

Joseph Henrich

Yeah, absolutely. So polycentricity. There should be lots of difference, competition amongst these groups, no single funding sources... lots of different priorities. One thing I point out in this book I'm working on is that scientific papers tend to be more impactful when the authors are from more diverse societies.

But interestingly, people are biased to work with people from their own society. So what we actually do is different than what would maximize innovation.

Dwarkesh Patel

I'm sure you're gonna address this in the book, but I'm already curious now. It seems like the internet hasn't been as big a deal as somebody who's thinking from this zoomed out collective brain picture might have anticipated in the '90s. Maybe it's boosted the rate of innovation somewhat, although it's not clear just looking at growth rates or productivity growth rates or something that it has. Why didn't the internet cause the equivalent of another round of urbanization in our ability to do research or economic productivity or so forth?

Joseph Henrich

Yeah. And that's something I'm really interested in figuring out. And one thing that I'm still - I don't have a full answer to this question, but one thing that is clear is that there's something special about face-to-face interactions.

So something like whether even in the 21st century, whether two cities have direct long haul flights between them or direct flights between them increases the flow of ideas between those places. But we know these places are connected by the internet, whereas that effect doesn't seem as good. And part of this is that people have to build trust, probably, before we

start sharing ideas. And the more different someone is from us, the more you need that trust. So some of the research suggests that this effect is even bigger when places are more culturally different. And this is interesting, because they're probably more valuable to each other when they're more culturally different. But that's then the face time and being in the same place is even more valuable. So that's the kind of direction I'm going. And also, I still think that there should be exactly what you said, which is that the internet should have caused more innovation. I'm just not satisfied that we fully determined the best way to figure that out.

Dwarkesh Patel

You had a very interesting chapter in *Weird* where you talk about... a lot of innovation through history is more serendipitous than we imagine, and it's the result of the collective brain being big enough to discover these things. But if you look at the sort of track record in science and research, there do seem to be certain individuals who make independent discoveries across many different fields that are each quite important, your Newtons and Einsteins and John von Neumanns and so forth. And if it was just the result of the right person is in the right lab who sees the right observation at the right time, this repeated excellence by certain people seems less explainable. So I'm curious if the collective brains theory can explain what's going on there.

Joseph Henrich

Right. Sometimes I'm interpreted as saying that there are no genetic differences among individuals, [I] definitely think there are genetic differences among individuals that affect their likelihood. But I think when we take the individual, we often import into our thinking about them the person's life history. So for example Einstein, when he was a patent clerk, so he wasn't succeeding as an academic, he and his friends got together in something called the Olympia Academy, they called themselves, which was just a group of, like, five people, who would get together and they would read the interesting books at the time. And if you look at the books that they read, and historians have done a lot of work on this, all the major ideas that go into special relativity were read and processed by the Olympia Academy before they do it. So the idea that people think that time is relative; well, people were kinda talking about that, and they were talking about multiple dimensions. And like Henri Poincaré, at the same time, comes up with the same equation as Einstein, but he doesn't give it as radical an interpretation as Einstein does. He was thinking of the equations as kind of fudge factors, trying to make the math work. So there was an almost simultaneous invention of special relativity, and the ideas were all circulating. And Einstein happened to be in a place which allowed him to put all those things together.

As a patent clerk, he was actually processing devices to synchronize trains in different parts of Europe. And so he had to think about the amount of time a signal coming from different parts of the world. And there were a bunch of these. And we know the patents that went through, and we know that he had to look at these, there were only two guys. So he

happened to be in a particular place and time in terms of the ideas circulating and what he was doing on a day-to-day basis that really did give him an edge. Now, you could then say, "Well, what about general relativity?" Well, there were a couple other guys who were probably gonna get general relativity. And Einstein himself was worried that he was gonna get scooped, because once you get the one, it's just a matter of - I mean, it's not "just" a matter of figuring out, the math is really hard. But there were a number of other people who probably would've gotten the math.

Dwarkesh Patel

Yes. I guess then there's also still the question of why, in 1905, Einstein himself discovers not only special relativity, but Brownian motion and the two other things, right? But I guess you would just say it's the result of he had the right reading group?

Joseph Henrich

I mean, obviously he's a special individual. Although he did spend the whole second half of his career trying to show why quantum mechanics was wrong. So his Brownian motion paper is foundational in quantum mechanics. But then he decides God doesn't play dice with the universe, and he doesn't like the stochastic nature of quantum mechanics, which has more or less proved true, and it's part of our modern technology and stuff like that. And he spends the whole second half of his career fighting it. So that's a case where his intuitions didn't serve him well. And he turned out to be wrong for decades.

Dwarkesh Patel

And, sorry, I think that's also a case in which your point about having the right ideas available to you is important, because, obviously I don't know much about this, but from what I understand, the people who believe in the many worlds interpretation believe that Einstein was on the right track, and he just didn't have this idea of the ever-ending multiverse available to him, which would've explained his...

Joseph Henrich

That there's this branching thing, and just a matter of figuring out which branch you're on.

Dwarkesh Patel

Right. And so there's no probability.

