**BI Connect 2021 - COVDI-19 Misinformation Transcript. Recorded 18th November 2021.**

- [Simon] Hi, everyone. Welcome to the second session of Beta's BI Connect 2021 virtual series. We're building on our first session which we had a couple of weeks ago, which focused on COVID-19 behaviours. And today we'll be focusing on COVID-19 misinformation, something we've all heard stacks about and are intrigued about. And we've probably also been exposed to it over the last couple of years. My name's Simon Gordon, I'm the Managing Director of Beta. And before we get cracking today, I'd like to start by acknowledging the traditional custodians of the lands here in Canberra, the Ngunnawal people on which we make today, pay my respects to their elders, past and present, but also to the traditional custodians, wherever you might be around Australia. I know there's people dialling in from right around the country, but also extend that respect to Aboriginal, and Torres Strait Islander people who might be listening in today, or down the track, and watching this on YouTube. Today we have two speakers presenting their latest research. Dr. Carissa Bonner from the University of Sydney, and Matthew Nurse from the Australian National University. Like we have had in previous sessions, if you've got any questions during the session, please use Sli.do and you can upload any questions. And we had some great questions last time around that put some of our speakers on the spot, and hopefully we'll get some today. So the event code is hashtag BI Connect 2021. And after each speaker, we're gonna have about five, maybe a little bit longer minutes to ask questions of that speaker, but we're gonna have a bit of time at the end to ask questions of the panel. So keep asking those questions throughout. And if you think there's something which both speakers could answer, we can get to it at the end. All right, without any further ado, I'd like to introduce our first speaker, Dr. Carissa Bonner, Carissa is a behavioural scientist and deputy director of the Sydney Health Literacy Lab at the University of Sydney. She leads the research translation strategy for COVID-19, which has produced 18 peer reviewed papers, seven published media articles, and over 2 million media impressions via TV and radio interviews on COVID-19. And obviously that's a great example of measurement and data as well. Cause there's some pretty impressive stat's there. Carissa has also provided advice to state and federal governments on COVID-19 communication issues. Today, she's speaking to us about her research, intimate information in Australia during the COVID-19 pandemic, particularly vaccination myths among younger adults, and as the parent of an 18 year old and a 16 year old, I reckon I've heard most of these, and it would have been good to have maybe had this presentation a few months ago when I had to confront some of it myself. The research is based on two national surveys that were undertaken in 2020 and 2021. So, please welcome Carissa. We're really looking forward to your presentation, and it's over to you.

