

**SDS PODCAST**

**EPISODE 796:**

**EARTH'S COMING**

**POPULATION**

**COLLAPSE AND HOW**

**AI CAN HELP, WITH**

**SIMON**

**KUESTENMACHER**



- Jon: 00:03 This is episode number 796 with Simon Kuestenmacher, co-founder and director at The Demographics Group.
- 00:19 Welcome back to the Super Data Science podcast. Today we're lucky to have the renowned demographer, Simon Kuestenmacher as our guest on the show. Simon is co-founder and director of The Demographics Group, a firm that provides advice on demographic data to businesses and governments. He writes a regular column on demographics for The Australian, the country's most widely read newspaper, and he holds a master's in urban geography from the University of Melbourne.
- 00:44 Today's episode should be of great interest to anyone. In it, Simon details why demography is the closest thing we have to a crystal ball, why the world is at a greater risk of under population than overpopulation by humans this century. How in less than a decade, developed nations that depend on migrants to prevent their populations from declining will run out of immigrants, how AI and automation may solve both the coming low migration crisis and the later global under population crisis. He also talks about the implications of vastly life extending healthcare breakthroughs and what you can do in your career to prepare for the coming demographic and technological shifts. Wow. Ready? Let's jump right into our conversation.
- 01:25 Simon, welcome to the Super Data Science podcast. I'm delighted to have you here on the show today. Where are you calling in from?
- Simon: 01:32 I'm calling in from far North Queensland in Australia, Cairns. This is the sunshine that you probably can't see in an audio profile.
- Jon: 01:40 Yeah, yeah. Well, we have a small portion of our listeners taking the video version, so yeah, they will see some

brilliant backlight or side light behind you. It looks like you're in probably a pretty nice hotel room, gigantic-

- Simon: 01:56 I'm in a nice hotel. Big bed, big window.
- Jon: 02:00 Huge windows.
- Simon: 02:00 Great podcast. What more can you ask for?
- Jon: 02:03 Nice. Yeah. And great that you travel with such great recording equipment as well. Very nice mic and headset. Lovely.
- Simon: 02:10 That's it. I always have a microphone, have headphones with me. I don't take my big camera with me on the road, but the audio is much more important.
- Jon: 02:19 For sure, certainly for us. So Kirill Eremenko, who is the founder of the Super Data Science podcast and hosted it for its first four years, its first 400 plus episodes, Kirill recently met you at a conference in Australia, and only a couple times a year does Kirill come to me and say, "Jon, there's someone you've got to get them on the podcast. They're incredible." And Simon, you are one of those people. So you are a demographer. And so you can kind of explain this a bit better than I can, but it seems relatively straightforward that what that means is you study demographics. So at a broad level, how populations are structured and how that changes over time. I guess it's like a specialization of geography, is that right?
- Simon: 03:08 That's very much true, but my academic training is urban geography, so I always thought that I would start my career with some sort of town planning gig or something like this. And I did work as a stock standard data analyst of the beginning of my career, and then stumbled across by dumb luck across a thing called KPMG demographics, the demographics arm of KPMG in Australia. And it blew

my little head away that you were allowed to just do the fun stuff for a living. I didn't know that it was an option. And so I started my career in demographics that way.

- 03:47      And essentially, there are two different types of demographers. There are those demographers that actually create all those population forecasts that you are seeing floating around. And then there are what I would call the business demographers. These are people who take the work that the other demographers have done for them, and interpret them, and go to business. My company has a consulting arm and we very much then work with business to go, "Hey, this is the demographics. We are pretty sure that this is how things are going to play out, and this is what it means for whatever you do." We do the same with local governments.
- 04:25      So there's a lot of consulting work in order to essentially tell players in all walks of life how the world will change demographically speaking. And in a country like Australia, or the same is the case for Canada, the US, for New Zealand, these are essentially migration nations, nations that manage their migration inflow. And then it's very, very easy to forecast how many people will be in the country at what point in time. These are also all nations who run reasonably good censuses, whereas plenty of the European countries, for example, do not run a census anymore. And we have no idea how many people are in Germany at any given point in time. There's no way of knowing. We could be millions of people off, because this is open borders in Europe. How do you know whether somebody is in Romania or in Germany? You don't.
- 05:24      So when we say, "Germany, you got 82 million people or something like this," yeah, maybe. But in the US we'll be pretty close. We even have really good understandings of what is called illegal migration. So we have decent

estimates there. So we won't be off as much as a country like Germany would be off in their estimates.

