Thank you, thank you all for coming out tonight and for the nice introduction.

Tonight I’m going to talk about a case of wrongful conviction. And you might think it is a little bit weird that someone from within the school of psychology is going to talk to you about a legal issue. But hopefully by the end of my talk I’ll convince you that science, and specifically psychology, can actually help solve cases of wrongful conviction and prevent them from happening again.

So the focus of my talk tonight is going to be on memory, specifically on eyewitness memory. And the nice thing about memory is that everyone has an opinion, because everybody, hopefully, has memories of their own. About childhood events, about parties that you went to, maybe about what you had for breakfast this morning. And everybody has a different opinion about their memory, so they rate it in different ways.

Some people are convinced that they have a brilliant memory, that they remember every single detail. They can recall what the dog of their best friend’s Auntie was called when they were 14 years old, and they can tell in every glorious detail what they did 4 years ago. Other people are more sceptical about their own memory, and they say, “Oh, I’m actually really bad at memory”. So when they try and see a person and recognise them, they are really bad at remembering faces and names. And by tomorrow they might not even remember that I was the person giving this talk.

But one thing that everybody has in common is that when they are asked to rate their memory, for example for a crime, they normally say well that is the type of event that I will be able to remember. It is a big impact event that may be quite a bit traumatising, and that is something they would say they could tell you everything about.

But that may not actually be the case.

So we are going to do a bit of a memory exercise. If you think back to this morning, you got up, you went about your day, and you had this whole day planned out. You had to go to work, maybe you went to uni, and maybe you were so lucky that you actually got to enjoy the sun today. Well the day evolved, and by about 6 o’clock you made your way over here.

Now you are sitting here listening to me, you are going to have a brilliant time and then later tonight you are going to drink a bit more. And tomorrow morning you might wake up feeling a bit rough. And you might not quite remember what you did last night, so you are going to try and use memory queues to piece last night together. You might use different queues, the first queue I use is to look at my banking app on my mobile phone and I’ll try and see what I spent. And then you go “Oh yeah, I was buying all those tequila shots for that nice presenter.”
So that is your first queue. Then you continue on and you go through the gallery of your phone and you see, “Oh yeah I actually then went to this other bar, cause I recognise the layout of the bar and there are these pictures of other people.” And then you can also see in your PayPal account that you took an Uber home. So you reconstruct in your memory, you might not remember everything, but that is fair enough, that is good enough.

However, about halfway through tomorrow morning you get a call from the police. And they say, well we got your number because you signed up to this event called Raising the Bar. Between 5.30 and 6, someone got stabbed in front of the Bristol Arms. Can you tell us what you remember when you arrived at the bar?

So you have to go back through your memory and think, I arrived with a few people or maybe you arrived all by yourself. The Police say someone got stabbed, there were multiple people involved and people ran in all different ways. And you think back and think, did I see a very distressed person, did I see someone covered in blood or did I see a person that looked very out of place at the bar. All of a sudden very little details of all these different people become important. So they might ask you what were they wearing, what was the colour of their hair, the colour of their eyes? Now, these might seem completely benign to you, but these can be the facts that the police require to solve the case. And based on these details you recall, they are going to charge a person and possible convict a person.

So within that context, can you honestly say to yourself I would be a good eyewitness? Now, this still might seem like a bit of a stretch, and people think I truly will remember whomever I saw. But mistaken identification and mistakes within eyewitness memory was the actually the cause of the case I am going to discuss next.

I’m going to talk about a case from the Netherlands, because I’m originally from the Netherlands and I worked within an Innocence Project there. And one case that we looked at there were eyewitness involved. So a lot of different things actually went wrong within that case, but for the purpose of this talk I’m just going to focus on the eyewitness memory.

So it happened in the Netherlands, I’m going to use a few Dutch names so it can be a bit confusing, but just stick with me. And I’ll show you how important it is that we are actually able to remember specific details.

I’m going to take you back to the Netherlands in the year 2000, it’s summer over there, June the 22nd, and Michael, who is 11 years old, is playing with his classmate Ninka, a little girl who is 10 years old, in a park. It’s a park in a little town close to Amersterdam, and it is very easy going, nothing really happens there.