- [Carissa] Thanks very much, I'll just share my screen. Okay. So thanks so much for the chance to speak today. So I have been involved in a whole series of surveys that we've been running since the pandemic began, and I'm just going to pull out the misinformation relevant findings today, but throughout I'll have references to the papers. If you do want to find out more about the individual studies. So before I start, I would like to acknowledge that the University of Sydney is on the traditional lands of the Gadigal peoples of the wider Eora nation. And I'm speaking today on the Cammeraygal land in the north of Sydney. So I pay my respects to elders of the past, our current elders, and those that are building for our future. I also need to acknowledge that this work is, has been a huge team effort by 17 members of the Sydney health literacy lab. So when we started this work, a lot our normal projects were stalled because we couldn't work in general practice during the outbreaks. So this was really a huge collaboration where we just had a lot of in kind support from many, many different people. We did get a little bit of funding from the Marie Bashir Institute and Sceptics Australia for specific studies, but overall, this has really been a huge team effort. So we've been looking at the issue of COVID misinformation from a health literacy lens. So health literacy can be defined as the skills that you need to access, understand, and also act on information about your health, but it can also be thought of in terms of the health literacy environment. So in Australia, the estimates for inadequate health literacy range from 36 to 59%, depending on how you measure it. And the health literacy environment is consistently not suitable for that population. So up to 95% of information is written at a level that is just too complex for the average person to understand. So when you have this combination of low health literacy skills, and a difficult health literacy environment, that's why we get these problems of misinformation and people not knowing what to believe, where to find information, or what they should actually be doing. And we'd never seen it so starkly demonstrated as we have during the pandemic. So we started off in 2020 doing a survey of COVID-19 knowledge, attitudes and behaviours. So the first one was in April 2020, where we had over 4,000 Australians through a mix of social media and recruitment through a panel company. Over May, June, July, we followed up just the social media sample to see if we could sort of track change over time. And then in November, we had an opportunity to recruit a new nationally representative sample of almost 3000 people. So we sort of have set this up as a longitudinal survey to track change over time, but the sample did differ at each of these time points to some extent. I also just want to acknowledge that this was set up with zero funding, and very quickly at the start of the pandemic. So there were definitely some limitations of this work in 2020, particularly under-representation of different cultural and linguistic groups. And we have tried to address that in the 2021 work. So in 2021, we sort of focused in more on specific groups that had higher communication needs, or that we had shown were more susceptible to misinformation in our 2020 work. So I'm not gonna go through all of these studies today. Oops, sorry, but I will pull out some findings that are relevant to misinformation from the first four of these. So just to remind you of the context at the start of the year, we had very low cases and also quite low vaccination rates. We had a really slow start to our vaccination roll out in Australia. So the first three studies were a GP survey content analysis of COVID information put out by government bodies, and a survey that we conducted in Western Sydney in 10 different languages, trying to get better understanding of those groups that we hadn't represented. Well in our earliest surveys. Then when we had our Delta outbreak starting in Sydney, we were lucky to get funding to run a vaccine myth surveys. So that was done over a really interesting period where we had increased in cases in Sydney, starting to get an outbreak in Melbourne, and the vaccination rates suddenly accelerated hugely in those areas. So I'll present some findings from those first four studies and we've just finished data collection for a few other ones that were focused on how you might maintain COVID testing, content analysis of social media use, particularly targeting young people, and looking at particular social media platforms, such as the Twitch gaming platform. So I won't talk about those first, those last three today, but happy to answer any questions. Okay, so going back to 2020, just to remind you of what was going on then. It's felt like a very long time since this first started. But our first survey in April was when we were under national restrictions still, but the cases were starting to come down. In May and June, things were looking pretty good, and the states were beginning to ease their restrictions until we got the second wave in Melbourne. So our July survey was sort of at the peak of that wave, but most states were feeling relatively normal at that time. So back in April, we were just really interested to look at how people with lower health literacy were coping with the barrage of information about COVID at that time. And it was very new to everybody. You could make an argument that everybody had low health literacy about COVID then, and we were all adjusting to this new way of living social distancing, using masks, that sort of thing. But what we found was that people who objectively had lower health literacy, or who spoke a language other than English at home, were less likely to understand which COVID-19 symptoms needed testing. They were less able to identify how they could actually take action to prevent infection, even simple things like washing hands, or keeping 1.5 metres from other people. And they also reported experiencing difficulty finding information about COVID-19. So those two groups were also more, less likely to raise social distancing as important, and they were more likely to endorse specific misinformation beliefs about both COVID-19 and hypothetical vaccination. So at that time we didn't know if we would have a vaccine, but it was already emerging as our likely way out. So in our April to June surveys, so that was April, May and June. We really focused in on misinformation, using items adapted from a validated vaccine conspiracy beliefs scale. So we had to adapt the wording to make sense in the COVID context, but we didn't actually have a vaccine yet. And we also took very specific myths that were reported on the Australian government website. So they had a myth-busting web page, that at the time there was about 10 different myths that were circulating around the internet. And so one of the challenges of studying this information over time is that it changes so quickly. So the context changes, but also the misinformation changes. So something that was evidence-based at one point, a few months later could become misinformation. So some of these items that we reported as misinformation back in April last year, maybe now you could argue that they're either not misinformation, or the opposite that new things have come into play. So it is quite challenging to look at this over time. I just wanted to point that out as we go through. So our main finding is that from these three initial surveys were that younger age, being male, having low education, and speaking a language other than English were associated with stronger agreement with both conspiracy beliefs and very specific myths around COVID and vaccination. Once you control for these more demographic variables, lower digital health literacy, lower institutional trust, and lower perceived threat of COVID-19 were all associated with greater agreement with those misbeliefs, and also greater rejection of official government accounts. So it's kind of a mix of just genuine lack of information or lack of understanding, and this time. Just a quick summary of these findings. You can see this article online. Simplified, so it really picked up on this idea that young men were more likely to believe COVID-19 is... So we didn't choose this title. It was sort of designed to be catchy and it did get a lot of attention. But when you actually looking at our paper, which has been published, it was actually quite a lot more complicated than that. So there were three types of myths that sort of clustered in our data. So prevention myths were more likely to be endorsed by men and younger people. So that was things like the flu shot provides immunity to COVID-19. Causation myths, such as 5G networks were spreading the virus. Were more likely to be endorsed by people with lower education, and more social disadvantage. So more demographic factors that you might typically consider. And cure myths such as vitamin C being an effective treatment, which had been around at that time. Were more likely to be endorsed by younger people. So it was a bit more nuanced than just a thing about young men. I also just wanted to highlight that it's not always the really obvious conspiracy beliefs that are an issue with misinformation. So a sort of stream of our research has focused on COVID-19 testing behaviour, because this is really new to us. So there was literally no research showing what drives this sort of behaviour until this pandemic began. So we started off with a very short list of possible barriers to testing that were of interest to New South Wales Health back in June last year. And we were surprised to find that the biggest barrier at that time was actually the belief that testing is painful. So 11% of people were not getting tested because of that. And it could have reflected their own experience, but at that time, a lot of people haven't had a test yet. So there was also a sort of fear underlying people's avoidance of the test. In terms of information, there was just really simple issues. So not knowing how, when and where to get tested, but also being worried that you might get infected at the testing clinic. So that has not occurred in Australia, but that was a fairly strong belief in this sample. But what we noticed in this data was that a lot of people had different reasons for why they wouldn't get tested. So we had 136 responses that didn't fit into these categories, and we wanted to understand those more. So to do that we used a behavioural science framework called the Behaviour Change Wheel, which is based around three major drivers of behaviour. So capability is things like having the skills to understand and act on information, Opportunity is more practical issues like access, and motivation is more around the misinformation and beliefs. So we use this as a behavioural diagnosis tool to help identify where we might focus interventions to improve COVID testing. So from that work, we identified about 40 different barriers to testing, and we wanted to find out which ones were the most important and the most prevalent. So when we had the opportunity to do a nationally representative sample in November, we presented the list of barriers that we could potentially modify with a communication intervention. So we didn't include the logistical or access barriers in this. And we were more focused on the capability barriers, and the motivation barriers. So in terms of capability, there was a lot of very specific misinformation about when you should actually get tested and why. So people would say things like, well, I'm only gonna get tested if I have cold symptoms for three days, or I'm just gonna self isolate for three days when actually it should be 10 days, or they might say, you only need to get tested if you have three different symptoms. So it was kind of subtle, but very specific in a way that would delay testing. And at this time in November where we had very low cases, that was a real problem because it meant that there were delays to how quickly we could get on top of little outbreaks that was springing up in different parts of the country. There were also motivation issues that are kind of complicated in terms of whether they're misinformation or not. So people were saying that they didn't think the symptoms would be COVID because there were very few local cases, or they thought it was a cold or hay fever. And that's actually very logical. So at that time we had very low cases. It's true that it's very unlikely your COVID test would be positive. So the messaging at the time, wasn't quite getting the right message across that actually even just a single case in a city was so important for us keeping on top of the virus. So I'm gonna move on now to what you probably heard the most about, which is vaccination. And we did start looking at this very early in the pandemic before we even had a vaccine available. So overall our findings from 2020, were that willingness to vaccinate, hypothetically, was associated with health literacy, education, and age. So people with lower health literacy, lower education and younger age were less willing to get vaccinated at that time. And that is what we would kind of expect from the broader literature. After those demographics were accounted for confidence in government and trust in institutions was a really key issue, and also perceptions of COVID being an exaggerated threat. So because we had such good control for most of 2020 with the exception of Melbourne, people sort of felt like, well, COVID hasn't actually been that big a deal in Australia. So why should I take this risky new vaccine? And again, you could argue that that's quite logical, but as we've seen this year with the Delta outbreaks, it's too short-sided. And I think that was an issue with our communication last year, was that it was always inevitable that it was gonna get out of control here at some point once we opened up, but people were just sort of thinking about their immediate experience. So the open responses in these surveys in June, July and November consistently reflected safety concerns. So people didn't understand how a vaccine could be developed so quickly. They didn't understand that the process had been expedited, but hadn't actually skipped steps. And it was lots of concerns about safety. And this was even before AstraZeneca was found to have a small risk of serious, but rare, clotting side effects. So just to show you how the vaccination intentions sort of evolved over the year, I've just got a reminder of what was going on in Australia with the graph on the right. And it was pretty consistent. So we were in April, June and July, around 5% of people were disagreeing with the question, if a COVID-19 vaccine becomes available, I will get it. So that's actually quite consistent with what has played out. So it looks like we're heading towards 95% vaccination in New South Wales, at least. And 5% kind of matches up with our data from that time, even when it was hypothetical. So we had a few consistent associations that were, again, coming up in all our analyses. So perceived public health threat being lower was associated with lower intentions, having lower health literacy, lower education and younger age, but the age was a little bit complicated. So, the group that was actually the most hesitant was people in their forties to early fifties. And that was the group that had, sort of conflicting decisions around the thresholds to when they could access different vaccines. So, we think that was, sort of, part of what was going on with that group. Between April and November, we were also able to look at what predicted change over time in terms of intentions. So in November, the hypothetical vaccine became real. So people actually were now contemplating a real vaccine that was approved in Australia, was already being used overseas, but wasn't available, yet, to most people. And the disagreement rate jumped up quite a bit. So it sort of doubled, and that's because people are now contemplating this actual vaccine that did have a rare but serious side effect. And the intentions were consistently associated with perceived public health threat. So in November, our graph was right down the bottom. There was very few cases in Australia, everything was very under control. So it kind of makes sense that at that time, people were a bit apprehensive about this vaccination when there was no immediate threat. Just looking at the reasons why people would be vaccinated back in 2020. So the biggest motivations were protecting yourself but also other people, believing in vaccines and trusting science, and the perception that is how we were going to get out of the pandemic. So those things have been quite consistent this year as we have actually rolled out the vaccine, but they weren't always reflected in the messaging. In terms of concerns, as I've mentioned safety was always the big issue, and also just needing more information. So a lot of people were just very unsure about what this vaccine was gonna be like, which made sense, cause this was in June and July before we actually knew what we were going to get in Australia. So that's what was going on in 2020. And I'm going to now move on to our studies from 2021, which were a bit more targeted towards specific groups. So just to show you the context again, we had very good control of COVID for the first half of the year. So we did have a little outbreak in December last year in the Northern beaches of Sydney, but it was under control within about a month. And since then, there wasn't any major issues until the Delta outbreak, which started in June. So obviously since then everything changed a lot, but I just, because these studies were done over this period, I just want you to keep in mind what was going on at that time. So earlier in the year, we were asked to write another conversation article about what we might do from a behavioural science point of view to make it easier for Australians to get the vaccine. So the real thing we wanted to emphasise in this was that it's not all about misinformation and hesitancy. Actually, our biggest issue was around access and logistics, but also just basic information provision. So if you wanted to get the vaccine early in this year and you didn't speak English, you couldn't actually even access a form to book in for a vaccination in your preferred language. So there were lots of very practical issues going on in the first half of the year. Despite that, there were still issues around information. So in March to April, we did an audit of government information around specific COVID behaviours, including vaccination. So in Australia, we looked at the federal government and the three biggest states. So New South Wales, Victoria, and Queensland health departments. And we found that vaccination information consistently performed poorly on the readability metrics we were comparing to. So for a general population, it's recommended to write health information at a grade eight reading level. And when we looked at the vaccination information in Australia, it was written at a grade 13 level. So what that means is that you need more than a high school level of education to understand the information, and even information that was flagged as easy read was still at a grade 10 level. So for people with English as a second language, or low health literacy for other reasons, it's just very difficult to understand that type of information. And it's still a problem today. So as a result, GPS were starting to find their practice was being overwhelmed with all of these myths and misinformation around COVID vaccines. So when we surveyed about 300 GPs in March, they perceived their main role to be education, and correcting misunderstandings, as well as actually physically providing the vaccine. So GPs were spending a lot of time dealing with all the misinformation and misunderstandings that were resulting from issues with how people get their information, but also the fact that the government information was too hard for most people to understand. So to just delve into, a little bit more into why information sources is really important, I've just put out this finding from our survey in Western Sydney with 10 different language groups. So you would hope that people would be getting their information from reliable sources like health professionals or government websites, but that's often not the case. Not everybody listened to the 11:00 AM press conferences every day. And instead they were getting their information from social media, particularly Facebook, friends and family living in Australia, their local communities, and even from overseas, which can be difficult because our situation was very different from other countries, in that we had quite good control, and we were really reliant on things like testing to keep that control. Whereas other countries that had huge outbreaks, testing actually wasn't as useful there because there were just too many cases to keep a track of. So what we've found with this survey is that unsurprisingly younger people were more likely to get their COVID information from social media. And older people were using a mix of these three things. So it was really word of mouth. So they were relying on their friends or family in Australia or overseas. And they were looking to their local communities and local languages to actually get their information. And that was an area that was addressed really poorly at various stages of the pandemic. So there were lots of reports of information being translated in a way that didn't even make sense, or was even contradictory to what the actual policy was. So there was similar patterns to people with low health literacy. So if you had lower health literacy, you were more likely to rely on your family and friends and close community to get your information rather than going to government websites. And 55% of these people said that most of the information they could find was in English. So that again, reinforces why people were relying on their communities to get the information, if they didn't feel they could understand the information in English. So finally, a study in July and August is the most recent one we did looking specifically at vaccine myths. So this was targeting what we defined as younger people, but it was just under 50. So at the time we started the survey, there was a cutoff at 50 for how you could access the vaccines. So that's why we defined it in that way. And this was a nationally representative sample of over 2000 people. So what we found was that lower vaccine intentions were again, associated with lower education, lower perceived threat, or lower concern about COVID, lower trust in institutions and confidence in government, and the open responses consistently reflected the safety concerns. And this played out as a really strong bias towards Pfizer over AstraZeneca, but not just about side effects. So there was this sort of halo effect where people assumed Pfizer was better at everything, which was not always the case. And again, access barriers came out as a really strong issue, even in the middle of the Delta outbreak. We also have just done some preliminary analysis. So caveat that we're still finalising this one, but we wanted to look specifically at COVID 19 vaccine, what we called misbeliefs, and they shared associations with lower knowledge about COVID, generally, lower health literacy. And again, male gender came up. There was also some complicated associations with age where it was sort of the opposite to what we found earlier. So earlier we found younger people, or younger age was associated with more hesitancy. And in this one we found older age, but that's because we've got a different sample. So the older age in this sample is people in their forties. So it seemed to be consistently that middle age group that's having the most concerns about vaccination. So when I talk about vaccine myths or misbeliefs, these are the sort of items we included. So I'll just show you the top three. So around 20% of people, even in August this year were thinking that COVID-19 vaccines can cause immune damage. People who have had a good vaccine shed the virus to others, and that COVID vaccines have been linked to infertility. So this is pretty high proportions of people, particularly considering we've managed to get to very high vaccination rates. So I guess when they're in areas where there've been big outbreaks of Delta, that seems to trump these concerns, but in regional Australia or states that are still sort of pursuing a zero COVID policy, it's really hard to get around these to get the vaccination rates up high before you get an outbreak. So I'm just gonna finish up with the last five minutes talking about what we can do about some of these misinformation issues. So going back to our model of skills and environment, there's a lot of things we could still do on the environment side, today, to improve how we've been going with communication. So the first thing we can do is to simplify written texts to a grade eight reading level. This is actually really easy to do. It's not easy to do, but it's easy to find tools that would tell you what the grade reading level is. So they're freely available online. If you just would have readability calculator, and this is one that we've developed that's a bit more detailed. So what you can see here is some texts from the New South Wales health government website about COVID-19 testing. So this is from their frequently asked questions section it's clearly targeted at consumers, not health professionals. And you can see that almost all the text is coloured. So the colours mean that there is something complex about the way it's written, that could be addressed to reduce the grade reading level down. So on the right you can see under readability, the grade reading level is 14. That means you need two years of education beyond high school to understand this text. And it's really simple things that you can do. So if you have a look at this red box on the left, it's just highlighted this word reside. A lot of people don't automatically know what that means, particularly if they have English as a second language. So they've said people who reside in areas for increased testing and surveillance, there are lots of much simpler ways you could write that, and a tool like this will show you, give you alternatives. So instead of reside, you can just say live, and you will see this consistently in any government text, almost every second word could be simplified. The second thing we can do is address this issue of language and different cultural groups. So we need to use consistent translations. So, as I mentioned, there's been many reports of very bad translations that maybe even made things worse in some cases. So I was involved in an initiative led by Holly Seal at UNSW. And she worked with the multicultural health communication service in New South Wales to develop a glossary of terms. So we ran the English version of this glossary through the editing tool that I just showed you to make sure that the grade reading level was eight or lower. And to make sure that any unnecessarily complicated words could be replaced with a simpler word. So we can't always do that with medical terms, but there's a lot of cases that you can simplify things. So we helped with the English version, and then that's now been translated into 29 different languages to hopefully make sure that those resources are also using consistent terms when we talk about COVID vaccination. In terms of co-designing messages, we also know that the generic media campaigns that have mostly worked for Australia do not work for every community. So we've, our team has been working with the agency for clinical innovation to look at how we can support COVID vaccination communication in Aboriginal communities, particularly in regional New South Wales. So this was led by David Fallen to ACI, and they did a really strong consultation process with communities to understand what their concerns were. And they've come up with this shared decision making model that's very specific to Aboriginal people in those regions. And they now have resources around this in general practices, in Aboriginal medical services, and in communities to try to encourage people to actually share their concerns with a reliable person. So a health professional, and really encouraging them to talk to someone who can give them reliable information, rather than just relying on word of mouth. The third thing we can do is to communicate risks more clearly. And so the issue with the AstraZeneca side effects was that it was often talked about in isolation, but if you compare the side effect risk, with the risk of getting COVID, it starts to look very different. So this risk of side effects is the tiny little black dot on the right. So one in a thousand, it's actually a lot less than that for the clotting condition, compared to all these different things that could happen to you if you get COVID. So we need to put communication of risk into context. And finally we need to understand and use social media to target groups more effectively. So Western Sydney Health has done a really good job of targeting their messages on social media to young people, just through simple things like using emoji's and humour to try and get this quite boring and repetitive message across to different groups. And we can also work with social media influencers. So this is a pharmacist that we worked with to develop a video around COVID testing. He has a huge following, and he makes really funny short Tik ToK videos that are really informative, but he does it in a way that engages more than a boring written government text. So in conclusion, we've shown that health literacy needs are not being met in COVID-19 communication. And this remains an issue today. And misinformation is going to be a problem for the rest of the pandemic, but also for all other health issues. And it's particularly bad when reliable information doesn't meet the needs of all community groups, because then they're forced to go to these less reliable sources. So we need to learn from and address communication issues to prepare for what happens next in the COVID pandemic, but also for future public health emergencies. So thank you very much for your time, and happy to answer any questions.

