Would I lie to you?

(an examination of eyewitness testimony in a criminal trial)

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CONTENTS	**PAGE**

Memory and Reliability

Introduction

Notwithstanding what the Courts have said since before Federation, one of the greatest misconceptions we continue to have about memory is that it is largely an accurate recorder, faithfully transposing into our brain events as they occur. From a witness' point of view, it is important to remember that whilst we often doubt the memories of others, we rarely question our own. However, all witnesses, no matter how seemingly reliable and honest, are accessing changing or changeable data. The process of experiencing or acquiring, laying down or storing memory and then reproducing an account, all of which is involved in "recalling or "remembering", and therefore giving evidence in a criminal trial, is disconcertingly malleable. It is at best, almost always, a rough reconstruction with inaccuracies and distortions.

Notwithstanding, witnesses think that their memories for important things are reliable. Memories of a crime are unusual, confronting, distressing and are said to be "memorable". These memories for important things, such as exactly what happened in a sexual assault or robbery, are the mainstays of criminal prosecutions. Unfortunately, those kinds of memories are notoriously the least reliable of all. It is often left to a vigorous and skilled cross-examination of any eyewitness relying on memory to unseat the notion that memory, even honestly described, is reliable. And often without recourse to other evidence, against which it can be tested, one is left only with the eyewitness' recollection of what occurred.

Stages of Memory

In order to examine this properly, it is important to understand how memories are formed and where mistakes in memory can occur. The steps in memory acquisition and retrieval are as follows:

i. First, memories are encoded or acquired. The witness experiences an event and information is transmitted into his or her memory system in the brain. At this stage, memory is affected by both event-specific variables (such as duration and type of event) and witness-specific variables (such as age, alcohol intake and vantage point).

ii. Memories are then retained or stored. This period focuses on the time between the point of experiencing the event and acquiring the memory and the point at which the witness is required to recall the information either to police in a statement, or to defence legal representatives. During this stage, which might be long or short, factors such as the passage of time or post-event information may contaminate the witness' memory.

iii. Finally, there is the retrieval stage, when the witness attempts to recall the stored information. This is where matters such as cross-examination and pre-hearing questioning can have a significant impact.

Limits on Memory Acquisition

Even with the first step, all witnesses experience the world with a false sense of completeness. It is a misconception that any one of us is fully aware of everything around us. Attention is in fact highly limited because no one notices things that don't appear at the time as being important. So the witness may not have noticed at all what criminal defence lawyers, police officers taking statements, and prosecutors later think to be highly important.

What the witness' eyes detect, and what is processed in their brain for later access, are entirely different things. They receive only a very small amount of information. The brain fills everything else in. That is the nature of the attentional limitations in humans. With limited exceptions, no one processes everything, but rather the brain makes selections about what is important and what is not.

So if a witness to a crime is at the time concentrating on a particular task, there are many things going on around him or her that will not be perceived, particularly if they are not expected.

If you are interested in this, look into the work of Daniel Simons, dealing with "*focussed attention*".

One day-to-day example of this is faults in films, not spotted in editing or by test audiences, notwithstanding the close attention given to those tasks. And it is often something right in the centre of the screen, which is nonetheless disregarded by the brain because it is unexpected and doesn't fit into the expected scenario.

Take the film *Gladiator* as an example[1]. A crewmember in blue jeans is in centre shot between Maximus and his horse in an opening fight scene. The guy in jeans is right in the middle of the screen and it wasn't picked up because no one was looking for a guy with blue jeans (just under the horse's neck), because everyone was paying attention, as they should, to the narrative of Russell Crowe patting a horse.

We all know this from the simple exercise of proof reading, where time and time again we read a misspelt word in the way that we expect it to be and not the way that it is.

Translate this to any crime. Unusual things, unexpected things, may well be occurring which are simply not perceived. In a negligent drive case causing death, traffic signals, for example, which everyone expects to be operating properly, but which may not have been on a particular occasion, are often unlikely to be perceived by eyewitnesses, such that their later evidence about it is likely to be highly unreliable. Conversely, they may say that they did notice the fault, in which case it is likely to be a reconstruction from now knowing what is expected of them or expected of the system.

Similarly, then ordinary but now important, details might be lost. Imagine you are the victim eyewitness to an attempted immolation at a service station – a horrifying and seemingly memorable event. You were at a service station some years before, you had filled your own car with petrol, paid for it, and as you are about to enter your car again, someone pours petrol upon you from behind. That might be an event that you will remember even years later, for many reasons. Because you immediately told some friends about it, because it was a frightening or unusual event, or because you are reminded of it every time you go to a service station, so as to revive the memory. You may have a very clear memory of the event itself, that is the pouring of the petrol and you running away. You might even remember what you were wearing, particularly if it was your favourite shirt, and you had to throw it away. You might be reminded of the event every time you see a photo of yourself wearing that shirt. But are you likely to remember what car you were driving? Perhaps. You might be assisted in your "recollection" by the fact that you have records to remind you that you had a particular car 10 years ago. You might still have that car. Are you likely to remember who was in the car in front of you? Again, that might depend. Perhaps they came to help you and you became close friends. Perhaps they simply drove away and you recall that they did not help you. Are you likely to remember where that service station was? Again it

[1] "Gladiator Movie Mistakes" YouTube.

depends on things like whether you ever went back there, things like that. Are you likely to remember who served you to pay for the petrol? Or whether they had a name tag on, or what that name tag said? Are you likely to remember how much you paid for the petrol, or whether it was cash or credit card? Again, it depends? We all code our memories for meaning and it depends whether or not the things recalled are meaningful to us. You might simply only remember that you were extremely upset, or the cold feeling of the petrol on your skin, or the fear you felt. You might remember something odd and almost completely unrelated, like a car that was driving past. What if the trial involved credit card fraud and it was important only to remember whether you paid cash or by card? How reliable is your testimony likely to be on that issue?