So they are playing after school and they realise it is getting late and maybe they should go home for dinner. They check the time with an elderly man in the park,
and they realise, yep it is absolutely time to go home now. But on the way to their push bikes, which they had dropped somewhere in the park, they are intercepted by a man. He threatens them with a knife and he forces into the bushes. Now in the bushes, horrendous things happen, and it ends up with Ninka being murdered. She is strangled with a shoelace from Michael’s shoes, and then he tries to murder Michael. He tries to strangle him and to make sure he is dead he stabs him in the neck.

Michael miraculously survives this attack. He plays dead and he waits until this person actually leaves the scene of the crime. And then he runs out looking for help. So he runs out of the bushes, and at that time two men on their pushbikes, independently are coming back from work, and riding along and see this little boy covered in blood, naked, with a shoelace around his neck with shoe still dangling off it. So they stop to see if they can help him.

They chat to Michael and Michael tells them that his friend is dead in the bushes. One guy goes into the bushes and checks the girl and realises she is dead, and the other guy calls the police.

The police arrive very quickly, but at this point a small crowd has evolved around the scene of the crime, so the police take statements. Now this is a horrendous crime, and crimes like this don’t often actually happen within the Netherlands. It’s all over the media, and the community is outrage, and are very concerned about this all.

There are not a lot of clues actually to go by. The police take this very seriously, and what they do is put 25 detectives on this case, they want to get this solved as soon as possible. The only evidence to go by that they actually have is the statement from Michael and the description of the perpetrator. And Michael is quite accurate, so he says that the perpetrator is a man between his 20’s and 35 years old, he was very skinny, very pale and had very bad skin. So he had a lot of acne and a lot of scars from acne. So that is the only thing that the police have at this point to go by.

So they are looking into it, 25 detectives working around the clock, but they cannot find anything. So a month has passed and the pressure is building. Not just the media is asking for answers, but the community and politicians are asking for answers. So what happens at that point is that one detective goes over all the statements again, and looks at all the people that were there when the crime was committed and the people that called it in. And all of a sudden he recognises this one name of a person that was there. His name, it is a Dutch name, it is going to be confusing, is Case.

And what they know about Case is that he has a track record of interfering with children. And what is even morning convincing is that he was actually there at the time of the crime, and he was the one that called in the crime. So he was one of the two men on their bikes.
Now the police think, ah there is something going on here. But Case doesn’t really fit the description that Michael gave. Case is quite a festively built person, his skin is quite OK and he is nothing alike what little Michael described. However they think, well it was a child; can we really rely on a child, are they really good at providing these statements? Maybe we shouldn’t. So they arrest Case and they start interviewing.

Now they interview him for 6 days, and they put a lot of pressure on him. And at the end of the 6 days, Case comes to confess to this crime. The details he mentions, some add up with the story that Michael said, but a lot of them don’t add up. But the police think, well suspects often make up a lot of details and the majority is right and he was interfering with children, he must be this guy. At the same time they are running his DNA with to the DNA that was found on little Ninka that got killed.

After Case confesses and he is out of the interrogation situation, a day later he retracts his confession straight away. By this point the police have already written up his statement, they haven’t mentioned anything about the pressure they put on him throughout the interviews, and they say he confessed, he must be guilty and he has this history.

Then the DNA comes back. They found DNA on the little girls shoes, on the shoelace that was tied around her neck, and underneath her fingernails. Now the DNA on her fingernails and on her shoes does not fit Case’s DNA, however on the shoelace it is some mixed DNA and with some royal statistical analysis they can say well part of it could match this.

So the police are very aware that they could not convict him based on the evidence they had. They have a confession, they had a kind of partial match with DNA, but what they really need is an eyewitness to put him there. So they revisit the eyewitnesses. This is now 4 months after the crime has taken place, and they go and chat to all the eyewitnesses again. And, what do you figure; all of a sudden this woman comes to remember that when she was walking her dog she actually saw Case coming out of the bushes at the time of the crime. She’s like, was that the time of the crime, was it a day later, could be either but he was definitely there. And even if it was a day later it's very suspicious that he was hanging around in those bushes.

Then there is this other guy that said, “Well the bike that Case rides, I saw that in the grass, next to the bushes at the time of the crime”. And that actually places him there. It is the thing that he moves around on, it is an indicator that he was actually there. So based on all this information they gathered, we have the eyewitness testimony, the retracted confession, and we’ve got his partial match in his DNA, this actually convicts Case.