- [Simon] Thanks, Carissa. That was really super fascinating. And a sign of a good presentation, all the questions I wrote down, you answered as you went through stuff, but we do have a few and we've got about five minutes. I might just start off talking a little bit more about the culturally and linguistically diverse community. And I've got a couple of questions there. The first is, I think something that's been quite apparent recently is that online survey panels aren't representative of that group. And certainly there's not large numbers in some of the panels, sub groups, of different languages or cultures. And that seems a real weakness in a way, you know, trying to understand what's happening in those communities. So a comment on that. Second is you, one point you mentioned the importance of community leaders, particularly for older people. And I noticed that was separated out from religious leaders, just to comment on who we would be talking about when we say community leader. So in future, who should government go to in particular that could be influential?

- [Carissa] Sure. So for the first question, yeah, that was a major weakness of our research done in 2020. We only had 6% of people reporting a language other than English. And we know the real rate is way, way higher than that. And that was also a really blunt way to look at culture and language as well. But I guess what we were able to show this year is that if you use different methods, and you work closely with communities, we were able to get a sample of over 700 people on no budget. We had zero funding for that study. By working really closely with the Western Sydney Local Health District. So we worked with them and their various teams who do outreach with different cultural groups to identify which 10 groups we should target. And it wasn't necessarily what you would expect either. It wasn't just looking at the 10 most prevalent groups. They wanted to sort of get more of a range of groups that were more likely to have English proficiency versus less likely, and also different immigration patterns. So the sort of take home from that was that actually the 10 groups were really, really diverse. And we can, often sort of use that cowed acronym that lumps all these different cultures and languages together. And what that, so they really showed is that, that it doesn't, it's not meaningful at all. Each of those groups was very different in terms of their concerns, in terms of their intentions and uptake around vaccination. So we ended up actually reporting those results back to Western Sydney, LHD separately. So even though the groups ended up being fairly small amount of a hundred or a bit less than a hundred, it was much more useful to them to get a sort of summary of each culture group rather than lumping it all together. So it's not easy, but if you sort of make it, if you prioritise that as an issue in your research, it can be done and it can be done on no budget if you do it in consultation with communities.

- [Simon] Yeah, awesome. One of the questions we got on Sli.do, such challenging issue to try to address in this context, how much do you think, or say in the data, peer influence or social norms coming into play with the cohorts affected by misinformation? I think you had some results there talking about that, but maybe if you could go a little deeper on that.

- [Carissa] Yeah. Actually we didn't measure social norms, specifically, in our surveys. So that's actually a really good question that we probably can't answer from our data. We are delving into that more with our next studies where we're really focusing in on young people, and how they use social media. So we've got a really clever PhD student who's just started with us, her name's Melody Taba. And so she's starting off with analysing the way that health social media accounts have tried to target young people. And then we'll be taking those examples to a group of young people to get their feedback on what worked and what didn't. So our aim with that is we want to actually understand better how young people were engaging with this information online versus what they were getting from their friends or family, and try to come up with some guidance for future pandemics on how do you actually communicate with young people in a way that will engage with them. That doesn't exactly answer the question, but I'm hoping through that work, we will get more information about that peer influence and social norms.

