Actuaries Institute Podcast
Interview with Doctor Karl at the Actuaries Summit

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Speakers: Stephanie Quine, Dr. Karl Kruszelnicki
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Steph Quine:
Hello and welcome to you Actuaries Institute podcast, I'm Stephanie Quine, Digital Marketing Manager here and today we're bringing you a special interview with a much-loved Australian icon.

Dr Karl Kruszelnicki is a qualified scientist, doctor and engineer whose fun-loving personality led him to become a well-known author and science communicator.

GRAB from Actuaries Summit Live Q&A (42secs):

> **Dr Karl:** *"I remember reading in 1974 in the New Scientist how you guys had said that this greenhouse effect was probably real but dammit or not you were going to factor it into your insurance premiums. On the same grounds that you'd seen that if people smoked cigarette they would it reduce their lifespans. And you guys saw it before the medical doctors did. It took the scientists another 15 years or so…they needed a higher burden of proof... So you guys are very good at seeing stuff, thank you."* **[audience laughing]**
>
> **Andrew Rear (Munich Re):** "*That's why we're here.*"

Steph Quine:
That's Dr Karl presenting at our Actuaries Summit earlier this month where his fascinating keynote presentation that left an audience of around 500 actuaries in Sydney eager for more of his seemingly endless knowledge.

I was lucky enough to sit down with the Doctor to pick his brains and find out what he thinks of actuaries.

Listen in to find out…

INTERVIEW STARTS

Steph Quine: Hi everyone. We're here at the Actuaries Summit 2019, and we're so lucky to have Dr. Karl with us. How are you feeling about presenting to actuaries today?

Dr. Karl: I'm out of my range of knowledge because you guys know things that I don't know, but you guys have told us two very important things: one, that if you smoke cigarettes that it's bad for your health, and you die sooner and you guys discovered that before the doctors. And secondly, you've picked up climate change, by Munich Re in 1974, beginning to factor into their insurance premiums before the scientists had enough proof to show that it was real. Big up for you guys.

Steph Quine: Sure, great. So, Actuaries are long-term focused, you said you liked that. One thing you did mention in your presentation was China's 'Moon Shots' and you said, "they're going to be the greenest nation on Earth". What is the key takeaway for actuaries and professionals around this? Tell us more about China's 'Moon Shots'.

Dr. Karl: Well China has four moon shots and the thing I like about China and actuaries is that they both seem to have long term views. So if you look at the United States, every single president in the last 30 years has said, "We're going to go to the moon, we're going to go to Mars." And then proceeded not to give any money for it. So there's no long term view.

For better or for worse China learned a lot from Tiananmen Square. A colleague of mine told me this story that he was walking across the road in Shanghai, he was going against the red light, by the time he got to the other side of the street a message came up on his phone that he had already been fined.

So they did a combination of face recognition and then geo-locating via his phone and then sent him the fine.

Steph Quine: Sounds more like an episode of Black Mirror.

Dr. Karl: That's where China is heading and they're going for a long-term view with regard to social credit and keeping the citizens in line. But they're covering a whole lot of stuff but it's all long term and there are lessons to be got by looking at China. Whether you follow that or not is different from looking at what they're doing and then seeing what happens and then learning from their mistakes.

That I think is the advantage of looking at China to see what they do and why and is that a good pathway for us or not.

Steph Quine: Actuaries are experts at managing risks and looking at patterns in the data… and relating that to business outcomes. So, what benefits or value can they bring right now to these sorts of challenges?

Dr. Karl: The greatest advantage that actuaries have is access to lots of data from the past and the ability to analyse it in a way that's relevant for the society today. The short term, small goal is that they make money and they have a profit and they stay in business over the next few generations, but long term they're giving us a snapshot of our society day by day, month by month, year by year, decade by decade, going back over generations.

Dr. Karl: So they were the ones who said, "You smoke cigarettes, we're going to charge you more for a life insurance premium. Nothing personal, it's just business and they're the ones with regard to climate change, can see it appearing on their insurance premiums that they have to pay out. The situation we have with climate change is that it has been deliberately politicised by the big fossil fuel companies.

So in 1974-ish, Munich Re starting seeing it appearing in higher insurance premiums. The scientists had a higher burden of proof, took them until 1989. Not much happened between 1989 and 1991 except that secretly, behind the scenes the big fossil fuel companies were talking among themselves as to what to do. We have this from the emails from Exxon especially and the New York Times.