Now fast-forward 4 years later. In another place close to Amsterdam, a guy called Wick gets caught while he tries to rape a student. When he gets interrogated about this rape, he also linked to another rape and stabbing that happened 2 years before. He starts talking about all his crimes, and before you know it he
starts talking about this girl that he murdered 4 years ago in a park, a 10-year-old girl, and the police think well that sounds familiar.

So they look back into the case and they realise that he is talking about the murder of Ninka. But how is this possible, as we have a person that is convicted of this murder already?

So they ask a little bit more and Wick, without any prompt, comes up with all these details that only the perpetrator of the case would know. And then they look at his DNA and they actually match it to the DNA that is underneath the fingernails of Ninka and on her shoe. It then becomes clear that they actually convicted the wrong person. So Wick goes to jail for the murder and attempted murder of Ninka and Case gets let out into society again.

Now as I said before, it’s not just the eyewitness statements that went wrong, a lot of different things went wrong. But I am going to focus on eyewitness memory from now on, and to start off with I am going to talk a little bit about ‘Confirmation Bias’. We talk about confirmation bias within psychology, when people only focus on evidence or specific aspects that will support their hypothesis or ideas, and they neglect or ignore all the evidence that is contradictory to their hypothesis or ideas. And in everyday life, it is actually quite a useful thing. You can justify whatever you want to do, if you want to purchase something online and just look at the things to support your idea of why you need that new dress, it’s brilliant.

But as you can imagine, within legal situation or within science, it can actually become a very big problem when you ignore anything that contradicts what you are trying to prove. And within the case, what we see is that the confirmation bias by the police was actually facilitating the mistakes within eyewitness memory.

Now I don’t want to talk down the police straight away because they were under a lot of pressure, they needed to solve this case. We’ve got the whole media looking over your shoulder, trying to find out what you are doing, and they just tried to do the best they could.

But now we look at memory. To look closer at memory in general, unlike popular belief, memory is not a direct representation of what we experience. A lot of people believe that memory works a little bit like Netflix. So if you try to remember a specific event, what you’ll do is select your favourite show, you’ll look at the episodes, and then within the episode you’ll fast-forward to the part that you want to look at, you can rewind or you can pause, and you can describe everything that you see at that time. However, that is not how memory works.

From research we know that memory is reconstructive. This means that a lot of different influences will actually determine what we remember. It can be the way we feel at the time that we try to remember something, it can be the queues that we use, it can be the questions that somebody asks us, but also the person we are talking to.
So if we think about memory, like if you are very happy and you think back to a birthday party that you had when you were a child you will remember that birthday party in a lot more positive way than if you were very sad when you are thinking about the birthday part. If you are talking to your new boss, and you have to recall a specific event at your previous job, you will paint yourself in a completely different picture than if you were talking to your best friends.

And it is not just that you are intentionally trying to do that, but unconsciously you are actually re-writing your memory every time that you try and recall it. So memory is reconstructive and influenced by the queues or suggestions that you use to try and trigger that memory. In addition to that, we also have natural decay in memory. What this means is that over time we remember less and less. So if you witness a specific event, within the first hour after witnessing that event, you will already forget about 60% of all the details of what you witnessed. That is a really big proportion. Then over time this becomes less and less until a certain point it plateaus out, so you can imagine a day later, a week later, a few months later, you can only remember a very small proportion of all the events that you have witnessed. And this is even for quite traumatic events.

Now the problem is, because memory is reconstructive and you've got that natural decay, that at a specific point if people then ask you to recall a specific event, for example think about the eye witness, the lady walking her dog 4 months later, what do you remember about this person coming out of the bushes? What you'll do is you'll try to use the suggestions that people provide, or little clues that they provide, to fill in the gaps in your memory. This was really nicely demonstrated in a classic study on memory and how memory is reconstructed. What they did here was have participants watch a video about a car crash. And after they had watched this video about a car crash, they asked the participants different questions. Some were asked how fast the cars were going when they smashed into each other, others were asked how fast the cars were going when they bumped into each other, when they collided, when they crashed.

And what they found was that depending on the word used; crashed, bumped, collided, people gave different speed estimates about how fast the cars were going. And this tells you a big thing that you will adjust your memory to the question that is asked. It goes even further, when little words will actually be able to change your full memory and what you will remember. In that same study, they asked some participants if they saw broken glass at the scene of the crash. And if they just asked that some people said yes, some people said no. But then they asked other participants did they see the broken glass at the scene of the crash, and almost all participants said yes. And in the original video there was no broken glass at all.