- [Simon] And your link to social media being really powerful there obviously can accelerate the spread of some of that stuff as well. I'm gonna ask one more question for you now, I'm gonna give you a prelude to two that we'll come back to at the end. So I'll give you a little bit of time to think about it, which Matthew won't have the benefit of, there's just a comment here just generally about, there was, the grade eight reading level, which you've got a large group of allies on the line, listening here. Like that is something which what you'll do is kind of our bread and butter work, you're trying to simplify language and get it down to that. I was wondering, and you don't have to go into exact details here, but one of the challenges for us, and probably for you, is then working with the technical people who wrote that and trying to convince them that it's fine to lower that level because they've often written it in good faith. Just wondering if you've got any tips for how we can start to have that conversation within government and elsewhere.

- [Carissa] Yeah well, we're actually working with some local health districts to integrate the tool that I showed you into the processes that people who are writing information about health have to engage with. So I think the first thing is to just kind of normalise that this is part of the process, that you when you write your information and then you actually consider the readability level, and it's also fine to acknowledge that it's not always possible to get it down to a grade eight level. So we've sort of integrated, through feedback from people who actually work in government doing this sort of work. We have sort of extra add-ons to our tool where you can sort of say, look, we can't change these five key words that are quite complicated, but we're gonna explain what they mean. And then we can remove those from the readability score so that you're assessing lesser than medical jargon, and more of the other sentences around that. So it's, I think one way is to just get people used to using these tools, and you have to kind of work with more the management level to make it an expected part of how you work, but you can also reassure the writers that it's okay if you can't get it down to this perfect level, it's not a magic threshold, but it's just something that can, they can consider to try to simplify specific words around the ones that are essential.

- [Simon] Yeah, that was a, I loved your example there you could see some of the words which you'd call out and, you know, it's very hard to refute, simplifying some of those. So really great example, okay. The preludes for what I'll come back to later, one of them will be, you know, this isn't over yet, we've got 2022 coming up. What can we learn here for the COVID booster program, vaccine booster program, which will face it's own challenges. And also for trying to maintain protective health behaviours, in again a very different context over the next sort of 12 months and beyond? So that's one question to ponder. The other question is looking at the source of misinformation. I think there's a sense that it's always kind of some malicious source, you know, I've heard of, you know, sort of cult religious groups or right-wing fanatics, you know, you get these kind of people called out. I'd be interested to know whether you've got any analysis, which looks at the source of these messages, and ones which get traction versus ones which just sort of have, kind of just creep into popular culture through potentially uncertainty or poorly written government materials, for instance. So almost legitimate misinformation in a way. So if you can have a bit of a think about that, that'd be really great, but that's all we've got time for for the moment. And we're going to hopefully get Matthew up on screen, in a tick and we'll come back to you. Awesome. Here he is.

- Hello, just getting my presentation going. So, yeah. [Simon] I'll just do an intro for you Matt, and you can sort that out. So, like to introduce our next speaker, Matthew Nurse, Matt's currently a PhD researcher at the Australian National University Centre for Public Understanding of Science. Sounds like a cool place to work. He has more than 20 years experience as a government communicator. Most recently as communications director for Victoria's Department of Jobs. He's currently researching misinformation during the COVID-19 pandemic, focusing on misinformation sharing behaviour, which we've just touched on a little bit there. Following on from Carissa's presentation on the different types of misinformation, and who believes them, Matt we'll talk about his research into willingness to share this information. I think you're gonna talk about some recently published research, which is really great. Exploring how a person's preference for analytic thinking predicts their willingness to believe and share misinformation. And what comms strategies can be used to combat that. So there'll be a little bit of overlap probably with some of the content we just covered, but it sounds like it's a bit of a twist in that as well. I don't know if you know, if you heard Matt, the two questions we'll come back to later on, so

- [Matthew] I sure did.

- [Simon] Cool. Great. So welcome. Look forward to your presentation and it's over to you.

