Robyn Williams: So here we have Tanya Ha, we have Tory Shepherd from Adelaide, and indeed Annabel Crabb is from Adelaide as well but spends most of her time in New South Wales.

....

Audience member: Yesterday we had a guy from...I think he's from Western Australia, but he is interested in getting a commercial windfarm going in Hepburn Springs in Victoria. And he is a businessman. Do you think there really is an opportunity for business to get behind these sorts of cooperative green-type energies?

Robyn Williams: You're talking about Simon Holmes à Court who of course...his family does come from Western Australia. The windfarm is in Victoria.

Tory Shepherd: Again you run into this trouble of people cherry picking stories and statistics and information and you have a big fear out there about wind turbines. And Professor Simon Chapman has looked at it and found that one of the things that best helps people overcome their fear of wind turbines is actually if they get paid to have one of their property. So business, absolutely has a role in that. But again, the way that lobby groups get together whenever there are proposed windfarms cropping up, particularly in some of the smaller towns, they have to overcome some fairly serious obstacles again of bad science.

Robyn Williams: What do you think of the National Health and Medical Research Council who reported...?

Tory Shepherd: Nothing to see here.

Robyn Williams: Yes, they said there seemed to be no problem, and in fact I think it was the 20th report of its kind to come out exonerating the windfarms.

Tory Shepherd: And yet our peak medical research council, they have to spend time and money again and again producing these reports that say the same thing; there is no evidence of any ill health effects from windfarms.

Tanya Ha: And so many other health issues that could do with research, including perhaps I might suggest the effects of the ash that is now falling on Morwell from the coal mine fires. Victorian bias here.

Annabel Crabb: But isn't this what we are talking about, right? People are people and they make up their minds based on all sorts of subjective data. And who's to look at somebody who lives next door to a windfarm and who actually does feel awful all the time and say to them, hey, hi, I am so-and-so and I'm from Adelaide and I'm here

to tell you it's all in your head. That person...actually you are in a Spockian way providing them with a written report as to why they don't feel dreadful. And that person's response is not ever, ever, ever going to be to say, **'Thanks for helping me out with that, I now realise what a total dick-brain I've been, thank you very much.'** That person will go on an online forum and say, 'I can't believe what just happened to me,' and find 50 other people who say, 'You are right and that person is a lunatic.' And that's effectively what we are talking about here.

Robyn Williams: Okay Mr Spock, how do you answer that one?

Tanya Ha: I'm actually talking to a lot of people who are in the wind industry, saying you've got to just show more compassion. I mean, you are so right. What we are referring to here potentially is an example of what is called the nocebo effect. So who's heard of the placebo effect? It's you expect to feel good, you do feel good. It turns out that if you expect to feel bad, if it has been spoken to you that, this happens and you get headaches...we are quite suggestible, we can actually feel very real debilitating symptoms of ill health from it being suggested to us because we expect it. Actually Jonica did a good story on that on *Catalyst*. But this could well be what's happening with wind turbine syndrome.

And this is why all the noise around it, why the inquiry after inquiry...it actually makes me angry because if I went up to a person who lived near a wind turbine and I punched them, I would rightly be charged with assault. But if you put information out there on the internet that encourages people's fears in a groundless way, fear is great when there is a reason to act on it, but when the fear is groundless, which may well be the case, I'm not an expert on wind turbines, so putting that disclaimer in there, but if people are creating these bad symptoms they get off scot-free. And that's one of the things that I think...I don't know what we do about it but there's got to be some ethics somewhere. These vested interests that are going out there, encouraging people to feel sicker than they might or to attribute...the other thing that concerns me is are there other underlying conditions that are causing the symptoms that aren't being treated because they are being told that it is because of something else. That's the other thing that concerns me too. But bottom line is we have to have compassion. These people are feeling sick.

Robyn Williams: Annabel, what would you say to that person?

Annabel Crabb: I would say I've cancelled my plans to buy the property next door. I don't know, I don't know what I would say to that person. I think this is a completely diabolical human natural problem that is exacerbated by the technological environment in which we now find ourselves. The natural tendency of people to get together...I mean, read *The Crucible*, it's the best possible demonstration of this. The capacity for people to get together in small groups and reinforce each other's rationality is an ancient, ancient pattern. It's only really gone viral since it was able to through the internet. So it's a diabolical problem, it really is. And I don't know what I would say to that person beyond, 'I'm really sorry to hear that you are feeling awful.' That would be the first thing that I would say because you have to remember is wherever you are dealing with anybody or millions of people at once, that each of those people...I mean, even the people that get routinely described as the deniers, they all feel like a group of people who are routinely talked down by scientists or whatever...