- Jon: 05:44 That's interesting. I'd never thought of that. And so can Germany through a census process be able to go door to door basically and figure out how many people are there or it is just-
- Simon: 05:54 You could, you could. But a census is a massive show of trust towards your own government. If you are an illegal migrant, how would the government actually find you? So there's that, and then you need to have some sort of additional mechanism to account for illegal people. The Australian census for example, which is one of the best censuses in the world, the kind of length we go through in order to count the homeless population is ludicrous. So there is so much footwork on the ground to make sure that everyone is counted. And then of course, you trust that people answer a census correctly, which they do just magically speaking.
- 06:40 Then the more complex your census is, as anyone in the data world would know, the more you can deal with this. The American census, for example, is run every 10 years and asks I think 16 questions, whereas the Australian censuses run every five years and ask 65 questions. So the order of magnitude of cross tabulation that we can be doing with our censuses is insane.
- 07:05 We now ask for the first time about chronic health conditions. So we now have really detailed demographic data that we can link with health outcomes. And it's just marvelous from a research perspective, the things that we can do. We know that you get really depressed in old age if you live in a car dependent suburb, for example. How cool is that? That is something that we could have theorized before and that we say, "Oh yeah, I guess if you die," well not if you die. If your partner dies and you live

at this big house all by yourself, you get sad. That makes sense. And then of course, if you don't have access to friends and family, to a community nearby because you're stuck in this car and suburb, you stop driving, then you get even sadder.

07:51 That's a cool theory, but we can test it. Without running specific case studies, we can just plunk it into the Australian Bureau of Statistics data sets and we can check for it. And that's just very comfortable. So my job of interpreting publicly available data mostly and then make sense of them, that is a very easy task in Australia. It's much harder in Germany, a country that doesn't run a census, a country that is very suspicious to its data, without, privacy is the most important thing for people. So it's good stuff into the system and the output is good as well if we can do it this way.

Jon: 08:39 Very interesting. This is off on a little bit of a tangent, but I wonder if part of why Australia does such a great job with its census is because it is the law in Australia, correct me if I'm wrong, that you must vote.

Simon: 08:52 Yeah. So we have compulsory voting. Absolutely. You must vote. If you don't vote, you have to pay a fine. So Australians might have the whole attitude attached to them of being the Crocodile Dundee crazy rebels, but it's actually a very compliant society. Melbourne, where I live in Australia was for some stage during the pandemic, the most locked down city. And the compliance to those regulations, they couldn't possibly have been policed, and they were incredible. For better or worse. This is not a judgment on the right or wrong policies, but it's a very compliant culture here. Drinking is illegal in public spaces, in most public spaces, and it's forbidden on public transport. And people adhere to those rules. There's no way you could check this, but society is compliant. That's just a little cultural aside here.

- Jon: 09:57 Nice. Yeah. All right, so let's speak more broadly globally, or maybe particularly given the way our listenership skews a bit towards, you mentioned some of these countries already, US, Canada, UK, Germany. These are some of our largest listener bases, also Australia, New Zealand. So in countries like this, in developed countries, I guess largely in migration nations as you described earlier, how do you forecast that demographics will change over time? And critically, what is the impact for us as individuals?
- 10:44 So I guess there could potentially be insights that you have for people who are interested in data in particular, like data scientists and machine learning engineers. But maybe even more broadly just as people who maybe want to be making thoughtful investments or want to be making sure that they're getting ahead of demographic trends so that they're not left behind say in some kind of real estate scenarios or something like that. It'd be great to hear your insights.
- Simon: 11:12 So I would first and foremost argue that demographics are the closest thing to a crystal ball that we have access to. And the broader the geography we look at, the more correct we will be in our forecasts. Globally speaking, we can be pretty certain that we will see peak humanity by the 2080s or thereabouts. So that is a good fact to know. So we will not forever onwards grow. We'll probably peak just under 10 billion people or thereabouts. So we do not need to worry about the carrying capacity of the planet that people talk about. That is not a risk that I'm concerned of at all. I'm much more concerned about the exact opposite, about running out of people, so to speak.
- 12:00 And so when we say we peak, that's humans as a total. We will be running out of migration age people, 18 to 39 year olds. That is who makes up the vast, vast majority of migration. We will be running out of them in the 2030s,