- [Matthew] Thank you very much for that Simon. I'm just going to now share my screen. So you should see that now, okay. So thank you very much for coming to the presentation today. My name is Matt Nurse, I'm a PhD researcher at the Australian National Centre for the Public Awareness of Science. And yes, it is a very cool place to work. It's also a very challenging place to work because people, of course, don't automatically accept scientific findings and then change their behaviour in accordance. I'd also like to pay my respects to the traditional owners of the land I'm on today, which is the, the Ngunnawal people here in Canberra. Firstly, just a little bit about who I am. So I've worked as a communication practitioner for 20 years, including working as a communications director for a federal government agency, and two government departments down in Victoria. I'm also a trained emergency communication officer. So I've been deployed to help manage several biosecurity threats, such as anthrax and Varroa mite, and also worked on several statewide declared emergencies. So for example, here's a picture of me in a Victorian state emergency control centre during the 2019 bushfires helping to manage that emergency. But for better or worse, I walked away from a perfectly serviceable public service career to investigate misinformation. And I'm focusing primarily on the sharing of COVID-19 misinformation. And I'm telling you this only because it gives you an insight into my perspective on the problem of misinformation. My research is quite pragmatic in nature, and in particular, I hope to provide the sort of insights I would have liked to have got as a communication practitioner who would like to reduce misinformation sharing behaviour, probably in this moment, you can see on the screen right there. So my presentation today will be in a couple of parts. First, I'm gonna talk in a bit of detail about some empirical research that investigates one particular variable that seems to predict at least some of the misinformation about COVID-19 that we're all seeing at the moment. And then secondly, I'll talk about some exploratory research hasn't been published yet, but puts those findings in a bit of context and mirrors a bit of the findings from Dr. Bonner, which is just good to see. First, I just want to talk a little bit about what is misinformation, because this can actually be a little bit confusing. Misinformation is generally accepted to be information that is false. And so that raises a few obvious questions. Like how do we even know what is true? Let alone what is false? And I'm not a philosopher. So I don't hope to answer a centuries old questions like that today. But in practice, what misinformation researchers tend to do is follow the advice of Gordon Pennycook who suggests that we should be using claims that have already been debunked by professional fact checkers. And specifically those who are signatories of the points international fact-checking network, because as Dr. Bonner said, things can change our understanding of how the, of the facts can change. So we need to make sure that they've been debunked, and we measure that at the time it's been debunked. The second generally accepted criteria is that misinformation is not shared with the intention of causing harm. And that is that the message sender does not know that the message is false, and is not transmitting the message with malicious intentions. So messages like that are common, but there's now agreement in the literature that this is called disinformation not misinformation. So there's a distinction there. In practice, it's challenging to determine what a message sender's intentions really are. So generally we assume that things are misinformation and less than malicious intention can be established. So that touches on a point that I think you've raised before, Simon. It's also worth noting that misinformation is the message itself. Even though some scholars, practitioners and others use the term to mean other things such as beliefs, or misperceptions, and that's particularly common in the medical literature. Finally, we should be clear that it does not need to be shared online. Misinformation can be shared by all forms of communications, such as in-person conversations. And I bet that be some people listening to this today, who've already Googled articles about how to deal with discussions about COVID-19 over Christmas lunch. And you're anticipating what I'm talking about here. Misinformation in itself is not a problem. Yes, it can be annoying. It can be very annoying, but it isn't inherently a problem in itself. It becomes a problem, of course, when it influences behaviour, therefore misinformation in an emergency context is a potential problem in four important ways. First they can downplay the true risks of an emergency. So you've probably seen people falsely claiming that COVID-19 is just like the flu. This kind of misinformation may lead people to take no action for a genuine threat. Secondly, it can promote mitigations that are not effective to the threat. So for example, you've probably seen people falsely claiming that citrus fruit or hydroxychloroquine can prevent or treat COVID-19. In this case, people who follow this advice waste time and money on ineffective behaviour. And this can include things like scams, but from an emergency management perspective, people who fall for this misinformation are probably less likely to follow the official advice, and are therefore more at risk of contracting and spreading COVID-19. Thirdly, misinformation can flow thick and fast during an emergency. It happens during all emergencies, and for this reason it can crowd out official advice. So people may be aware that early last year, the world health organisation declared that we're not only facing an epidemic we're also facing an infodemic. And what that means is a situation where people find it very hard to locate useful advice because of the overwhelming amount of misinformation out there. Finally, if we take a higher level, more sort of systems thinking approach to this, misinformation can be a problem because it undermines the credibility and legitimacy of those institutions charged with measuring and responding to risks such as emergencies. So we're seeing that a lot at the moment were scientists, medical doctors and governments are being attacked is potentially makes it much harder for these organisations to manage the next emergency, or the next stage of an emergency. This is because an important part of managing any emergency is being able to influence behaviour. And being able to influence behaviour is what keeps emergency communicators awake at night. So, just gonna touch on what we can do about it. There are four broad categories of things that we could do to mitigate these harms. Firstly, you could find ways to protect people from believing misinformation that they're already exposed to. So there's a thing called inoculation theory, which is where you forewarn people that misinformation is coming, like a specific type of misinformation. And you tell them a bit about the motivations of people who are trying to trick them. So that's been found to be quite effective. You can correct people's misperceptions after they form beliefs in line with misinformation. This is a bit of an interesting one, because there was a bit of a theory that there was a thing called the backfire effect, where it was thought that if you challenge people's beliefs, that would force them to dig in. And therefore they would believe those beliefs even more strongly than before. However, the thinking has changed on that. And now we believe much more, that if done well, corrections can be quite useful. You could limit the likelihood of people who believe misinformation from acting upon it. And that's very difficult. Once people believe something, and they haven't been corrected, how do you stop them from acting on it? Very difficult. Or you could find ways of preventing people from being exposed to the misinformation in the first place. And this is a bit where I'm interested. That is you can discourage people from sharing it. And if we think about the diffusion of information like this in somewhat epidemiological terms, this is a bit analogous to wearing a mask to prevent exposure. And there's been quite a bit of work done on the technological side of this, such as restricting social media accounts that have spread misinformation, but there's been less research done on the social science side. And this is really important because misinformation isn't just shared on social media. So understanding the human factors behind misinformation sharing of behaviours could lead us to new ways of tackling the problem. The single most frequent bit of advice I hear from people about communication is know your audience. I just want to spend a little bit of time on this because this goes to the motivation for the research I'll talk about in a minute. Knowing your audience is not adequate. This is a slide, this is a website from the CDC. They've very much said that, you know, you need to develop an effective communication plan by knowing your audience. And I would like to challenge that because to be an effective communications practitioner, you don't only need to know who your audience is, but you need to know a bit about them. You need to understand your audience. This might seem like a subtle distinction, but it's actually really important. Knowing who your audiences are, for example, in demographic terms, may help you locate your audiences. But understanding what makes them tick may give you insights into the reasons for their harmful behaviour. And that's why we should be striving to get data on beliefs, attitudes, worldviews, and cognitive thinking styles. So to address that, I'll be talking about a study I recently published with co-authors Robert Ross, Roseanne Eisler and Dirk Van Roy, and published in the journal Memory and Cognition. Sort of mentioned briefly, there was quite good working with these other scientists because we have people who were behavioural economists, social psychologists, and science communication practitioners like me. There are, of course, many factors involved in misinformation sharing like any other kind of behaviour, but there's been a relevant and emerging academic debate about who accepts misinformation, and the cognitive processes behind it that's flowed into the period of the current pandemic. There are two accounts for the relationship between a person's preference for analytic thinking, as opposed to intuitive thinking, and misinformation beliefs. And that classical accounts, what academics call the classical account, posits that those were the preference for analytic thinking would be less likely to believe misinformation, as they use these cognitive skills to identify the flaws in misinformation claims. Now, why did that make sense? There's also the motivated account, which suggests that in some circumstances, people can use their analytic thinking skills to rationalise information, so that it fits within their prior attitudes, even if it's objectively incorrect. And this account relies on the theory of motivated reasoning, which some people might be aware of, I published a study on climate change last year, which found that this was actually what was happening in Australians views of climate change, where no matter what information you showed them, they would rationalise that. And it was in fact those people who had better analytic thinking skills who are better able to do that. So it meant that in some circumstances, people who were better at analytic thinking were more likely to be wrong about the information that they witness. So what this means is that, oh, sorry, our study contributes to this debate in the Australian context for the first time. And for the first time it investigates the role of analytic thinking amongst both misinformation beliefs, and misinformation sharing intentions. So in May to June last year, we recruited a nationally representative sample of 742 Australian adults. And that's the sample size, it's more than sufficient to answer our research questions here. Our participants, we only chose participants who passed two attention check questions. And so we were quite strict about weeding people out who perhaps weren't being very honest with their answers. Our hypotheses were confirmatory in nature, and we followed open science principles. So our hypothesis were preregistered with the as predicted repository and data and analysis publicly available. So in a study design, we split our participants into two groups. In the first group, we asked them to rate the accuracy of five previously debunked claims about COVID-19, and they were randomly dispersed with five statements, actually made by public health agencies. And we did this to sort of simulate the infodemic nature of what's going on in the communication environment at the moment. The misinformation statements include false claims like that Vitamin C cures COVID 19, or that it was somehow spread by 5G technology. So it's quite obvious misinformation. Where there was little debate about whether it was true or not. The public health advice included statements, for example, that urge people to distance themselves from other people or that you can't diagnose yourself with COVID-19 just being able to hold your breath for 10 seconds, which was something that was going around at the time. In addition to doing that, we gave them a classic analytic thinking test. So this is known as the Cognitive Reflection Test or CRT. Participants were asked to provide an open text answer. And with this test, every question has a possible intuitive, but wrong answer. And that often quickly comes to mind, but a correct answer that can be found with a higher level of analysis. So let me go into a little bit of detail about what that's like, For example, this question. A bat and a ball costs a dollar ten in total, the bat costs a dollar more than the ball. How much does the ball cost? Well, an intuitive answer that rapidly comes to mind is 10 cents. However, if you reflect on this, the answer cannot be correct because that would mean that the bat is only 90 cents more than the ball. So a dollar five plus five cents equals a dollar ten. That's the logic here. People that have read any of Daniel Kahneman's work would be very familiar with this sort of stuff. We thought this variable would be particularly important in a pandemic situation because pandemics are fundamentally a matter of science, and understanding the science in a constantly evolving pandemic isn't always easy, especially when it's much easier to rely on intuitive heuristics, such as the perceived credibility of the source of the message rather than analytic thinking, which can be quite taxing. It's also worth acknowledging here that we rely on intuitive thinking most of the time. So this is not a test that's designed to find out intelligence or anything like that. It's just what is your preference? Are you more likely to use analytic thinking or intuitive thinking? So the top level results, unfortunately, 42.9% of Australians believed at least one of the five misinformation items, and 43.9% were willing to share at least one of them. They were done in separate groups so we can't sort of, you know, match up those two to think, well, why are they more likely to share it? That's just the nature of sampling. But these findings do confirm that Australians had been affected by the infodemic declared by the World Health Organisation. So here are the results from the first group. What we see here is a significant negative relationship between analytic thinking measured by the CRT score and the perceived accuracy of misinformation claims. That is those who are better at analytic thinking were less likely to believe misinformation. Now not only was the significant, the relationship significant that the effect size denoted by this Cohen's D is pretty strong effect size, at least in the social sciences. Now, second group, we measured the intention to share misinformation with other people. This used the same misinformation claims and statements and public health agencies. Here we found a similar pattern where a higher preference of analytic thinking was strongly associated with a lower intention to share misinformation. And we also found a strong effect size here, 0.38, indicating that this is a variable of particular interest to understanding risk information sharing behaviour. So what about the public health advice? So, contrary to our predictions, there was no relationship between analytic thinking and public health advice, regardless of whether a participants were asked, whether they thought it was accurate or whether they were asked whether they'd be willing to share it with other people. There are two potential explanations for this. Cause this is something we didn't expect. The first one is that public health advice was more plausible. And so people didn't need to use analytic thinking. And the second is that analytic thinking may for some other reason, play a special role when rejecting false claims and not for endorsing true ones. So that's something that we might go back to and test at some future time. The good news is that previous research has shown that through simple communication techniques, you can actually prompt people into using analytic thinking. So perhaps this should be a messaging priority for emergency communicators during pandemics, or other emergencies. It also suggests that some of the prompts you may have seen on social media to slow down and read things before sharing them may be effective. So that's actually quite good news to some extent. The difficult news, and I acknowledged this is a complicated thing here. This is something called the elaboration likelihood model of persuasion, but I'll talk you through it a little bit. From a strategic communication point of view, we need to be reminded that to get long lasting change, we need to encourage people to elaborate on something or to cognitively reflect. So to use those analytic thinking skills, to have a more than just a fleeting behaviour change or attitude change. So while things like prompts might work for a short period of time, in the moment, they're unlikely to result in what we would hope to see in a future pandemic, where people are less likely to share misinformation than they are at the moment. So we need to go back and think about the motivations here in order to actually have a lasting effect on misinformation sharing. The other thing is that the prompts that are being used on social media are likely to be ignored in the future. I can't imagine there's a situation where people don't, sort of, ignore that because that's part of being on Twitter or Facebook in the future. So I want to put this in a bit of context. The findings do prompt the next question, which is, what other factors might predict the willingness of Australians to share COVID-19 misinformation. And this work hasn't been peer reviewed yet. So, worth taking this with a bit of caution, but we've identified several other variables that were associated with misinformation sharing in an exploratory interrogation of 54 variables. And these include well-known psychological variables, such as narcissism, perceptions of social status, psychological wellbeing. They also include demographic variables such as age, and education levels, and employment. They include political variables, such as ideology, trust in experts, such as scientists, and trust in the government. They also include a range of belief variables such as the belief in climate change, belief in God, and belief in conspiracy theories in general. So while we're very cautious in doing this work to avoid finding spurious associations. So we used a statistical technique called the Bonferroni correction, which basically makes it harder to find associations with large numbers of variables. So we used a machine learning technique here, which sorts through all the combinations of variables. And what we've found is a few things. After the machine looks at all the 54 variables, it finds only two that are particularly important. What we find here is that the people at least likely to share misinformation about COVID-19 were those who didn't believe in conspiracy theories and trusted the government. Those who didn't believe conspiracy theories, but didn't trust the government were somewhat more likely to spread misinformation. So you're looking primarily at these mean lines here, and also the range. Those who believed in some conspiracy theories were more likely again to share misinformation. And those that believed in many conspiracy theories were the most likely to share misinformation about COVID-19. So unfortunately, perhaps the Australians who share misinformation about COVID-19 may see this more as a matter of politics than a matter of science. And what this shows us is that, yes, analytic thinking is important, but so too are attitudinal factors such as whether you can trust the government and whether in fact people are conspiring against you. So we need to be honest with ourselves that at least some of this behaviour may be the result of deeply entrenched attitudes that are part of people's worldview. And in that sense, we need to have some perspective that changing this behaviour may be possible, but we should not expect misinformation crisis to be over anytime soon. But it's also a call to action to maintain good standards of government, to demonstrate the value the government can bring to people's lives, and to consult with people in person. And I think this is a missing thing in a lot of government communications, where we rely increasingly on the somewhat easy channels, such as social media and TV advertising. However, if you can engage in dialogic communication with people, that is sitting down with people and having a cup of tea and talking with them, you're much more likely to be able to engage their analytic thinking skills, and also to understand your perspective. So in conclusion then, misinformation does seem to be a long-term problem. People that spread it are more likely to rely on intuition rather than their analytic thinking. But attitudes are probably the true motivators here. So prompting people into analytic thinking is the short-term priority, but maintaining trust in government, and reducing conspiratorial thinking might be where the real benefits lie. However, doing that is gonna be very difficult. So thank you very much for the opportunity to talk in a bit of detail about that. I'd be happy to try to answer any questions.