Attention is connected to awareness, further processing and consciousness. It is not raw processing of stimuli. To return to the *Gladiator* example, if you see this at the cinema, the blue jeans are about 2 metres high. Your retina would process the blue jeans, those projections would go to your visual cortex. Your visual cortex might even be saying "jeans" but certainly the cells in charge of indicating blueness would be firing away. But you're not aware that anything unusual has happened. Attention is the further processing of that stimuli, not just of registration of it and crude processing. Selection or filtering takes place in the brain where only information at that time that is thought to be important is taken in and further processed in terms of meaning. What we later think are important facts may not be processed at all.

The amount of information that can be registered by the brain is in fact unlimited, but the amount that people ordinarily process is highly limited. So perhaps when a witness is asked to recall who was at a nightclub or at a hotel, where someone was stabbed or dealing drugs, the witness simply cannot recognise so as to recall and describe everyone in the room. They will make a selection at a particular point, which entails processing some information and throwing out the rest. They may recall who they know, who was unusual, who they spoke to, who they expected to be there. Because at the time the other information was irrelevant to them and it was simply not processed. Where it is said by a witness to have "remembered" those kinds of details, a level of reconstruction rather than recall is likely to be occurring.

In short, our eyes are open, retinal neurons are firing away, projecting to the thalamus, projecting to the visual cortex, but we are not getting all of the meaning, we are not getting all of the understanding. If we are not paying attention to something, we don't appear to process it at all. And this is true of every day familiar things.

So imagine the unfamiliar things such as crimes: a witness was in a hotel, that he or she had never previously visited, and whilst there was busy talking and perhaps drinking when the alleged crime occurred. How reliable is that witness' evidence going to be of a crime, which occurred in the hotel but in respect of which he or she was paying very little attention?

Some of the earliest research in the area of attention and memory was done by James Cantell (1895). He questioned people about their memory for everyday things, things that they experienced on a daily basis. Things you would expect that people would have no difficulty at all remembering and recalling. He found though that there were things that people see every day and still not have very clear memories for. For example, he asked people, "*in which direction do the apple seeds point?*" Most people had no idea - (they point up).

If witnesses cannot remember things they have seen many many times, then how are they able to remember something that they only experienced once, like a crime? How can lawyers expect witnesses to remember anything in a lot of detail?

Ask yourself, "*what's on the Australian $1 coin?*" It's an item that you probably see every day. Is it a kangaroo? How many of them are there? Which way are they facing? Many of you won't know. Many of you won't care. Because when you hand over that coin, you are only conscious that it is worth $1, because that's all you need to know. Has my suggestion of it being a kangaroo made you more or less certain that in fact it is a kangaroo?

Generally witnesses filter out information that is not important to them. Because it is not something they think at the time they will be later tested on. So what happens when a witness is called to give evidence and is tested on it? In large part, reconstruction takes place.

Witnesses will assert that they remember what they expect to have occurred and what they expect to have seen. They often subconsciously don't want to let anyone down or admit to deficiencies and so they reconstruct. And how they reconstruct, even honestly, might depend on what they think is expected of them.

Allport & Postman (1947) conducted a study in respect of "*constructive memory*" and the effects of social influence, to see if existing belief systems in witnesses affected their ability to accurately recall events. It was conducted in the southern states of America where, and at a time when, racial stereotypes were particularly fixed. Both "white" and "black" Americans participated in the study. All participants were shown a picture of an argument between a well-dressed black man, and a poorly dressed, unshaven white man holding a cut-throat razor. The white participants were asked, as honestly and as accurately as they could, to describe the picture to another white participant who in turn described it to someone else and so on. The method was repeated with the black participants. With the white participants, after only a few retellings, the story had changed so that the black man was the aggressor, holding the blade. Not so with the black participants who more often recalled correctly the observations from the picture. Through the social environment, what witnesses expect can distort what is experienced and processed into memory.

In an inquest I observed a nurse, honestly and sincerely, firmly and convincingly, give evidence that she gave a patient a 4ml/h dose of Fentanyl. All of the other evidence, from other witnesses and including the log of the machine that administered it, showed overwhelmingly that she administered a fatal 200ml/h dose. No doubt, she was supposed to and at the time wanted to administer 4ml/h, she thought she had so administered it, she now wishes she had administered it. But overwhelmingly the evidence was that she did not. Now, question the outcome of that case, had she been the only witness to the event. Add to that a consideration of memory when extraordinary things occur, where people die or are seriously injured, and ask yourself how reliable that memory is likely to be. And how reliable is that memory likely to be some time after the event and where the witness may feel at fault, or where they feel that others are at fault?

Even honest witnesses may later reflect on a situation and say something like, "*I was not speeding*", "*I did not provoke them*" prompted not by a genuine recollection of the particular place or by the event itself, but by the confirmation in his or her own mind, that they would not have done the wrong thing. A client defending himself against a one punch where a person falls backwards, will likely go to a view of the scene and, if there is a pothole on the road, think in his own mind that the victim must have tripped, rather than the force of the blow being the only cause of the fall. Of course, once that assertion takes place, the retelling of the information cements further in his or her own mind that the event must have occurred in this way.