So what we show is that by introducing one small word, we can make people remember things that were not actually there. And you think, well it is a university experiment what does it matter. But if this were the police asking you
a question, you might start reporting details that weren’t there, and that can send them into the wrong direction.

This is general eyewitness memory, so if we now change this and we see that how we ask questions, if we use little words, suggestions that we put in there, changes memory and then we look back at the eyewitnesses in our case. So we have a trio of eyewitnesses. The first one is the lady with the dog, the other one was the guy who identified the bicycle and then we have little Michael, who with his description was considered not to be accurate because he was just a child.

If you look a little bit closer, what do we see? So this lady with the dog was asked to identify the perpetrator. She was asked to identify this person from a line-up. A line-up works like what you normally see on TV shows or in movies, you are presented either with photos or a live line-up and you have to identify the person that you saw at the scene of the crime. Now how we ask people to identify that person can actually change if we identify and if we wrongly identify someone. So if people are unsure and they get the instruction to identify the person that they saw committing the crime, they are more likely to choose someone. Because that question, “identify him”, actually implies that he must be there. So they are very likely to choose someone. However, if we tell those same people, “the perpetrator may or may not be in this line-up”, they are a lot less likely to choose someone. So again, how we interact with witnesses will influence what they remember.

Now what they did with this lady is that they actually went up to her four months after the crime had occurred and they presented her with one picture, and this was a picture of Case. And they said, “Did you see this guy in the park?” Now this lady walked her dog everyday in the park, and Case rode his bike everyday in the park, on his way back from work he would come back through the park. So she said yes. And then based on the questions that they asked, she came to remember that he came out of the bushes.

Now this is a case within psychology that we call, unconscious transference. It is when you come across a person within a specific context, and then something else happens within that context, you can place that person at a different day and time, and then associate them, for example with a crime, just because they normally fit in there. But it actually changed her memory, and she came to believe that she saw this person coming out of the bushes.

If we look at the other eyewitness then, because he recognised the bike lying there next to bushes, and that is very incriminating. That is somebody that points you there and says, “I saw his bike, that is what he uses to get around, so he must have been there.” Now this person was only contacted 6 months after the crime took place, and by this time he was travelling overseas, so the only thing they could really do was email him pictures of the bike to make sure he identified a bike.

And again, instead of providing him with several pictures of bikes, they send him just one picture of the bike and title the picture ‘suspect’s bike’. So again, this
implies that the police must believe that this person is the suspect, so I must say yes. So this person says, "I'm so convinced that this is the bike, and the reason I'm 100% sure this is the bike is because of the model and colour of the bike. They match perfectly." The nice thing about this is that the picture was actually black and white, so there was no way he could have recognised the colour. However, the police conveniently left this out of the final statement.

These are then the two initial witnesses, and up-close they might not be as reliable as we expected. Now let's look at little Michael. So what happened to little Michael, well he gave his description and the person that went to jail didn't match his description at all. However, the person that was later convicted, Wick, actually fit his description to a T. So are kids reliable, are they not, should we rely on their statements, should we rely on their memories or should we just neglect it straight away?

Now from research, we know that children can be as reliable when providing statements as adults are. As long as we ask the right questions and as long as we don't provide them with any suggestions, as with adults, they can give us very accurate statements. So kids as young as 4 years old, can give us a very accurate statement about an event that they have experienced.

The problem with children though is that they are a little bit more susceptible to suggestion than adults are in general. If a person with authority, like a police officer, asks them a question, they are more likely to comply with that question. And if they believe that the police doubt their answers, they might change it. It also shows that if the question is repeated to them, they often interpret it as meaning that their initial answer is wrong, because this happens to them all the time. If they are at school and the teacher asks them a question, and they provide an answer and the teacher says, "are you absolutely sure about that?" This is an indication that they are wrong. So if the police do this, they often change their answer and become more inaccurate.

If we look within Michael's case, he was actually really accurate in giving his description. And what we need to take home from this is that kids can be accurate as long as we ask them the correct questions, we don't ask them leading questions and that we explain why we might repeat a question. If we give a justification, they won't just change their answer to be compliant.