- [Simon] Thanks Matt, again, super interesting. I'm starting to feel like I'm not sure if you've got, getting a bit of echo there, starting to feel a little bit depressed about some of this stuff as we go through it, but that was really, really interesting. So we've got a few questions here, and then we're gonna go over to both you and Carissa, bring both of you in. So I'll just run through some of the ones on Sli.do. First question is, how much do you think helping people think more analytically in a crisis, or when presented with misinformation is encouraging someone to go from system one to system two thinking? So, I don't know if you've thought much about that. And have you got any further tips on how to, how to do that or how to prompt that?

- [Matthew] Yeah, sure. So there are different labels, unfortunately, that academics put on the same sorts of things, and system one system two is just the way that Daniel Kahneman, in fact, refers to analytic thinking and intuitive thinking. So they're very much the same thing. So how you do that is quite, quite difficult, particularly in periods where there's a heightened risk perceptions. Some people are afraid or worried, not only of the virus itself, but of potentially government action. What does this mean for the rest of my life? Being put into an emergency where we don't have the same checks and balances potentially encouraging people to slow down, I think is always a challenge. And it's always a challenge to try to do that by mass communication rather than interpersonal communication. So that's really where I would emphasise trying to find ways of doing that. And there have been some very good ways that both overseas and in Australia, where we have seen that happen. For example, through the community health networks, at least in Victoria, there've been a lot of community health practitioners who've sat down with their communities, and talk through things, individually and in forums, answered all the questions, showing them the evidence, work through the logic. And in that sense, you really can get people to think a little bit more analytically about things, rather than in an environment where they see politician with a red jumper on, or a politician with a blue jumper on, say, we've got to take this action. And people are automatically predisposed not to do that if that's not the colour you like. So, I think, thinking about how we could do that in the future, where we have much more of an on the ground kind of approach to managing these risks, I think would be a really important thing to do.

- [Simon] I've got a question about the conspiracy theorists that, you know, you've kind of said are the hardest to shift here. That's a slightly, you know, they've got an entrenched attitudes. First question is, what do we know about conspiracy theorists generally? You know, what, is there anything that could be done to intervene earlier to prevent someone, you know, becoming a conspiracy theorist? The other is what are your thoughts on how conspiracy theories are represented in the mass media, and whether that actually gives some of these views great attraction?

- [Matthew] Yeah, you've got to be very careful about promoting very fringe events, accidentally promoting them by trying to discredit them. And I think that that's where we are at the moment. It's very interesting for journalists to write stories about, you know, lizard people or something like that because it's so, so weird. And of course that would make a very interesting story. Although there'll be a very, very small number of people who hear that for the first time and start to search it online and start to become convinced of it. So you've got to be very careful about that. One thing we know about conspiratorial thinking, is that those people who believe in one conspiracy, are much more likely to believe in pretty much them all, which I think is a really interesting thing. It's not on a case by case basis. So people who believe in conspiracies about climate change are much more likely to believe in conspiracies about vaccination. For example, I think this goes back down to things like government trust. So if you have come to the conclusion that there is no way that you can trust anything the government does that therefore you start to believe everything because, you know, people say the government's doing, because you relying on that worldview, that governments can't do anything good. And of course, governments do things wrong, just like any other organisation does, but whether they're nefarious in nature, I think at least that to another level, I think, you know, critical thinking education is probably part of it. But finding ways of developing trust in organisations is probably much more important. And being able to do that much more early in a person's life is probably a good way to go. So that they start from a position of trust so that when the government says, hey, we've gotta take some action because we've got a pandemic, we're more inclined to actually draw down on that trust.

- I know this wasn't exactly the sort of subject matter of the research you've done, but can you tell us a little bit more about why that backfire effect is no longer thought to be such an issue in correcting false beliefs?

- [Matthew] Yeah, I can. So there's a academic called Ullrich Ecker at UWA who's been doing a lot of work on this, and I should go back actually, it's a lovely little story. So there are a couple of PhD students who looked at the back to backfire effect, and what they decided to do is, and then the backfire effect is simply that, you know, you're more entrenched in your beliefs if you try to be counted on them. Couple of PhD students, including the Australian guy, who wanted to have this amazing paper that got a lot of citations. So they got every topic they could think of and try to measure the backfire effect. And then what they found is they couldn't actually identify the backfire effect in any of the topics that they came up with. So they send an email to the professor, Brendan Nyhan saying, hey, got a bit of an interesting issue here. We're about to publish a paper that says that we can't find your backfire effect. And instead of the professor saying well this is outrageous, he said, well, it'd be a bit ridiculous to actually believe in the backfire effect more strongly after being challenged on it, given that's what the effect is. So they worked together, and they've produce a lot of evidence now showing that that isn't a particular worry. And so now what we need to do is we need to catch up because there's been a, maybe a lost decade of understanding how effective corrections can be, and what actually makes for a good correction rather than a bad one. But we're much less likely as researchers now to worry about promoting bad ideas by trying to debunk them. Although you've got to be careful that you don't over promote really fringe ideas.

- [Simon] Great. It's 10.45, which was the time we were going to bring Carissa back in I've still got some more questions for you, Matt, but I think maybe if we can have both of you in, you can address some of those. All right, I'm gonna start off with the one that I mentioned earlier in that, what can we do differently or what, you know, a lot of the people on the line work in government, and have the ability to make some of these changes. What should we do differently as we think about the booster rollout? Have you seen any misinformation emerging about the booster program? And then it's probably not so much about misinformation, but thinking about protective health behaviours, where do you see information going generally in 2022 in Australia? Based off what you might've seen overseas? And how can we maintain some of those practices, as you know, COVID continues to exist in the community? So, I might start with you Carissa. You've had a little bit more time to think about this one and then go to Matt.