Witnesses, when they give evidence, are accessing their long-term memory. Long-term memory representations store meaning. Overlaid over the storage of the memory is a set of long-term memory structures or schema, which act as a filter. They only interpret what is familiar to them. They encode in their own terms. They can accommodate. They can change their idea of the world in order to encode more efficiently. But, more often than not, they just assimilate information into their pre existing structures and, inevitably, alter that information, and are never truly aware of what is going on.

Estimator Variables

In the acquisition stage, estimator variables are important. These are variables that are present at the time of the alleged crime and cannot be changed. They are things that happened when the incident was taking place. These might be aspects that are related to the event itself (such as lighting) but also could be characteristics of the witness (such as age and sight). They will affect eyewitness memory, and the quality and quantity of what can be recalled.

Some factors are obvious:

- Exposure time: if the incident takes place within seconds, the witness is unlikely to genuinely or accurately remember much about the details of the event.
- Perception: if it happens in the dark or a long way off, the witness is unable to report any more than they can in fact see.
- Distraction: if someone is distracted, they may not be able to pay attention to the detail.
- State: if a witness is stressed, or affected by alcohol or drugs at the time of the incident, this can influence how much can be perceived or taken in, and later recalled.
- Attention: a witness may “see” and recall what they think they are looking for, and not notice critical facts that at the time they had no regard for.
- Expectations: witnesses structure memories partly on what is perceived at the time, but partly on what they expect to see, or think would have occurred, or ought to have occurred.

In short, eyewitnesses to a significant and unexpected event are in an unfamiliar situation. They cannot be expected to perceive and recall all the details. So much

happens that is not taken in and eyewitnesses don't always see what is there. This is often where reconstruction takes hold. It is also the basis upon which cross-examination and indeed pre-hearing questioning can change a witness' sense of reality and thus affect his or her evidence.

False Memories

Most false memories come from source confusion, where a witness will misattribute things that happen to other people (co-workers, relatives, friends, themselves at another time) to themselves. It comes also from assumptions that they make about, not what is true, but about what they believe is likely.

We know this is true, in part due to research done by Roediger and McDermott in 1995 with word lists. For example, they gave participants a list of words that included any number of medical terms, interspersed with other words. A very common medical term "doctor" was not included in the list. However most people when asked, were more likely to say they remembered the word "doctor" with even greater confidence than something that was in fact said, like "medicine", and certainly with greater confidence than non-medical words which were said. And that was with a very short space of time between reading the words and being asked to recall them.

That's because all memories have a schema imposed on them. There are some of us, who like Rainman, remember everything with no filter to work out the meaning and significance of things or to categorise things. In mere mortals though, a trade-off occurs in the brain where unlimited memory is sacrificed for relevance, appropriateness and conceptual thinking. Rainman would never say that "doctor" was said in the list but neither would he understand in what way the words were related. He cannot understand concepts that are non-literal, like metaphor. Although he could probably recite all of Shakespeare's "*The Merchant of Venice*", he would not understand what it meant. Terms such as "pound of flesh" are simply not understood. That is the price of letting everything in without a filter. Humans are in the main designed to record the meaning of things, rather than things as they literally occur. And whilst this is an appropriate trade-off and one that we all accept, when it comes to giving evidence, Rainman would be a far more reliable witness for basic facts, but perhaps not for the more nuanced detail such as veiled threats.

Whether or not witness accounts are misremembered is significant. Humans, and particularly the criminal justice system, place a great deal of value on memory and recall in the form of testimony; on people coming back and telling a court what they saw or experienced. Our personal pride is based on the idea that we have certain key memories that aren't easily manipulated.

Indeed for the memories that we hold dearest, the memories that define us the most, we don't find ourselves even wondering at all whether those are true or not. We just take it for granted and they often cannot be tested. You can't travel back in time and find out what really happened, other than perhaps by photos, videos or journals. For the most part, we have no idea if they are true. And human arrogance relies in this case on them not being able to be tested.

So with no way to test completely things that happened and that are recalled by witnesses, even the criminal law deals with probability that things have occurred, and it does so with or without the use of corroborative evidence. Where there is little or no corroborate evidence, the judicial system puts stock in memory far beyond that which is supported by science.

Flashbulb Memories

In criminal cases, when something significant and sudden has happened, the witness recalls what is known as a "flashbulb memory". They think they know where they were at the time and all of the sensory details of what happened. Where they were standing, what they were doing etc.

Flashbulb memories are often studied because whenever something significant happens, psychologists make measurements of memory then come back later to test the theory. Extensive memory work has been done, for example, on those New Yorkers who experienced the September 11 plane attacks. The results of that work are, that whilst witnesses are certainly more confident about such memories, they are no more accurate with those than with other memories.

The problem with evidence given in criminal cases in particular is that because it relates to stunning, unusual and often horrific events, there is a lot of rehearsal. There is a lot of talk. Research by Martire and Kemp has shown that witnesses to a serious event when there is a co-witness present, most people (86%) reported discussing the

event with the co-witness. Obviously this increases the risk of contaminating one another's memories of the event.