Joseph Henrich

Yeah, yeah.

Dwarkesh Patel

Yeah. Okay, so we were just discussing, look, Einstein was reading the right things and making sure he had enough context to come up with these big discoveries. You're somebody who has connected ideas across many different fields. How would you describe

the input function for the way in which you come up with new ideas, and how much has it been informed by... I mean, you were like, you started off as an aerospace engineer, and you've done anthropology across so many different societies, on fieldwork and so forth. How do you basically think about the Joseph Henrich production function?

Joseph Henrich

Yeah, I mean I try to implement the ideas of the collective brain. So in my lab at Harvard, I have post-docs and graduate students with backgrounds in evolutionary biology, psychology, anthropology, economics. I mean, some of my favorite collaborators are economists. And we're just bringing ideas from very different places, but across the social sciences and even the biological sciences, we're often trying to explain the same kind of phenomena, economic decision-making, cooperation, things like ethnicity, why does it exist, stuff like that. So the way we silo science is a big problem, and especially in the social science, I think it's even a bigger problem.

So I've been a professor of anthropology, psychology, economics, and evolutionary biology, and just even the standards of evidence and what constitutes good research and how you tackle a problem really varies. So the academic disciplines are like different cultural worlds, different tribes, and just pulling the best from them has kind of been my approach.

Dwarkesh Patel

And among the more polymathic scholars, do you guys have, I don't know... do you and David and a couple of the other ones in this category, is there some shared group you guys have, or, is it...

Joseph Henrich

No, it's a series of different networks. So David Reich and I, for example, are always talking about how we wanna read culture from the genes. So if humans have had a long history of gene-culture co-evolution and we wanna understand what Paleolithic populations were doing, we might be able to see imprints of it in the genes.

So in, in my own work, for example, we've measured cousin marriage across different populations and shown it correlates with runs of homozygosity in the genes. Something like polygeny can be revealed by looking at the ratio, the variance in Y chromosomes to X chromosomes. Fire: we probably have some special genetic adaptations for dealing with the toxins in fire. So if you wanna know when humans got fire, and you see the gene that gives us immunity to toxins in fire, then we can infer that fire is older than that, right?

Dwarkesh Patel

Interesting. And, so obviously the input from different scientific fields in your work is obvious. But from a more philosophical perspective, people compare your work in the same tradition as Burke or Chesterton or something. Do you personally find that your philosophy

has been informed by reading them, or is it just independently converging on some of the same themes?

Joseph Henrich

Yeah, I mean, any convergence is completely independent, because I haven't really spent much time at all. I mean, I've gone back. After people said, "Your work is kinda like Hayek," I went back and read some Hayek. I did read *The Fatal Conceit* in graduate school, but aside from that, I didn't read very much. And then same thing with Adam Smith. I mean, I've tackled *The Wealth of Nations*, and I eventually read *The Theory of Moral Sentiments*. But it was pretty far into the process. I had picked up on themes they developed before I knew they had developed them.

Dwarkesh Patel

I want to suggest that maybe you should add a couple of AI people in your rotation.

Joseph Henrich

Okay.

Dwarkesh Patel

Just because I think this perspective is incredibly informative, what I think is maybe the most important question of our period, of what does this transition towards a society of AIs look like? And, sorry to bring it back to AI, but one other consideration here that your work has really informed me on, is: I was sort of maybe hyping up how big a deal I expect societies of AIs to be, but something your work informs is the idea of a single superintelligence is not the place in which to expect these big impacts of John von Neumann times 10.

But then again, there is a key advantage in the scope of social learning they can do as a society, but, like, the idea of a single superintelligence being super powerful is maybe less likely as a result of your work. And I, anyways, I don't know what you think about that interpretation, but...

Joseph Henrich

Yeah, I think that's right because the assumption, the sort of model that people seem to carry around in their heads is that humans have done all these things because of our individual brain power when really, it's been the power of cultural evolution and a network of minds gnawing away at problems over long periods of time and gradually accumulating not just the obvious tools, but also the cognitive tools for, for addressing these things.

Dwarkesh Patel

I buy the idea that individual IQ isn't the most relevant factor to understanding why discoveries are made. It's not about having the right genius or something. But what's the

reason for thinking that the average IQ of a society isn't super important in how much progress a society's gonna make, not just the population size?

Joseph Henrich

Right. So the first thing that we need to do though is to zoom back out and think about what we mean by IQ. And so Michael Muthu Krishnan and I have made the case that IQ is just a set of cognitive abilities that leads to success in 20th century contemporary institutions that have come to dominate the world. So it's a set, it's a culturally evolved system, and we talked before about the Flynn effect which illustrates that, and the fact that IQ is associated with all these positive outcomes now, but certainly wouldn't be in pastoralist societies.