- [Carissa] Sure. Well, the first thing I'll say is that in Australia, we've got good reason to be really optimistic about this. So what we've seen during the pandemic here is that the population just adapts to what is required of them. So using the policy levers we've already seen, we can control future outbreaks through all the same measures. No one wants to be in lockdown, but almost everyone complies. So although, as Matt mentioned, the media likes to amplify the stories of people doing the wrong thing, or that people believe in conspiracies, or the people who might be protesting. It's such a tiny fraction of our population that is actually not a major concern for our country. It is in other places, Papa New Guinea has really big issues with not trusting and not taking the vaccination. Their vaccination rate is below 2%, I think. So they've got a completely different situation, but the fact that we're heading towards over 80% of the whole country being double vaccinated, gives us the reason for optimism. There's no reason to think that the people who've got the two doses won't get the third one. It might be a little bit lower if the public perceives the threat to be gone. So what, I guess what we've seen with the Delta outbreak is that people were very complacent about getting their vaccinations until there was an immediate threat. And then once there's an immediate threat, every almost everybody takes action. So although misinformation is an issue, and we do want to be across the concerns of the population, I wouldn't anticipate that there'd be any major issues with the booster program, unless a new safety issue emerges. So like what we saw with AstraZeneca, having the clotting condition. So I'm very optimistic about the booster program being done well. I think what we still need to address is the communities that do have those historical issues of trust in government and for very good reasons. So that's particularly Aboriginal communities, but also different migrant populations who might've come from a place where they legitimately couldn't trust their government to do the right thing by them. And in those communities, that's where we really need to co-design the messages with community leaders and people from those communities. So the mass media campaigns will work for most people, but in those communities, we need to use a much more tailored approach.

- [Simon] Matt?

- Yeah, I'd certainly agree with all of that. And the additional thing that occurs to me is that if the government was much more equipped to have interpersonal conversations with people, that would provide a feedback mechanism for you to quickly identify what kind of misinformation might be emerging. So if, for example, you're using the community health networks, do they have a mechanism where they can feedback where we're starting to hear these concerns, and then we can look at that and go, how do we address that? The other thing I think it's useful to do is to think about what would you do if you were making this information about this topic, and putting yourselves in those shoes, I think is quite a useful thing to do. Although going into that rabbit hole might be mentally a bit challenging. But what I would do is I would start saying to people, well, first the government said, well, scientists said one vaccine. Then they said two. Now they're saying three, when's it gonna stop? So try to have some sort of answer to questions like that, I think is really important to try to war game, those sorts of things, and then be prepared and monitor what the community's telling you, I think might be additional things that you to do.

- [Simon] That's really interesting. And on the protective health behaviour front, and again, this blurs the line between misinformation a little bit, but there's certainly going to be a perspective out there that we don't need to continue to do things like wearing masks or, you know, using sanitizer now that you're vaccinated. What can we do to counter some of that? Because I think if you take, if you look at the health advice, it would be that those things are still very important.

- [Carissa] Yeah, so again, we do have data to show that people will clearly follow clear instructions. So I think we can't rely on individual decision making for this. Some people will keep buying masks, but you need to mandate it. So in really obvious high risk situations like public transport, you just need to mandate masks when there's a risk of a big outbreak, you can't rely on individuals to be making that decision in an emergency situation. And I say that reluctantly, as a behavioural scientist, who's very focused on individual decision-making, but we've just consistently seen in our behavioural data that people follow what they have to do. But as soon as you take that away, they, they sort of default that to normal. So people don't socially distances if they're not required, won't wear masks if they're not required for the most part.

- [Matt] The other thing that might be useful is there's a thing called the Swiss cheese model of risk, which, sort of, explains that you can stop a risk at various moments, and actually having the overlay of, you know, the holes of Swiss cheese stop the risk from getting through. And I think if you have the opportunity to try to explain that in a simple way, that could be quite a useful thing to do. That it's not in fact, just get your vaccine and you're done, you actually need to stop at various other moments as well throughout the community. That's the other thing that occurs to me too, when you were talking about individual factors, bringing in a sense, that this is about looking after each other, I think is a very important thing to do. Not everyone's gonna be motivated by that, but there will be some people who are. So understanding that, for example, you don't want to spread this to your football club or your workplace, or to, you know, a hospital that you're visiting and things like that, that it's not just about managing your individual risk, but it's actually looking after each other, I think would be a useful thing to at least consider or at least perhaps do some research on.

- [Simon] A question on Sli.do. Do you have any further insights on ways to help people with lower literacy navigate almost overwhelming amounts of information from the mainstream media, social media and government?

- [Carissa] Yeah, so it's the infodemic issue that was mentioned earlier and the World Health Organisation has identified that as a crisis. So it's a huge system issue. I guess what we can tangibly do now is just those simple things. Just making sure that the reliable information is easy to understand, and then it can be more shareable and also engaging in those communities, engaging the leaders to help make that information spread throughout their communities. So same sort of messages before. But I will also say that there is, I mean, there's increasing recognition that the big tech companies need to play a part in this. And they have started to take action on that with their prompts and things like that. It's actually very hard now to recruit for research on Facebook, for example, if it's about COVID cause you have to get your messaging very clear so that they can't flag it as potential misinformation. So that's actually become almost a barrier to doing research on social media, but it's going in the right direction. And we just have to engage with those companies who have control of where people are getting their information.

- [Matt] The other challenge, I think, is making things interesting. It's very easy when you're not confined to the truth to make things interesting. And that's part of the appeal of misinformation, that it's not confined to those standards. And so there's an extra challenge to people communicating in a pandemic from a government or a science point of view to try to make the interest, the information as interesting as possible. So for example, putting human elements into this, using narrative based persuasion, showing the effect on actual people, rather than here's a bunch of facts that are, you know, even if they're very well written, why would people want to start reading those in the first place? I think it's something that I think is a challenge for governments, you know, forever, but particularly during a pandemic where, you know, you're up against social media posts where they show, you know, people apparently with the symptoms of a vaccine injury, well that doesn't necessarily have to be confined to the truth. Who knows what that picture might really be about? But where is the government showing, you know, a person living their lives happily, and some of the advertising has been doing that. Some of it probably is a little bit limiting, but in government websites in particular, what makes that an interesting thing to read, even if it's just a list of facts rather than more of a story, for example.

- [Simon] This one comes back a little bit to the discussion we had around the backfire work earlier, but it's the question is we're talking about corrections, and it's what makes for a good correction? How do you go about correcting? You know, that's something that I think this might get to your Christmas family discussion.

- [Matt] Yeah, for sure. Okay. So, there's a really good group of studies that have shown that replacing holes in people's mental models is a good way of doing that. And it's complicated kind of psych language for meaning explaining the logic and the connections behind something. So when you say that fact X is not true, that's not a good correction because it doesn't replace it with anything. So you need to say, what is the, the fact that replaces that, but then you need to go on, and actually explain the logic for why that actually makes sense. One thing that just occurs off the top of my head is, you know, you hear people saying that governments are shutting down, going into lockdowns because, you know, that's what they want to do. I don't know any government in the world that wants to reduce revenue, right? So it doesn't make any sense to me that the government somehow want to have lockdowns for lockdown sake. So, you know, explaining those connections so that people actually form a web of the knowledge is actually really important here rather than just trying to defeat an isolated fact.

- [Carissa] I'm gonna say I work with some really well leading communication researchers in vaccination, such as Jessica Kaufman, and she's put out heaps of really good articles about how you deal with this on a one-to-one level. So one of the things is just to listen to people's actual concerns. So when you look at the data, it's such a small group of people who are actually really hardcore believers in these conspiracy theories and really, really resistant to vaccination. And for those people, it's probably not worth your effort engaging, because you're not gonna change their mind, but there's a big hesitant middle group who have legitimate concerns. And sometimes it just takes one conversation to understand what they're concerned about, direct them to some reliable information, or share your personal story about why that wasn't an issue for you. And that can change someone's mind completely, and then they can go on and change other people's mind in their networks. So I think just taking, rather than assuming everyone is a crazy conspiracy theorist, we need to acknowledge that these are legitimate concerns in a really fast changing information environment, and unprecedented in our lifetimes. So sometimes we just need to take that time to listen.

- [Matt] The other bit of advice, to just chip in there is really analyse your own motivations for engaging in these conversations. Do you actually want to have this conversation because you care about the welfare of the person you're talking to, and you want to influence their behaviour towards more healthy behaviours? Or is it in fact that you want to be right, or whatever, have an argument with someone or settle an old score? It, you know, make sure you're focusing on the actual behaviour here. And if you don't think you're having an effect on the behaviour, then why are you actually having this conversation in the first place? Maybe it's worth going and sitting with someone else, and talking about, I don't know, Christmas carols or something.

- [Simon] Let's go to a question more broadly around misinformation. And it gets, I think back to Carissa around talking about the vaccine, you know, with and hesitancy, we thought about 5% of people might, you know, not get vaccinated, nothing at times we thought that would be larger, but it's panning out for some places in Australia that that's reasonably accurate. I remember early on with COVID, and the vaccination programme within government, there was a huge amount of concern around misinformation and the power of it. So this is, it's a bit of a strange question, but given how things have panned out, is misinformation and our fear of it a bit overblown? In aggregate, because I'm gonna come back to certain groups in a minute.