So whilst normally the decay in memory would act in the same way as in all memories, the fact that it is rehearsed, talked about, recalled (even in one's own head) more often, means that the memory is more confidently held. Confidence levels are in fact extremely high. But unfortunately the recall is no more accurate. Memories all decay at the same rate, but here they are likely to be replaced with memories of the retelling, which will cause interference with the true memories. That's why writing things down shortly after they occur and taking photographs are something that we like to do. But even then the memory is not entirely reliable.

Just because a witness assumes that memories are going to be special and distinct, it doesn't mean that they are. Courts and juries have enormous confidence in those memories though. The legal system is based on absurd, unrealistic ideas about the accuracy of testimony, particularly with eye-witness testimony about unusual events. How often have we heard in the cross-examination of a witness on an unusual event, "*That is something you would be likely to remember, if it in fact occurred*"?

Indeed, you can't tell whether any memory is true or false, based on that memory alone. Details don't enhance the likelihood that it's true. Corroborating evidence is needed to test the proposition. Courts can make decisions that, scientifically speaking, unless you have corroborating evidence, there is no way to make an accusation one way or the other. That's as close as you can ever get to a correct answer. So we deal then in probabilities. And the probabilities based on eyewitness accounts alone, are alarmingly low. Of course, where this sits with an onus that requires proof beyond reasonable doubt, where there is no corroboration, is anyone's guess.

Von Liszt (1902) and Stern (1910) conducted "reality experiments" where they staged significant criminal events in front of people. One staged a shooting in front of a lecture theatre of students. The students thought at the time that it was real. The students were then asked to write down everything that they could remember about what had happened. Even the best recollections contained errors of 26% on the significant details, a rate that is indisputably high, notwithstanding the significance of the event and the realism with which it was carried out.

In the 1960s and 1970s further research was done in this area. Robert Buckhout conducted a study that showed that nearly 2000 witnesses could wrongly identify a criminal. He organised for a television station to show footage of a person snatching a purse from someone. It lasted 12 seconds. They showed 6 faces and asked people to call the television station to try to identify the perpetrator from the 6 faces. 2145 people called in. Only 14% correctly identified the individual from the line-up. Chance alone gives you 14.3%. Facial recognition, often the mainstay of a criminal prosecution, is particularly inaccurate.

System Variables and the Misinformation Effect

System variables occur after the event and can be manipulated. They are things like the way in which we might question an accused or an eyewitness about an alleged crime. Questioning can be structured to elicit the most accurate (or indeed should you wish, the most useful) eyewitness recount.

In the early 1900s, psychologists started to give expert evidence in court on witness reliability and memory. Varendonck (1911) was asked to be an expert witness for the defence in a trial where children had seen a man with a child who was later murdered. In pre-trial questioning by police, the children were asked leading questions and after that, they were able to provide details of the appearance of the man and actually the name of the man who they said had been seen with the child. So Varendonck staged an event at a school and found that, when asked leading questions, children would sometimes confabulate their responses and were very suggestible. For example, he asked the children about the colour of their teacher's beard. 84% responded with a colour when in fact the teacher did not have a beard. Children's memories at least are inaccurate and highly suggestible.

Alfred Binet, known for developing intelligence tests, also studied the memory of children, with important ramifications for cross-examination. He showed children items and questioned them about them. He found that if you ask children non-leading questions, they were very accurate and they could say what they saw. But if you ask them leading questions, their accuracy decreased. They started to believe the truth of the suggestions that were put to them. Even when given highly misleading questions, on many occasions they would respond in accordance with the misleading suggestion and say they saw something that clearly they had not been shown. Highly misleading questions resulted in poor accuracy, at least amongst children.

Elizabeth Loftus is an important researcher in the area of memory malleability in adults, studying what is now known as the "misinformation effect". In particular she wanted to know how two people who witnessed the same event had such different versions of what occurred. She discovered that exposure to incorrect information about an event after it has occurred often caused people to incorporate this misinformation into their memory of the event.

So if witnesses are asked leading questions, they can take on any misinformation that they are told into their memory for the event. They become very convinced that things happened, even things that did not happen, which had been inserted by suggestion and leading questions. This has obvious significant implications for criminal defence lawyers who must deal, for example, with a witness account that has been obtained by police, often after intense and prolonged questioning, where the police often draft the statement, and who have no way of knowing what, if any, suggestive questioning has occurred.

Highly leading questions where the witness is providing little, if any, of the information, makes it possible that in many cases, the witness is just going along with what the questioner imagines has happened.

Loftus, in her original studies, showed participants pictures of an accident in which there was a "stop" sign in the scene of a car accident. Some of the participant's were asked leading questions suggesting that the sign was a "give-way" sign and not a "stop" sign. Participants were later shown two pictures; one with a car at a "stop" sign and one with the car at a "give-way" sign, and were asked which one was the accident slide that they had previously seen. She found that when people heard the misleading information through the suggestive questioning, they are more likely to inaccurately report that they had seen a "give-way" sign. They took on the misinformation and believed it to be part of the original scene when it was not.

The questions don't even need to be overtly leading. You can change one simple word with significant repercussions. Loftus showed participants a video of a traffic accident. They were asked different questions – ie how fast were the cars going when they (smashed/collided/hit/made contact) with each other? Small changes in the verb resulted in significant downward changes in the speed estimates given as the words became less severe. Of course, in any case of negligent driving, speed is often a key

and central feature, the evidence about which can be changed in one direction or the other by the use of one simple word. In the Loftus experiment, a week later when asked to describe what they saw at the scene, those in the "smash" condition were twice as likely to recall that there was broken glass involved, where there was none. By careful questioning, it was possible to change memories for even small details of an incident.