mid 2030s. So that means that a migration nation like Australia will increasingly need to compete for migrants. Migrants will become a very, very desirable commodity. At the moment, we talk about, "Migrants, we need to block them. This is something that needs to be stopped." The opposite will be the case in the future, where you will very much try to welcome migrants to soften the very predictable aging of society.

12:46      And that's the big global demographic story is that we are getting too old, economically speaking, for the current model to continue to function. You can soften this blow by taking in young people. We don't create enough babies to eventually end up in the workforce. So the migration nations can just say, "Hey, no worries. We are cool, democratic, safe, secure societies. We are very livable. Do you want to come here, and we offer you jobs?" That's the sales catalog, so to speak, the advertisements that we have on offer. Whether the quality of life is then as good as we make it out to be for the people that come into the countries, that remains to be seen on a case by case basis.

13:34      So I'm quite worried about in the long term, can these countries operate on the same model? And then of course people go, "Well, isn't that some sort of Ponzi scheme to soften the aging of the population through migration, because aren't we getting older and aren't we running out of them eventually?" And that's true, but it really helps. And every now and then people point to Japan, a country that has been declining for 25 years now, and to say, this declining country still managed to grow its economy. How did they do it? But that's a very specialized case of a country, Japan, and their business model lends itself to still be operating with a declining population. They do nothing but high-tech manufacturing and insurance. That's how they make their money.



- 14:27      And you can just build the factory outside of the country, use foreign labor without importing the foreign labor, and then just reimport the profits. That is something that a country reliant on resources, agriculture, education, or tourism can't do. That perfectly describes the Australian economy. That perfectly describes Canada and New Zealand. And the US has a bit more to go for it, but it's a reasonably good description of the US as well. So global demographics shift.
- 15:02      And then if we zoom in closer, the picture and the forecasting power of demographics of course become a bit narrower. But usually on a national level, we know exactly how many people will die each year. We know how many babies are going to be made each year. And some countries can very deliberately manage their migration intake. So in Australia, we know the exact number of people that we let into the country year after year. The US has also a structured migration program.
- 15:34      You then have the added challenge of what's called illegal immigration. That is always made out in the political spectrum to be a problem. It is a problem, but not the same problem that its made out to be. You just get cheap workers into the country. The problem is that they suppress wages. The deal is you get super cheap labor in fast food, in construction, and you don't need to pay healthcare for them. And you pretend it's a problem. It's not. It's ludicrously cheap. The biggest employer of Walmart could not operate without illegal immigration. That's the kind of logic that we have in the US where you have an artificially cheap workforce in the country.
- 16:17      And if it works for them, it does. And then of course you have the paradoxical argument that the very tough border restrictions actually encourage people to migrate illegally. Because what happened, before the borders got tightened, you had this circular migration, the seasonal migration

with Mexico in particular where people went during harvest season. They went to the US, they got better wages, they collected, they saved up all the money, and they then went back to Mexico, invested into housing there, and just took their newfound wealth, which wasn't all that much on an American level, into Mexico. And then next year, the next lot came back. But if you make it harder to enter the country, you go, "Hey, that's stupid to try this every year. How about I just stay in the US?"

17:11 So the tough on migration narrative very much does the opposite, as the same as by the way, the war on drugs also does the exact same opposite. Because you professionalize drug trade. If you are essentially just a backyard meth dealer, life gets very hard for you because you're so easily caught out. And then it's only the really tough cartel dudes that can actually operate. And so you create more violence in the system, all the while you're doing absolutely nothing to tackle the demand. If you want to solve the drug crisis, you want to minimize demand for drugs, and we're not doing anything about this. Anyhow, that's another tangent.