- [Carissa] Yeah. Yes, there's an equity issue, but yeah, overall, I mean, I guess what our data has shown when we've looked at the longitudinal data, it's all about the perceived threat. So that's a bit of a challenge because it means that it's really hard to motivate people to get over that misinformation or concerns until the threats already here. So that's, I guess our challenge in communities, particularly in regional Australia that haven't had the experience that we've had in Sydney and Melbourne of being in these lockdowns, and being, watching the case numbers go up everyday at the 11:00 AM press conferences. And until you have that, it's very hard to actually think of COVID as a legitimate threat. So unfortunately, I don't think we would've got to 95% in New South Wales unless we had our Delta outbreak. And it's very frustrating as a communication researcher that would be, we could have had all those people vaccinated six months before, and hundreds of people would still be alive who have lost their lives. So it's tragic, but, I do think that it's really around the perceived threat and that trumps any misinformation when it comes to.

- [Simon] Matt, any comments there? I don't want to undermine your PhD topic getting published, but...

- [Matt] No, no, no. I share your concerns. It's hard to actually find a causal relationship between misinformation and negative behaviours. So while we all think that this is probably true, does the misinformation actually cause the negative behaviours, or is part of what we're seeing actually that people are always gonna do these behaviours, but then rationalise it by saying, oh yeah, I saw something on Facebook. So you've got to be careful that we actually really don't overblow the harms of misinformation. Because in this pandemic, they're not as obvious. Like, for example, in the Ebola pandemic, there were situations where people in Africa attacked doctors, because what they saw in their villages was whenever the doctors turned up, shortly after that Ebola turned up. And so they thought that the causes. And so that was quite obviously a causal thing. Here, I think we've got to be very careful that we don't overblow this, and I'm quite cautious about whether misinformation is the kind of problem we think it is, or is it in fact, just one of these annoying things that gets a lot of attention.

- Sort of counter to that, thinking about some specific communities where there has, for instance, being lower vaccine uptake, or other instances reasonably early on there seem to be some alarm bells ringing that those communities or pockets of them were being targeted with more sophisticated misinformation through social media. And I guess what I'm wondering is whether that's, sort of, now sort of demonstrated in the lower vaccine uptake in some of those communities, for instance. Or again, if it's other factors at play. And also whether that's actually true. I mean, you know, I'm trying to avoid this sort of becoming like almost popular myth that some communities were targeted and was spreading misinformation more rapidly through social media.

- [Carissa] Yeah, that was, the media was reporting that in Western Sydney communities during the Delta outbreak this year, but when you actually looked at the data, it wasn't the case. So actually trust was not an issue during the Delta outbreak. It was more around access issues, particularly around for both testing and vaccination. If you're in a precarious work or employment situation, and you have a large family to support, you're gonna be less likely to get tested because then you've got three days of missed work. And same with having to travel to get a vaccination if it wasn't immediately available. So what we saw in Western Sydney is that although the media was starting to report about trust issues in certain particularly refugee groups, and that can be an issue, once the threat was there, actually everyone was happy to, almost everybody was happy, to get the vaccination rates. And we haven't seen those disparities play out in the migrant groups in Western Sydney. I think Aboriginal communities is a different issue, and there's definitely been certain misinformation circulating in those communities. And again, I think the solution there is that they're not going to look to government for information that they can trust. So you have to engage community leaders. And to answer the question from before that, I actually forgot to answer, it's not just religious leaders. It might be celebrity musicians, such as Baker Boy have got engaged in, on social media and also in sort of mass media campaigns targeting Aboriginal people. So it's just finding the right spokes people. And then I think you can get around that misinformation in those communities.

- [Matt] Yeah, thinking general terms. There's also an issue where there are people who are now disengaged from, as you pointed out, Carissa, disengaged from usual communication channels who perhaps don't trust the government, and they're not necessarily migrant groups or Aboriginal communities or anything like that. They might just be, you know, people who don't know much about politics, for example, and when they see this sort of thing happen, they assume the worst. So we need to think about how do we actually form connections with people who've somewhat become disengaged from governments, and scientists, and doctors, and others who want to, you know, explain to them how they might want to manage their own risks. That's a long-term project. And it's probably a project that, you know, could happen in every country, but there is a group of people who, you know, don't trust the system, the contrarians. What do we do about those sorts of people, particularly, what would we do if we faced a much more acute kind of crisis in the future?

- [Simon] Got a couple more questions and then we're going to finish up just a comment from you on where Australia kind of stands globally on the impact of misinformation. I mean, we've spoken a little bit about the culture generally in Australia, or being a compliant culture, reasonably good levels of trust in government, which were very high at points during the pandemic. Other countries didn't enjoy that necessarily, but overall, a we a country that, are we at the start of our misinformation journey. And are we going head, you know, in the direction of other countries, or is there anything different about the culture in Australia, which might prevent that happening?

- [Carissa] That's a good question. I don't have immediate research to answer that, but what I will say is that the Australian government has been willing to make really big legislation calls around social media and the spread of misinformation, and conspiracy theories. So this started after the New Zealand massacre, where it was promoted on YouTube, and the Australian Government responded by making YouTube responsible for that. And in a way, Australia doesn't have enough power in terms of market share to actually make that happen. But we seem to be willing to be, kind of, leaders in suggesting these radical changes to holding social media companies to account. And it remains to be seen how effective that will be. So if it gets through here, they have two choices, they can cut off our market, because they're not worth much to them in terms of financial considerations, but also it might sort of start to spread that idea to other countries. So Australia is actually being quite world-leading on the legislation side of dealing with misinformation, but we're still at the very beginning of that.

- [Matt] And one of the problems with this sort of stuff is that there's never enough international research into this broad area in social science, in general, and probably many other sciences as well. However, one thing that does occur to me is that our levels of political polarisation at the moment aren't as high as some other countries, for example, the UK and Canada, and the US in particular, where a lot of the misinformation was seen through, you know, political frames and then on shared to other people. And we do need to be mindful that that could well happen here. What we do about that, I don't know. But the information certainly does flow from these countries. So you see people talking about how, for example, you know, they're attacking our freedoms in the constitution to a right of expression, you're like we don't have that in Australia, explicitly. So, and they just reading things that they're saying on social media from the United States. So I don't know if there's necessarily anything unique about Australia in the way that people approach misinformation that we have data on yet, but I would be very, very worried about political polarisation of particularly science and health issues.

- [Simon] Fascinating. Just gonna end on a, maybe a lighter note. I'm not sure, what's the most surprising piece of misinformation you've seen over the last couple of years that's got some traction?

- [Carissa] It's gotta be the 5G one. I just find that so, like almost hilarious if it wasn't so serious. And I have spoken to people on social media. So we're working with the platform Twitch, which is a gaming platform, and I've got some views from the account managers there on different ways that we could deal with these sort of conspiracies. And their view was that the survey data would just always be inaccurate for that because this 5G idea has actually become a meme on these platforms, so it's funny to them. So it's actually, I think that one is probably the most extreme one, but it's sort of become almost part of popular culture in certain communities on the internet. So I think that one's a really interesting one for me.

- [Simon] Matt.

- [Matt] I mean, I'm attracted to that the lizard people thing, but that's really, really random stuff.

- [Simon] You're attracted, as in you are going to join them, or...

- [Matt] I can neither confirm nor deny that I'm a lizard person and that I'm funded by big pharma. You know, the big pharma conspiracy is a really worrying one because yes, we're right to be very cautious about what pharmaceutical companies do, but then assuming that everything they do is against us in some way, or is something to do with population control, very worrying stuff, because, you know, ultimately the way to control pandemics is through the products of big pharma. So how do you manage that uncertainty? It's very, it's very difficult, but for me, it's always the lizard people.

- [Simon] Great. And I don't know a lot about the lizard people, but I will be Googling them. So you may, if I end up being a lizard person, I'm blaming you. All right, we're gonna finish up there. That was really, really fascinating. There's a lot of people interested in getting some of the source material, and some of the citations that you've got today. So we might reach out to you afterwards, and get some of those and we can distribute those amongst everyone who has been listening in and others, if that's okay. And with the type of audience you've got, you can almost certainly expect follow-up questions from some people. We've got a really inquisitive group. So I hope everyone online, and who's going to watch this in the future, can join me in thanking Carissa and Matt for today's really fascinating topic, really thought provoking. And it seems to be the big issue of the day, although maybe not as big as we may have thought, but I think it's going to stick around for a long time. We've got one more session in our BI Connect Series. It's going to be on Tuesday, the 23rd of November. And that theme will be Building Back Better. And we'll be hearing from Dr. Trish Lavery of the OECD, Stephan Kaufman and Dr. Alexander Sairi from BehaviourWorks Australia and Professor Alex Haslam from University of Queensland. So that's the last in our kind of, I guess COVID series. And we're hoping that we don't have the 2022 COVID series, and then we can talk about something else. So thanks again, Matt and Carissa. Was really great, and yeah, hopefully we'll speak again.

- [Carissa] Thank you.

- [Matt] Thank you.