Disconcertingly, it is also possible to create false memories for entire events. Again, Loftus (1995) told participants that she had been talking to family members and that they had told four stories about the participants when they were young (in fact the family members provided only three - one story was completely false). They were given the details of all four stories and were told that the stories had been provided by family members. The completely false memory was that the participant had been in a shopping mall, had been lost and was rescued by an elderly person. At first, when asked if they remembered it, the participants were vague or had no memory of it. However, after several suggesting interviews where they were asked about what it might be like to be lost in a shopping mall, about 25% of the people then reported that it had happened to them. Some added very rich and vivid detail to an event that had not occurred. Researchers were able to implant other memories such as being hospitalised over night, having an accident at a family wedding, having nearly drowned and vicious animal attacks. Again, about 25% of the people took on the false memory and said that it did happen. Again, these memories were delivered with vivid detail.

In another study, a family member provided pictures of when the participant was young. Researchers falsified the digital photographs into scenarios that were false, for example being in a hot air balloon, or meeting bugs bunny at Disneyland. About 50% of people were willing to believe that the event had occurred having seen the photograph. They provided a lot of detail, none of which had occurred.

Implications of the misinformation effect

Eyewitness memory is not infallible. Witnesses do make mistakes and memories can be changed, especially when they are asked leading questions. If you are interested in obtaining the truth from your client or witnesses, then it is important that you not ask leading questions on first interview, because their memories for the event can change. Research out of Sydney University shows that once those memories do change, it is almost impossible to access the original memory.

Obviously, if you are interested in implanting memories then it is good to know that it is quite possible to do so, at least for some people, for some events, or for some details of it.

Factors that increase susceptibility to misinformation effect

Whilst there are individual differences and some people are more suggestible than others, children and elderly people are in the main more suggestible and likely to take on misinformation. With children, if you ask them free recall, non-leading questions, they are likely to give short but usually accurate answers. The problem is, because they report so little, they are asked more and more questions to elicit more information, most of which are likely to be leading, thus influencing the information that will be given.

Where there is a credible source of the misinformation, if the witness believes that the person giving the misinformation is a person of high status, is intelligent and credible, or who is in a position otherwise to know, witnesses are much more likely to take on the misinformation. Police officers who report to be in receipt of all of the known facts to witnesses are a notorious example. This is often the basis upon which false confessions are obtained.

Similarly, if the misinformation is repeated, witnesses are more likely to take it on and believe it to be true.

Witnesses are more likely to take on misinformation about facts that are peripheral rather than those that are a central aspect of the event. If someone says something about a central part of an event that is completely and obviously wrong to the witness, then they are unlikely to take on any part of the information, correct or not, because the source of that information becomes a non-credible source.

The Effect of the Passage of Time on Memory

Obviously, the passage of time is going to affect the accuracy of an eyewitness account. Even the law has to some extent caught up with this scientific fact. Events, such as historical child abuse allegations, that took place years ago are more likely to be challenged as being inaccurate. We know this to be true when we try to recall day-

to-day events from childhood. However, the length of time before memory begins to decay is quite short. The rate of memory decay is not linear but it does decay quickly. A time-span of even few hours between the observation and the first viewing of a photo board or a line-up, or the first statement to police, or to a solicitor or friend, may be significantly unreliable.

An examination of those few hours, before the witness has cemented or changed his or her memory by retelling, are fertile areas for cross examination. A memory can be changed or influenced by the events that a witness experiences, even in this short period of time. New information, even if implicit, provided by others begins to instantly affect the memory. Internal conflicts, assimilations, and mental compromises are all internal processes that can influence the memory that takes shape.

Witness Stress

Whether or not a witness has a good memory for an event depends on the amount of stress being experienced at the time of the event. Almost all witnesses to a crime, and particularly victims, whose testimony often forms the cornerstone of any criminal case, will be witnesses who experienced some level of stress as the event unfolds and in the immediate aftermath. Witnesses experiencing high levels of stress or anxiety, at the time of an observation, are less reliable eyewitnesses. It will affect both the witness' perception of the original event as well as any later recall. Again this is a fertile area for investigation, examination and cross-examination.

Work by Yerkes and Dodson (named by them as Yerkes-Dodson Law), suggests that the level of memory, when measured against arousal or stress, maps in an inverted "U"-shaped curve. That is, when arousal and stress is really low (say at the point of waking or drifting into sleep) memory is not good, nor is it good when there is a very high level of arousal or stress. Somewhere in between is the optimum level of arousal for memory recall.

Therefore low-stress daily activities are often not fully taken in because those kinds of details aren't really attended to. Similarly in highly charged scenes, such as a robbery or a stabbing, where there is a high level of arousal and stress, the details of that are often not likely to be taken in completely or accurately.

Furthermore, the Easterbrook Hypothesis (named after J.A. Easterbrook) suggests that people remember slightly different details when they are more stressed. According to this theory, there is a tunnelling of vision when a witness is under a lot of stress, so highly aroused witnesses tend to have really good memory for the central details of the incident and really poor memory for the peripheral background details, details that, in a later prosecution, might be crucial. You can imagine that this would be particularly so if some details of the crime are horrific, where that might be the only focus of real attention.