Go to the New York Times and look up Exxon emails and read it and weep. And so over a two-year period they said back and forth among themselves, "This global warming stuff, the greenhouse effect is real, what are we going to do about it?"

Option one: acknowledge that it's real, work towards mitigating it, being good corporate citizens and try at the same time to make a profit, which is hard if you're no longer have the same BAU or business as usual model because you're going into a different model.

Option two: keep business as usual and fund a massive disinformation campaign, which they did, beginning in 1991 and have kept on doing so, read about this in the book Merchants of Doubt by Naomi Oreskes and so you end up with various irrationalities around the world. So, in the United Kingdom the conservative party, because they want to conserve what is best about English society, they accept the science of climate change, but the non-conservative party denies it.

And in Australia, for different reasons, it's the other way around.

So the point is that regardless of whether you say that it's real or not, it is real and so the actuaries, the people who deal with the numbers and who see the costs, they are the people who are telling us that it's real. I have no idea why we do not follow their advice.

Maybe it's as irrational as saying that the Great Barrier Reef is in perfect condition, according to the statement by the Minister for the Environment recently.

Steph Quine: Speaking of the environment, have you been to the Australian Actuaries Climate Index microsite?

Dr. Karl: No I have not, assume I know nothing, tell me about it.

Steph Quine: It tracks the frequency and duration of different weather events so extreme temperatures (high and low seperately), heavy rainfall, drought, strong wind, and changes in sea level. it's a really useful tool that shows (via interactive graphs) how weather extremes are changing. We hope to translate it into financial risk in future updates to the Index. It's been getting some great media coverage lately. How do you see climate change affecting the economy?

Dr. Karl: Just this morning for example, there was a vast loss of income, due to the extreme weather even that just hit Sydney, we had three centimetres of snow in the Blue Mountains. So, the combination of the road being cut; now that loss to the economy is not factored into the price of making electricity and carbon generation and then the schools were shut, and so that also should be factored into the price of making electricity.

Steph Quine: Yeah, absolutely. When you start to pay attention to those costs, you realise how important it is.

Dr. Karl: I think the most important thing is if we have politicians who refuse to face the facts, then you guys should become politicians. I ran for politics myself in 2007.

Steph Quine: I didn't know that.

Dr. Karl: Well we couldn't afford it, because for a quarter of a million dollars, you don't get a lot. For $5,000 you get a thirty-second advertisement on T.V. at the unattractive time of 3:00 AM, on a Sunday morning after the ads for the abdominiser, the non-stick fry pan, and these amazing knives that stay sharp even if you cut a shoe with them. But before the born again, fundamentalist, gun-toting, redneck from Texas and Australia. So, not many people saw the ads. So, the thing I learned from that is the best thing that politicians have done, number one, is to put out a vibe that when you say to somebody, "I want to go and become a politician," they say, "Oh no, I wouldn't do that." They have succeeded. They have succeeded because you think that you won't do it, so they'll stay in their job and you won't boot them out.

If your automatic reflex is to say, "Oh no, I don't want to become a politician," you are passing up the opportunity to do good. You see, Chairman Mao said, "*Power grows out of the barrel of a gun.*" Which it does in some parts of the world, but in Australia, power grows out of politics. It grows out of the parliament. That's where to power is. I have no power, I tried to have power by running for parliament, didn't have any. I have influence, I don't have any power. So, run for politics, because that's where you can change the world and maybe have National Actuarial Day. Bring that in as an Act of Parliament.

Steph Quine: Sure. People might not know what it's about at first but absolutely, great idea. Okay so, let's move on. That was really interesting. You said, "we're living in the most peaceful time in human history."

Dr. Karl: Let's start on peaceful. So firstly, we are living in the most peaceful time ever in the history of the human race, and the books to read are: firstly 'Factfulness' by Hans Rosling, R-O-S-L-I-N-G, and two 'The Better Angels of our Nature' by Steven Pinker. They both look at the big scale wars and the small scale. It is good to have peace, I like peace, because you don't have wars. I've been in Afghanistan with the Australian Military. I don't like wars; good people die for no reason and so you think peace is good, and peace is good. Also read 'Capitalism in the 21st Century' by Thomas Piketty. In both of those books, Horseman by Schindler and Capitalism by Piketty, they say that the longer the period of peace, the more the inequality.