Jon: 17:59 For sure. For sure. And that is a wild one to me all the time. It is insane to me that we try to have a war on drugs. Then people figure out how you can have these super powerful chemicals in very small doses like fentanyl that get brought across if you had... And they're super deadly. And you're supporting cartels all around the world. Yeah, we end up talking for a while, but it's crazy-

Simon: 18:27 The whole narrative when you say it's the war on drugs or the war on something that is not another country, to be honest, is quite telling. Because the only way to end the war is to either completely kill off the other country or for the other country to go, "Okay, we give up." And why would drugs or terror, so to speak, say, "Hey, we give up"? It makes no sense. You cannot beat it through war. You

need to stop the demand for it. On a drug level, it means the whole idea of liberalizing drugs from a public attitude, that probably didn't help, because there is no shame about drug use anymore. So we make it easier to step into the world of drugs. No moral judgments here whatsoever, but that makes it easier for drugs to be more omnipresent.

19:24      That's rough then. So you now deal with it. If you do this without legalizing drugs, you cannot manage it, you cannot tax it. So if you take the shame away of drugs, you should also legalize them. That's just my two cents, another tangent.

Jon:            19:41      For sure, for sure. But let's go back to something you said earlier in the conversation. You talked about how in the 2030s, migrant nations will start to run out of migrants. So people 19 to 39 years old who want to immigrate to, I guess typically a more developed country in order to, "seek a better life." The 2030s, to me, uneducated of course seems surprisingly early. Because to me, it seems like places like Africa, for example, are going to continue to have lots of young people for decades to come, are they not? In fact, that's where you talk about peak of around 10 billion people on the planet around 2080. That's going to be driven by a lot of young people particularly in Africa, isn't it?

Simon:            20:37      Very much so. Yep. So you have quite a few developed or soon to be developed countries emerging across the world. But as soon as you get richer, the birth rates drop rapidly. In Africa, birth rates have been dropping like crazy. They're still the highest in the world by a long shot, but they're falling. Birth rates are falling like they never have. So I think overall, the narrative there is exaggerated of Africa growing that rapidly. We'll see how this plays out.

- 21:18 This growth, of course, will have very, very predictable demographic and then geopolitical challenges. Because if you grow your young population without adding enough jobs, enough wealth, enough prospects in those countries, they will move. We know that they then migrate. That will lead to much more what we would call unmanaged population flows in Africa. That again would argue that the current flows from African migrants through the Mediterranean into Europe that we're seeing at the moment that are viewed as being very high, that this is the beginning rather than some sort of crazy spike, because why would you stop coming? If there is a more prosperous world, you have absolutely no hope at home, why wouldn't you move up? That's one story.
- 22:10 Then of course, if Africa on the other hand develops more rapidly economically speaking, we then know that birth rates drop. As soon as you urbanize, as soon as you get richer, birth rates drop. As soon as you educate women, birth rates drop. All of those things are actually in play at the moment. So there's an argument to say that, of course, Africa will become the biggest continent, blah, blah, blah, all that is correct, but that the order of magnitude is exaggerated. And we already on a global level ran out of, or we saw peak baby about five or six years ago. This year we should be seeing peak six-year olds. So meaning forever onwards in the future, you will not see as many six year olds as you are seeing now. Essentially, we are working our way as a system through those years. So every couple of years, we see another year that peaks. Yeah, so we're getting older.
- 23:06 The good news is we live longer. We live healthier lives. We reshift, we reschedule the economic system that like most of the listeners on this podcast, we operate in knowledge jobs that are very, very easy on the physical body of ours. So we can easily do our job well into the seventies, to be quite frank. So we can be economically

productive rather than in net economic drain on a system for longer. And in generational research, we call this the long life approach. So the argument there is, the longer you live, the more time you spend in each phase of the life cycle. So we are already seeing this in adolescence, for example. Adolescence now is probably a stage that starts when you're 13 and it ends in your mid-thirties.

24:01 It is a bit tongue in cheek here, but it refers to my favorite definition of adulthood. You become an adult when you take responsibilities for somebody other than yourself. And we are not fighting wars. Most of us are not part of the military, where you literally take responsibilities for the life of your fellow soldiers. And also, if we start families at all, we start families in our mid-thirties. So until then, yes, we are employed. Yes, we are physically fully developed adults. Yes, we live in coupled relationships. But ultimately, we can live in this carefree phase where we do not have ultimate responsibility for somebody's life other than our own.