Taking all three witnesses together, one thing that came up within this was that, for example, the guy that recognised the bike said he was 100% sure that that bike was his. This was also the same with the lady with the dog, when the case came up in court and she was testifying, she said she was 95% sure that Case was the guy. So eyewitnesses are very convincing. And juries find eyewitnesses evidence so convincing that they are more likely to convict after hearing an eyewitness, independences of any other evidence that is presented.

Is confidence a good indicator of accuracy though?
Research has found that confidence is not a good indicator of accuracy. What you need to do to make sure an eyewitness is accurate is actually take their confidence at the time that they are making an identification, or at the time that they are making their statement. This is because there is this phenomenon that is called ‘confidence inflation’.

It often happens within the legal system and legal procedures. At the time that an eyewitness is called in to identify a perpetrator from a line-up, and they have made an identification, they might say they aren’t sure. Number 6 kind of looks like him, but I’m not sure. But number 6 turns out to be the suspect that the police and prosecutors believe have done it, and so they are standing there congratulating you, this lifts your confidence. And then afterword’s, over time, you see that this person is actually getting charged, you read in the media about it. And by the time you are actually called to testify in court, you become to confident that you must have been right, because otherwise this person wouldn’t have been charged, and wouldn’t be in court now.

At this point people become so confident in their initial decision that they might not have been confident about at all, that they now say they are 100% sure. It doesn’t actually mean that they were right because they were very uncertain at the start. So we have to be very careful when people say they are very confidence at trial, and we need to measure what that confidence is at time of statement or at time of identification. These were some issues with eyewitnesses within this case. So what can we learn from this, what do I want you to take home from this?

If we look at what happened within the Netherlands, after this whole debacle happened, and a lot of thing went wrong, there was a big overhaul of judicial processes. So they changed the way interviews with suspects were focused. Instead of focussing on getting a confession, and trying to pressure people into getting a confession, the focus become on truth finding. And actually more into an interview style than an interrogation style, and trying to go away from using different techniques to pressure them into confessing to a crime.

We also see that the use of expert witnesses was more and more allowed. This, for example, was used to explain how DNA analysis actually works, so how we should interpret statistical analysis, because we expect judges or juries to understand very complex scientific evidence. So we use expert witnesses to explain it better. They also looked at how line-ups should be conducted, and specifically avoiding one-person line-ups or just one picture.

If we focus on Australia, we see that there was a big overhaul over here as well. This was triggered by the royal commission into police corruption, but we see similar changes have happened over time. As science has developed and wrongful conviction cases came up, police systems and judicial systems have adjusted their practises. Over here as well, our interviewing techniques are based on the peace model. So this is not trying to get a confession, but actually to set up a good conversation with your suspect and trying to elicit as much information as you can, and trying to find more evidence rather than to get a confession.
We also see that the way that line-ups are conducted within NSW, are very strictly regulated and the instructions that police officers need to give need to follow the recommendations that psychologists have provided. Telling people that the suspect may or may not be in there, never suggest that they are there and always use a person that is not aware of who the suspect is in a line-up in case they give unconscious clues.

You see that it goes further as well. NSW is very good at educating people within the legal system. My colleague and I, we lecture on eyewitness memory within the detective force and the police force. So we talk to them about how memory works, what are the pitfalls when you are trying to interview people and what are the things that can go wrong. We also provide lecturers to judges, barristers and lawyers and educate all the different parts of the system.

Does this mean that no mistakes are being made in NSW? Well no, probably mistakes are still being made, because in the end, everyone within the system is human. And humans just make mistakes.

What we see though is that we are creating awareness. Society around us is creating awareness by using shows like Making a Murderer and Serial, and we see that the community becomes aware that wrongful convictions actually can happen and that there these mistakes. And by creating awareness you can actually create changes.

And the last part, to conclude my talk, is that we create awareness and we are educating people from the start. So within Not Guilty, we are already teaching students within their undergrad or post-grad that they can use each other’s knowledge. We let psychology and law students work together to solve cases or to analyse cases of possible wrongful convictions. And what we they hopefully take home from that is that within the future they can use this knowledge and they know who to contact when they come across specific things.

So will wrongful convictions never happen again within Australia? Hopefully not, and specifically not with all the students that come out of our project, but most likely they will. But at least we are aware of them and we’ve got systems now to try and solve them.

Thank you.