So that would mean that if you raise the average IQ of your society, it might lead them to have more abstract thoughts and do better science. And so that's, that certainly fits. But the interesting thing for me is that the world of the future is gonna be quite different than the one now. So the set of cognitive abilities which is gonna be favored in the new AI world is not gonna be the same set that was favored in 1900 when they designed the IQ test. So for example, in the IQ test they ask you to remember digits backwards. I'm not sure how useful remembering lists of digits backwards [is]. It was in a previous world, where we had to write everything down and remember a lot of stuff. But in some sense, we're interfacing with our technology and we've got to figure out what are the set of cognitive abilities which is gonna make people best able to solve problems? And like we talked about, it's even the case that the most creative people aren't the highest IQ people.

I guess one of the things I'm trying to say is that the minds that might lead us into the new world might not be the ones that have the highest IQ because once you're sort of augmented with AI and all these kind of technological aids we have, the specialized thing that leads someone to do something creative - probably not gonna be the same abilities that did it in 1910.

Dwarkesh Patel

Yeah. I guess my real opinion is that, if in the world where that's true - and I think that's probably gonna be true - then it really doesn't matter at all because AIs will be doing everything. But in the world where, let's say AI plateaus or something, then I would expect roughly the same kinds of skills that have mattered for the last couple of centuries to keep mattering for a modern, technological society, which is analytical thinking and the ability to understand science and technology and so forth.

Joseph Henrich

But maybe the AI world you're imagining is different than the one I'm imagining, but I still think that people are gonna figure out what problems we need to solve, unless we're just gonna tell the AIs to figure out what the problems are and then solve them.

They might not be that good at that. I don't know. We'll see.

Dwarkesh Patel

You shared with me this draft of work about collective brains, where you show that ants have developed many of the technologies that humans have, like farming, and livestock, and division of labor and so forth. And so maybe there's some amount of blind selection, and it doesn't matter if it's natural selection, if it's cultural selection, it's the size of the group which can go through this learning process that matters, and how many people are available to experience the learnings or get the selection process acted upon them.

But I guess the big difference in where maybe individual IQ comes back into the picture here is, I don't expect there to be any amount of natural selection which will allow ants to land on the moon or make a computer chip or do, you know, make a nuclear fusion plant or something. And so is the kind of broad generalization we see with humans, and we might see to an even greater extent with AI, a product of you're really bottlenecked by the IQ of the individual? There's no amount of collective learning that can get you to the moon if you're an ant?

Joseph Henrich

Right. Well, one thing to keep in mind is that most human societies over most of human evolutionary history didn't get to the moon. So this is one particular group of humans. And one of the things we talked about earlier in this conversation was the cultural evolution of epistemology.

So it was the improvement in our what constitutes evidence, what constitutes a good argument that allows us to get to science and accumulate this kind of knowledge to do these kinds of things. So I see that as part of a continuous trajectory. But it's just that we have new cognitive tools.

Dwarkesh Patel

Right. I guess, but... so there's a really interesting point that even the epistemic tools which let us get to the moon are themselves a product of cultural evolution. But again, that seems bottlenecked by the fact that if you're just dealing with chimpanzees or something, there's no amount of cultural evolution that will result in the scientific method, that -

Joseph Henrich

Right. It needs some gene culture co-evolution.

Dwarkesh Patel

Right, right. So you mentioned in the Secret the tool use started something like two million years ago, and fire, we started domesticating fire closer to 800,000 to a million years ago.

Intuitively, it doesn't seem like tool use is that much simpler than fire, but is that a misunderstanding? Why was fire so much [more] recent?

Joseph Henrich

Well, so what we know from other species is that lots of animals use tools, and particularly chimpanzees use tools. So we can assume tools in the common ancestor. Now, what we see in the paleoanthropological record is the increasing use of stone tools.

And these are pretty simple stone tools. You can see a cutting edge there, but not very much fancier than that. And then fire is... a lot of animals are afraid of fire, and they have to run from wildfires and stuff like that. So whatever your story about humans is, you have to overcome the fear of the fire in order to tame it. Probably humans first found wild fire and somebody approached the fire instead of running away, which is the usual thing to do. And then got some of it and then put it to use, I guess. So I think it's the innate fear that animals have of fire, which is we don't hang around when things go off.

Dwarkesh Patel

Interesting. Okay, final question, what's the next thing you're working on?

Joseph Henrich

Well, the big thing is this book on collective brains, so I'm gradually working through that. One of the ideas that I really am excited about in this book is that we evolved to think in collectives. There's this assumption that psychologists have had to understand human decision-making and how our minds solve problems is that we should put people by themselves in experiments and see how they do. But real human societies, hunter-gatherers, they actually work in groups. And when we want to solve a problem, the first thing we want to do is check with our friends or ask other expert members of the community.

So it's the idea that we think collectively and solve problems collectively in a kind of naturally distributed brain. And Hugo Mercier and Dan Sperber, for example, have argued and shown with various lines of evidence that many of the sort of irrational biases we have, mitigate or disappear entirely when we solve problems as groups. So it's almost like we evolved to have that positive interaction and correct each other's errors.

Dwarkesh Patel

Right. That's quite interesting that you care more about the portfolio of intelligences than any one person being calibrated.

Joseph Henrich

Right.

Dwarkesh Patel

Excellent. This is super fun. Thanks so much for coming on the podcast.

Joseph Henrich

All right. Great to be with you.