Given this narrowing of attention, these "flashbulb" memories, which seem like they are really resistant to decay and that they are really strong pictures of what happened at the time and which are so fiercely held by any witness, are not only likely to be unreliable, but are likely to be quite incomplete.

In fact, you might think that a reliable witness might be one who could tell you every little detail about the incident. You might think that the person has a particularly good memory. However, a witness who can describe the trivial detail of an incident may well be reconstructing or deliberately lying.

"Weapons" Focus

Research has shown that the presence of a weapon during a crime can be responsible for increasing the stress felt by the victim, thus affecting observation and recall. It has also been shown to provide a distraction that increases unreliability of the memory formed. The same may be said of other stress inducing items, such as horrific injuries either to the witness themselves or to another. Any eyewitness is likely to focus on the engaging and horrific parts of the scene and, similarly it is likely that in an incident that only lasts seconds, there may be no useful memory of the incident. However, witnesses will almost always recount their "memories" as opposed to "reconstructions" with an assuredness and genuineness that belies its reliability. This, obviously enough, gives scope for cross-examination where the eyewitness is asked to concede their shortcomings or risk their credibility.

Exposure Duration

Research has also shown, and it is perhaps self-evident, that anything that detracts from the amount of time that a witness has to view an event will affect the reliability of their account. Incidents that occur in a matter of seconds are going to be less reliably recalled than incidents that occur over hours. Often the matters that are the subject of criminal prosecutions occur almost instantaneously. It is likely that witnesses will materially overestimate the amount of time that elapsed during the incident.

Further, the more distractions and other activity occurring around the incident, the less accurate the observation will be. Again this provides an opportunity for effective cross-examination. It is often fruitful to take advantage of the fact that a witness at the time will have no reason to know that a noteworthy event is about to take place, and to observe assiduously.

Distance Effect

It is also perhaps self-evident that eyewitnesses become less accurate the farther away they are from the incident. However, it is often the case that even truthful witnesses will believe that they have recalled detail for events that they cannot possibly have perceived.

In people with normal vision, the ability to make accurate identifications of a face begins to diminish at about 7.5 metres. The ability to make an accurate identification is practically gone by 45 metres. It's not hard to imagine how difficult it might be to observe at those distances, for example, the intricacies of an assault in a crowded hotel. It might be useful to know for example, how far away a CCTV camera is.

The Effects of Eyewitness evidence on Judges

Notwithstanding, some Judges and juries are swayed by eyewitness evidence. They are also often swayed by witnesses that are very sure about their evidence. They are likely to believe confident witnesses and reject those who are less sure. The problem

is that accuracy and confidence are only loosely correlated to one another[2]. There are witnesses who are very confident and not very accurate and visa versa.

There also tends to be confidence inflation over time, where the witness giving an account for the first time is at first unsure, then as soon as their friends, or their lawyer, or a police officer, agree that this is what happened, and leading up until trial where they are asked to recount, sometimes many times, their so-called "recollections", the witness becomes inevitably more confident, and thus more believable, where they are objectively no more reliable in accounting the event itself. And of course, in preparation for trial, they are encouraged to act in a way that is believeable, to be confident and to prepare themselves, and perhaps to rehearse.

Legal Authorities Regarding Memory Reliability

In *Craine v Australian Deposit & Mortgage Bank Ltd* [1912] HCA 60; (1912) 15 CLR 389 (2 October 1912) Griffith C.J. observed:

> We all know that, when it is necessary to fix the date of an event which took place many years ago, little or no reliance can be placed on memory, unless it is aided by some contemporaneous or nearly contemporaneous event, the date of which can be fixed by independent testimony, and which is itself connected with the event the date of which is in controversy, so that the memory recalling one event naturally recalls the other also. In weighing evidence of such a kind, the greatest reliance is placed upon testimony of matters as to which the witnesses are least likely to be mistaken.
>
> …It is important, as I said, to remember that greater weight should be given to the testimony of witnesses who depose to matters as to which they are not likely to be mistaken than to that of those who are likely to be mistaken.

In referring to whether he ought accept evidence, his Honour referred to the ability to verify evidence with reference to contemporaneous notes and observed where those notes were likely to be accurate, there is little room for doubt.

His Honour also referred to the words of Lord Robson in *Khoo Sit Hoh v. Lim Thean Tong* (1912) A.C., 323, at p. 325, in which he made clear that the reliability of evidence is challenged where it "*turns out on more careful analysis to be substantially inconsistent with itself, or with indisputable fact*."

[2] Although there is some interesting working being done in this area by Kristy Martire and Richard Kemp from the School of Psychology, University of New South Wales to suggest the correlation might be stronger than first thought.

Barton J. disagreed in the result, however, as to accuracy of witness testimony he stated:

> "The case was, in respect of all the witnesses on the question of possession, a test of memory, and, in respect, at any rate, of the testimony upon which the case mainly depends, there is no reason to question the desire of the witnesses to tell the truth. The question is which of them best stood the memory test, and, particularly, which of them best stood that test on the materials before the learned Chief Justice on the hearing.
>
> … *Coghlan v. Cumberland* (1893) 1 Ch., 704... When, as often happens, much turns on the relative credibility of witnesses who have been examined and cross-examined before the Judge, the Court is sensible of the great advantage he has had in seeing and hearing them. It is often very difficult to estimate correctly the relative credibility of witnesses from written depositions; and when the question arises which witness is to be believed rather than another, and that question turns on manner and demeanour, the Court of Appeal always is, and must be, guided by the impression made on the Judge who saw the witnesses. But there may obviously be other circumstances, quite apart from manner and demeanour, which may show whether a statement is credible or not; and these circumstances may warrant the Court in differing from the Judge, even on a question of fact turning on the credibility of witnesses whom the Court has not seen."
>
> Then I said for myself:—"An instance of the last mentioned state of affairs would be where, apart from any question of manner or demeanour, there were undoubted documents turning the scale in favour of one witness, who might seem not to be all that could be desired, as against another witness considerably more plausible." *Isaacs* J., after quoting from *Riekmann v. Thierry*, and *Coghlan v. Cumberland*, said:—"The mere words used by the witnesses when they appear in cold type may have a very different meaning and effect from that which they have when spoken in the witness-box. A look, a gesture, a tone or emphasis, a hesitation or an undue or unusual alacrity in giving evidence, will often lead a Judge to find a signification in words actually used by a witness that cannot be attributed to them as they appear in the mere reproduction in type. And therefore some of the material, and it may be, according to the nature of the particular case, some of the most important material, unrecorded material but yet most valuable in helping the Judge very materially in coming to his decision……. Now, it may be that in some cases the effect of what I call the unrecorded material is very small, indeed insignificant, and utterly outweighed by other circumstances. It may be, on the other hand, that it guides, and necessarily guides, the tribunal to the proper conclusion…." That embodies the principle upon which the Court acted in *Dearman v. Dearman* [1908] HCA 84; 7 C.L.R., 549.
>
> …. This was clearly a matter of accuracy of memory; it was a case of credibility in the sense, not of the truthful intent, but of the reliability, of the witnesses. It may be assumed that all the witnesses who testified in this part of the case were actuated by the best motives, and gave their evidence to the best of their ability. In that sense all were credible. But whether a witness was credible in the sense of being reliable was a question which the learned Chief Justice had to solve in each instance. He heard the witnesses examined and cross-examined. Evidently they were put to every test to which witnesses are commonly put, both to see whether they were telling the truth, and also to see whether they were

> accurate in their recollections. His Honour compared the witnesses together and contrasted their evidence, remembering that the human memory is fallible. He gave due weight to every circumstance which was used by the witnesses in support of their memory, and also gave attention to the way in which they gave their evidence—and in questions of memory as well as of credibility that is of considerable moment.

Isaacs J., agreeing with the Chief Justice, held as follows:

> In *The Glannibanta* 1 P.D., 283, at p. 287., to which I referred in *Dearman v. Dearman* [1908] HCA 84; 7 C.L.R., 549., *Baggallay* J.A., in delivering the judgment of the Court, after referring to *The Julia* 14 Moo. P.C.C., 210. and *The Alice* L.R. [1868] EngR 26; 2 P.C., 245, said:—"Now we feel, as strongly as did the Lords of the Privy Council in the cases just referred to, the great weight that is due to the decision of a Judge of first instance whenever, in a conflict of testimony, the demeanour and manner of the witnesses who have been seen and heard by him are, as they were in the cases referred to, material elements in the consideration of the truthfulness of their statements. But the parties to the cause are nevertheless entitled, as well on question of fact as on questions of law, to demand the decision of the Court of Appeal, and that Court cannot excuse itself from the task of weighing conflicting evidence and drawing its own inferences and conclusions, though it should always bear in mind that it has neither seen nor heard the witnesses, and should make due allowance in this respect." …The point relied on by the learned Judge for preferring their recollection is stated to be that their reasons for remembering what they swear to were well established, and seem natural, and in cross-examination they readily recalled other distant or contemporary occurrences as well as those material. Whether the reasons and contemporary occurrences so given have the decisive force assigned to them, is an inference the value of which is as much within the power of this Court to estimate as at the trial. Then [there was evidence of matters which] is independent of any demeanour or other unrecorded event."

Lord Pearce explained these issues, and emphasised the 'utmost importance' of contemporary documents, in *Onassis and Calogeropoulos v Vergottis* [1968] 2 Lloyd's Rep 403 at 431:

> "Credibility covers the following problems. First, is the witness a truthful or untruthful person? Secondly, is he, though a truthful person, telling something less than the truth on this issue, or, though an untruthful person, telling the truth on this issue? Thirdly, though he is a truthful person telling the truth as he sees it, did he register the intentions of the conversation correctly and, if so, has his memory correctly retained them? Also, has his recollection been subsequently altered by unconscious bias or wishful thinking or by overmuch discussion of it with others? Witnesses, especially those who are emotional, who think that they are morally in the right, tend very easily and unconsciously to conjure up a legal right that did not exist. It is a truism, often used in accident cases, that with every day that passes the memory becomes fainter and the imagination becomes more active. For that reason a witness, however honest, rarely persuades a Judge that his present recollection is preferable to that which was taken down in writing immediately after the accident occurred. Therefore, contemporary documents are always of the utmost importance."

The difficulties in extracting truth from memory, after time has taken it's toll, were exposed by Street CJ. in the *Report of the Royal Commission of Inquiry into Certain Committal Proceedings Against K E Humphreys* (July 1983). His Honour said (at 9-10):

> "In the intervening five or six years, rumours waxed and waned. In some cases suspicion underwent subtle change to belief, which itself progressed to reconstruction, which in turn escalated to recollection. No presently stated recollection could be safely assumed not to have progressed upwards and not to be the product of one of these earlier stages. The sheer frailty of human memory of necessity required a most anxious and critical appraisal of the evidence of the witnesses, no matter how credit-worthy they might be. It became apparent that in the years since August 1977 the recollections even of those with undoubted first-hand knowledge have in some instances faded, in some instances fermented, and in some instances expanded. Moreover, in many cases the realisation of the significance - indeed, the enormity - of what had occurred has tended to transmute into a more or less cynical acceptance of what had, or was believed or rumoured to have, taken place."