Robyn Williams: The elites.

Annabel Crabb: Yes, sure, okay. And every time a group of people is ritually referred to as 'the denialists', it broadens that gap, just as surely as referring to scientists as 'elites' does. It's reductionist and it probably makes a contribution to making people who are tending that way feel more firmly in that camp.

Audience member: Hi, my name is Annabelle and I'm a fan of Annabel's. I've also had about a 30-year's career in the biological sciences and I'm currently studying communications and PR at the University of South Australia, so I'm very interested in this whole thing, especially things like climate change and the immunisation stuff. So what seems to happen is that scientists, the people who deny, it's like if you can be a journalist or a doctor or a plumber, but if you are a scientist people have an opinion on your profession. So should there be a *Science Watch* like there is a *Media Watch* perhaps? So people can understand that science is important.

Robyn Williams: That's an interesting idea. Annabel?

Annabel Crabb: Frankly I would prefer *Plumber Watch*. God, *Everything Watch*would be useful, wouldn't it.

Robyn Williams: There's already one called *Checkout*. *Checkout* does that.

Annabel Crabb: Science is pretty watched I reckon. Science is a field where the commitment to peer review is unrivalled anywhere as far as I know, and that's a great

discipline. The commitment to peer review in journalism is less robust I think, it's fair to say.

Tory Shephard: People in general who deny climate change or whatever don't understand the process of science and whether more people need to understand...and it's not just science, it's any academic research, I guess peer reviews and things like that, as opposed to opinion.

Robyn Williams: May I answer that? I'll then toss it to Tanya. The big crit that comes from a denial side, if you like, is that there is a consensus in science. Some people look at peer review and the consensus as some kind of echo chamber or conspiracy of the elite. What you should think of instead, and I broadcast something to do with Paul Willis who is the director of the RiAus just here in Adelaide, and that is consilience.

So if you'd imagine that there is a murder and everyone thinks the butler did it and you go into the room and you look for 20 different sources of evidence, not one but all sorts of different ones; the splash of blood on the walls, the knife, the personality of the butler. Maybe there's some other weapon there somewhere. Maybe there's a history. And you put all these separate pieces of evidence together about the movement of animals, about the physics of the sky, about the history of CO_2, any number of things. And they all eventually, if the science is right, point in the same direction. So it is not a plebiscite where are all these scientists back each other up because they are good chaps together, but there is a test from across the board. Tanya, would you agree?

Tanya Ha: Yes. That was the shortest answer I've given I think. The other thing that I think...you're right, people don't understand the process of science and the language of science, and I think one thing that I found when I was working on *Catalyst*, I was so used to the uncertainty that everyone is comfortable with in science circles that I would say to my husband, 'I might make myself a cup of coffee,' when I was literally boiling the kettle and pouring it out. I would never say I will make...I might make...very comfortable with uncertainty. Some scientists are starting to use stronger language, but what I'm trying to do in some of my communication is separate the already-happened to the predicted, and remind people that the already-happened was once predicted as well.

Has anyone played that game called *Mastermind* where you have these little coloured pegs and it's covered and then you...? That is how I've described to my kids

what science is. This is how science works, is that that coloured row of pegs, you've got the solution at the end and it's covered and you don't know what it is, but you put your guess in there and you get feedback in the form of white and black pegs. And based on that feedback you come up with a new hypothesis and then you test it, you get more feedback. And the thing is, that first one was the most correct hypothesis at the time. The next one...that one isn't wrong or unhelpful, it led to the forming of the next hypothesis, and then as time goes by you get hypotheses that match reality better, and the ultimate test is that when you test them you get more of the pegs coming back as the feedback.

So basically we are pretty confident in science when it works. So our predictions for the kind of things we are seeing with climate change, the weather patterns, the extreme weather, are well within what was predicted. The hypotheses have worked. And that's an example that I've tried to show to people to show why we are not uncomfortable with something that was predicted in the past being wrong because that's how science works. We are constantly evolving, coming up with better understandings of what happens around us and we test it.

Robyn Williams: Yes, Mr Spock versus Captain Kirk. Final 30 seconds, all we have time for. Tory?

Tory Shepherd: Well, I'm going to walk out of here and try and be a bit more compassionate because I have a tendency to write a column and want to call people dick-brains, to be honest, and I'm going to try and be a little bit more understanding about the space that they are coming from in order to reach that gap that Annabel spoke about.

Robyn Williams: Annabel Crabb, 30 seconds:

Annabel Crabb: And I'm going to buy a property next to a wind farm, just to express the sincerity of my resolve.

Robyn Williams: Will you please thank Annabel Crabb, Tory Shepherd and Tanya Ha. Thank you.

[Applause]