Dr. Karl: So, immediately after a war, after the society's been reset, everybody's just trying to survive. But the longer the period of peace, for whatever reason, some people will then move ahead, and they will adjust the rules of their country so they can get wealthier at other people's expense and so then you begin to have people living, earning income, not by working but by investments and then, they juggle the books to go even more that way and so if you go back to the Oxfam Report, about world inequality, in the year 2010, it took 343 billionaires to have the same combined wealth as the bottom three and a half [billion] poorest people on the planet, and by 2017 it had dropped to eight. All of them white, and all of them male.

Dr. Karl: Little diversion now, how come they're both cubes? 343 is seven cubed, and eight is 2 cubed.

Steph Quine: Ask the actuaries.

Dr. Karl: Ask the actuaries, they'd know. Actuaries, tell me why they're both cubed.

Dr. Karl: So, the Four Horseman that reset the clock on economic inequality are pestilence, plague, and war, and collapse of the state and revolution. Unfortunately, each of those involves lots of dead people. There has to be a fifth way that does not involve dead people.

Steph Quine: I hope so. That's okay, we've got a great reading list out of that answer if nothing else.

Dr. Karl: Okay, there will be an exam on that, uh we'll send around the multiple choice shortly.

Steph Quine: Might be even harder than the actuarial exams. I think that's almost all we had for you, except what advice do you have for actuaries and working professionals who want to embrace new technologies, and the opportunities they present, but perhaps they're constricted in their work or workplace environment?

Dr. Karl: Learn where you can. Your kids will teach you how to use Facebook or twooter, or Twitter, or whatever you call it.

Steph Quine: You're on Twitter, aren't you?

Dr. Karl: Yeah, I have a third of a million followers, aw shucks.

Steph Quine: Aw stop it!

Dr. Karl: Aw, shucks.

Embrace it, bearing in mind that it's not always the best. So, I had a bit of an amazing insight when I was working as a physicist at the steelworks, and I saw them make a railway wheel. Now a wheel for a railway carriage is a big thing, about sort of so big, and it's made of steel, and it's about this thick and this high, it can be even higher, and t,hey're good for over a million kilometers and there were making them by getting what they called a biscuit and a biscuit is a lump of steel and is red hot and you put it under a press, and the press goes: bang, bang, bang, and suddenly you got this railway wheel, and you just do a bit of machining and then you've got something that's good for a million or more kilometres.

Steph Quine: Amazing.

Dr. Karl: And I couldn't work out what was bothering me, it took me a few days to realise that the wheel is perfect for its application and so you don't make the wheel better by making it hexagonal or octagonal, constant

diameter round is the best and in the same way, some of the new technologies might not be better-

Steph Quine: If it's not broke don't fix it.

Dr. Karl: Yeah! It's good to know it, to see if it's better, and learn what you can from it, but don't necessarily think "oh my god, I've spent all this time, learning how to use Python, or Twitter, or Facebook, therefore I'll go and use it. It's hard, and you know about sunk cost, and opportunity cost, and all that sort of stuff; so just bite the bullet and say, "I reckon that it's no good, but I'll learn from using it."

Steph Quine: No, that's a good point.

Steph Quine: Dr. Karl, it was so amazing to talk to you, and thank you so much for presenting at the Actuaries Summit.

Dr. Karl: Thank you very much as well and big up to you guys for working it out about both climate change, and cigarette smoking, before the medicos and the climate scientists did. Big up to you guys, you rock.

Steph Quine: Yeah

Dr. Karl: The first day of every month, a pinch and a punch for the actuaries.

Steph Quine: I like it.

Dr. Karl: Yeah.

Steph Quine: And you can only say facts on that day, no lies.

Dr. Karl: You can tell only truth on that day.

Steph Quine: Thank you so much Dr. Karl, it's been fascinating.

Dr. Karl: Thank you for having me.

Steph Quine We hope you enjoyed this instalment of the Actuaries Podcast. Don't forget to check out our 50 other episodes, we reached that milestones this week. We've covered topics like career, mental health and insurance, big data, general insurance life insurance, underwriting you name it. Please send us your feedback, we love to hear from you, and listen out for new episodes on your Actuaries Podcast.
I'm Stephanie Quine, bye for now.