24:45 So we can become a bit more loosey goosey. This is where the snowflake narrative about the millennial generation came from. Now that millennials are finally making babies, this narrative will completely melt away, so to speak. Because we as a generation become very boring, very predictable adults, and live through the other stages of the lifecycle as every other generation has before us.

Jon: 25:14 Fascinating. Speaking of extending lifespans, how much do you think about or read about potentially dramatically extending lifespans? So we already have over the past two centuries witnessed dramatic increases in life expectancy through better nutrition, better healthcare. And so in large part, I think, and you can correct me if I'm wrong. But my understanding is that in large part, due to dramatically reducing the number of infant deaths... So two centuries ago, about one in two children died before

the age of five. And now globally, not just in developed countries, it's something like 1% or fewer of children die before the age of five.

26:04 And so that means that even just using that number alone, it's unsurprising to hear that life expectancy as a mean has doubled over the last two centuries in developed countries from say 35 to 70 kind of thing. Do you think that things about our biology, like are telomeres getting too short, meaning that we're hitting a barrier through improved healthcare, improved nutrition, that we're not going to live on average much beyond 80, 90, 100, we kind of hit this wall? Or do you think it's conceivable that maybe we will find ways of lengthening telomeres without causing more cancer or something like that, that could allow us to maybe with regularity be living to 120, or 150, or who knows?

Simon: 27:05 Yeah. So in a sense, in the developed world, we already picked the low hanging fruits. If people die early on, that's the easiest way to fix. And we are doing that. And so in all of the countries where that is still the case, but we still see infant mortality, so to speak. That can be fixed rather quickly, and that will be fixed. And then there's a certain circularity in terms of what do you die of at each stage of the life cycle. And we are now all living very to advanced ages. That's when you die of cancers. That's why you think, "Everybody's dying of cancer. Cancer rates are up." It's like, no, we just live long enough to all die of cancers as well. So we want to be careful of what you're measuring there. So always look at age-related data in these measures. And yes, we're making advances in these fields as well. But this is really when we are moving inches rather than miles ahead in adding lifespans.

28:07 But yeah, we will live longer. We'll probably reach median ages of death in the nineties at some stage. I'm not sure that we can all live all that much longer. And just again,

on a personal level, I think that the ultimate obsession with just lengthening your lifespan, I'm not sure what for. Yes, definitely increase the quality of your life, of your health as much as you can. Do all those basic things that will ultimately prolong your life and lead to a higher quality in old age. But what for? What is eternal life good for? So there's a certain thing, just on a purely human level, it is important to make sure that this is our one trip around the sun and to make the most of it, rather than just pretending that the one inevitable event in life will not occur.

- Jon: 29:04 Yeah, yeah, yeah, that's true, or almost certainly true. And another kind of far out question that might be particularly of interest to our listeners, you talk about these issues like migration nations not having migrants that they can pull into and having to come up with schemes to attract them, as opposed to try to keep them out. Also, just in general, if we're going to have the maximum number of people on the planet around 2080, does that mean... So the implication there is we're going to have this labor shortage, that there's going to be too many old people, that we're not going to have enough young people to be supporting us, working people to support all these people that are living much longer than ever before, maybe forever.
- 29:54 And so is it possible, do you think that in the coming decades, we could reach a point with the kinds of AI systems that many of our listeners are developing? And maybe particularly if those are embodied AI systems, say in robotics, that the labor shortages could be made up there mean? So we do see that, for example, countries like Japan that you mentioned earlier, they have, I believe some of the highest rates of robot existence in factories of anywhere in the world. And places like China, which are also experiencing this kind of demographic issue where they're already past their peak population and Chinese



population starting to decline, they're not interested in becoming a migration nation it seems. And so they're also trying to catch up with lots of robotics.

30:47      So do you think that that kind of strategy could maybe continue to accelerate with the kinds of crazy AI innovations that we've seen in the last year or two, amazingly powerful LLMs? As those become embodied more and more, could that potentially resolve these migration or population issues?

Simon:      31:04      So in very broad terms, yes, I'm very, very optimistic about anything that's [inaudible 00:31:11] like AI, automation, robotics. These are essentially ways of making sure that one human who operates them, who manages them, becomes economically speaking more productive. That is what needs to be done. We have fewer people around to still do roughly the same amount of stuff. If we grow the population for the next 60 years or so, on a global level, somebody needs to do stuff. If this stuff can be done through machines, through technology, that is exactly what we need.

31:44      So I'm very much not afraid of high unemployment, of the world running out of stuff to do. I don't see that scenario play out at all. I'm a big friend of AI. I want to see all of this embodied. I would actually argue it comes just at the right time, because we do need workers. And if we can't get workers, we need to get this productivity from somewhere else, and this is technology. And we then of course need to find practical solutions.

32:14      So whenever I talk about AI and healthcare, for example, I'm not talking about robots flipping over old people. I'm talking about robots and AI making, for example, the compliance work, the paperwork elements of this care job, very, very efficient so that the individual care worker has much more time spent on patient care. That, for example,

simple tasks that mean just one item needs to be carried from one end of the building to the next, that these things could be done by robots rather than the human walking back and forth, for just essentially an in-house delivery task. We're seeing this in hospitals where those little server bots, you know those serving bots like in restaurants where they carry medical supplies from one end to the next? Back in the day, a human carried that. That's the kind of stuff that doesn't look that crazy.

33:12 But for example, in the care and healthcare jobs, there's a human element to care that is very important for better health outcomes. We want to retain that. But think about how you can dissect jobs and tasks, and do those jobs and those tasks that are not best done by a human to robots, rather than really thinking about how empathetic could a chatbot be. It's like, no, it's okay if a human does the psychological work. That's fine by me.

33:41 Of course, if it's a simple thing like a hotline with an airline where you complain about something, yeah, let the bots do that. That's fine. But be very careful about where the human element is at, because we will be a bit skeptical towards that and focus on the technical, not so personal stuff because the uptake will be really, really high there. You have no chance other than to take it on. A healthcare system is bound to fall apart in Australia. I know the same is the case in the US. So technology could be playing a very, very important role there.

Jon: 34:19 Nice. Great. Well keep on working listeners, on those AI systems. My last kind of technical question for you before I get into the final questions that I always have for all our guests, my last bespoke question for you here is for our listeners, we now have some great sense from you of how things are going to change over the coming decades. Very interesting. Do you have any practical advice, takeaway advice for our listeners in terms of maybe ways that they

should be skewing their career choices, their training, or ways that they should be skewing investments that they make in order to capitalize on the demographic shifts that are coming?

- Simon: 35:00 Yeah. Well, from a career perspective, I would argue that all of the cool tools that you're developing right now, they will take certain kinds of tasks away. They will speed up certain kind of tasks. But the tasks that will be taken up first, these will be technical in nature. It'll be ever faster to create a spreadsheet, a map, it'll be faster to program. All these things will speed up. You as worker bees in your organizations, you will not leave the office at 3:00 PM and clock off early. To misquote Jurassic Park, "Work finds a way to fill your day."
- 35:42 And your work, doesn't matter how technical the job is, will increasingly be filled with interpersonal tasks where you explain your job to other people, where you need to essentially argue with your coworkers around the minutia of a certain program. And that's the case for every job out there. So in a really weird, counterintuitive way, the tech heavy, AI heavy future of work will be more personal, more interpersonal in nature. So that then means that the make it or break it career skills that will ultimately decide your success are not your technical programming, your STEM skills so to speak. But they are your soft skills, your interpersonal skills, your EQ type skills. Again, very, very counterintuitive. But at least I'm deluded enough to actually believe it.
- Jon: 36:35 Nice. I love it. Well Simon, this has been fascinating. I'm sure a lot of our listeners have loved this episode. I've learned a ton from you and really enjoyed the conversation. It's great to have an expert like you come on and be able to speak so knowledgeably about demographics with us. Fascinating thing that impacts all of us and that I don't spend enough time thinking about

personally. Probably a lot of our listeners, you're probably one of the few people out there who is putting the right amount of time into it. Before I let you go, I always ask our guests for a book recommendation. I think you actually, I'm aware from before we started recording that you have a very interesting recommendation for us.

- Simon: 37:14 Well, I would argue Jonathan Haidt's *The Anxious Generation*, which essentially talks about the difficulties and challenges that come with growing up on mobile technology. So everyone who was in their formative years from 2010 onwards, formative years being roughly starting in your early teenage years. So all the folks that are entering the workforce right now, you grew up on mobile technology. The whole information that mankind ever created and the whole distractions that mankind ever created, readily available at the tips of your hand.
- 37:51 That changes you, and it takes away lots of freedoms that you had. You're more under control, under constant supervision. This is at the same time that we take youth out of the play-based childhood, where you roam free without parental supervision, and we put you into a universe where you're constantly tracked. You're not supervised online, but you're tracked. Your parents know where you are, but you are the first generation that is unleashed on a world of pornography, on a world of online gaming, on a world of only online communication.
- 38:36 And it changes us. It changes us in a fundamental way. And we are only right now seeing how and we are finding out ways how to do this. And it's a very crucial book to understand how this will play out, and we'll see that more and more of the tech folks that are working in the industry are very, very deliberate in what kind of technology and how much they expose their own kids to. So yeah, if you have a family in particular, make sure you

read this book, *The Anxious Generation* by Jonathan Haidt.

- Jon: 39:13 Very nice. Thank you, Simon. I think actually, I can't remember who it was, but I am pretty sure we actually had another guest recently just in the last couple of weeks who also had that recommendation. I wish I could remember who it was off the top of my head, but it seems like a very timely and interesting book indeed.
- Simon: 39:31 It also climbed to the top of the bestseller list, so it's very much out there. It's not a niche recommendation. I think on Audible, it's number one or two at the moment.
- Jon: 39:38 Nice. There you go. All right. And speaking of online platforms that are changing the way that we all are, especially younger people, how should the young people, the old people, people of all demographics, Simon, how should we follow you after this episode?
- Simon: 39:55 Well, if you're interested in my own research on demographics, I publish that on my LinkedIn. But I also run two platforms on Twitter, X now with just my name. We just share maps and data from around the world. This is just my humble attempt to add a bit of factual, lighthearted data science and geography to your feed. There's too much political division out there. I want to be the calm and collected voice. And there I'm doing the same on Facebook. The page there is called Simon Shows You Maps, and I'm doing just that. I'm showing you maps and I'm also disappointing a couple of the map enthusiasts by showing charts on this page as well.
- Jon: 40:47 Fantastic, Simon. Yeah, you do bring a lot of confidence and reassurance, the opposite of anxiety. I really enjoy being in your presence, albeit virtually. I'm feeling reassured about where society is going, and generally optimistic about my day. So thank you so much, Simon.



Hopefully everyone else enjoyed this conversation as much as I did, and maybe we can have you on again sometime in a couple of years to see how demographics are coming along.

- Simon: 41:19 I'd be delighted. We'll fact check my claim that the world will peak in the 2080s, in the 2080s. I'll see you then.
- Jon: 41:27 Fascinating episode with Simon Kuestenmacher. In it, Simon covered how demography is the closest thing we have to a crystal ball, especially with broader populations. By the 2030s, migration nations like the US, Canada, European countries, and Australia that depend on immigration to prevent low birth rate related population collapse, will run out of prospect of immigrants and begin competing for immigrants instead of trying to limit their arrival.
- 41:51 He also talked about how by 2080, the global population will peak at 10 billion people, potentially leading to a shortage of labor that's needed to support a much older population than Earth has ever had before. He also talked about how the AI boom is coming at just the right time, and so it may stave off a crisis for society that has too many old people and not enough people working to support them. And how interpersonal skills will be increasingly important, even in technical roles like data science and software development, as machines become increasingly capable and independent on technical tasks.
- 42:25 All right, that's it for today's episode. If you enjoyed it, consider supporting the show by sharing, by reviewing, or subscribing. But most importantly, just keep on listening. Until next time, keep on rocking it out there, and I'm looking forward to enjoying another round of the Super Data Science podcast with you very soon.