In *Watson v Foxman* (1995) 49 NSWLR 315 at 318-319, McClelland CJ in Eq said, in the context of allegations of misleading and deceptive conduct:

> " In many cases (but not all) the question whether spoken words were misleading may depend upon what, if examined at the time, may have been seen to be relatively subtle nuances flowing from the use of one word, phrase or grammatical construction rather than another, or the presence or absence of some qualifying word or phrase, or condition. Furthermore, human memory of what was said in a conversation is fallible for a variety of reasons, and ordinarily the degree of fallibility increases with the passage of time, particularly where disputes or litigation intervene, and the processes of memory are overlaid, often subconsciously, by perceptions or self-interest as well as conscious consideration of what should have been said or could have been said. All too often what is actually remembered is little more than an impression from which plausible details are then, again often subconsciously, constructed. All this is a matter of ordinary human experience."

In *Albrighton v Royal Prince Alfred Hospital And Others* [1980] 2 NSWLR 542 at 544 the Court of Appeal recorded its awareness of the fallibility of human recall as opposed to contemporaneous business records. It observed:

> "... proper records made by persons who have no interest other than to record as accurately as possible matters relating to the business with which they are concerned; records which are used in the everyday carrying on of the business on the basis that they are most probably accurate, and which are likely, when litigation supervenes, to be a far more reliable source of truth than memory."

Is a jury assisted by expert evidence or directions?

In an article “Expert testimony on memory: valid or not?”, Steven K. Erickson, JD, LLM, PhD, published by the American Psychological Association Journal, Judicial Notebook (Yale University January 2007, Vol 38, No. 1), had some interesting things to say on the topic, where a court rejected expert testimony on faulty memory in favour of jury judgment.

It reviewed the case in which Lewis "Scooter" Libby Jr. was indicted on charges related to the alleged disclosure of covert CIA agent Valerie Plame. Libby engaged several psychologists to give evidence designed to demonstrate that jurors often underestimate the shortcomings in memory-based testimony.

The psychological evidence was disallowed on four grounds: such testimony would not assist the jury; the testimony would usurp the role of the jury in deciding issue of credibility; the prejudicial effect of the testimony outweighed its probative value; and the validity of the underlying studies were in question. The problem being seen in the fact that most memory research is conducted in universities, outside the court setting, and without the aid of court processes, such as vigorous cross-examination, closing addresses and jury directions.

In the Libby case, the court ultimately held that allowing expert testimony constituted an undue delay and "waste of time." The article also observed the overarching desire of the courts to preserve the structure of legal proceedings, where juries, not experts, are favoured in deciding credibility issues. Seemingly at least in that case, despite all that science has demonstrated about memory and cognition, some of which we have discussed, expert opinion about it is likely to be rejected because, according to Erickson, “they inject science into a normative process that jealously guards traditional notions of juror discernment and judgment.”

In any event, more recent research out of the University of New South Wales (Martire and Kemp) suggests that jurors may not be swayed by expert evidence pointing out the defects or limitations of memory or by judge’s directions to that effect so as to arrive at the right answer. However there is a suggestion that it is quite possible to increase levels of scepticism of juries about eyewitness accounts, for both accurate and inaccurate eyewitness identification.

In short, it appears to be the tool of the defender, but does not necessarily assist juries to accept accurate eyewitness testimony and reject inaccurate eyewitness testimony.

See publications: *Can experts help jurors to evaluate eyewitnesses evidence? A review of expert effects* (2009), *The Impact of Eyewitness Expert Evidence and Judicial Instruction on Juror Ability to Evaluate Eyewitness Testimony* (2008), *and Knowledge of Eyewitness Identification Issues: Survey of Public Defenders in New South Wales* (2008).

Deception Versus Unreliability

Introduction

In *Mackenzie v R* [1996] HCA 35; (1996) 190 CLR 348; (1996) 141 ALR 70; (1996) 71 ALJR 91 (3 December 1996), Gaudron, Gummow and Kirby JJ remarked as follows:

> But honest mistake, inadvertence, carelessness or misunderstanding leading to evidence shown to be false will not constitute perjury for which a criminal intention must always be proved[3]. In *R v Dickson*[4] it was rightly said:
>
> > [I]t is essential to distinguish between honesty and accuracy and not assume the latter because of belief in the former.

Deception is the successful or unsuccessful, but deliberate attempt to create in another a belief, which the communicator believes to be untrue. The definition comes from the perspective of the deceiver. It has to be intentional. False memories are not deception.

There are said to be three ways to attempt to catch a liar:

1. Examine their physiological responses.
2. Observe their non-verbal behaviour or demeanour.
3. Analyse the content of what they say.

Physiological Responses

Given our inability to administer a lie detector test and monitor physiological changes, such as changes in blood pressure, heart rate, respiration and sweating, whilst a witnesses is giving evidence or in any pre-hearing procedure, and the fact that lie detector tests are based on the false premise that telling a lie is more stressful than telling the truth, I will deal only with the latter two ways.

[3] cf *State of Illinois v Toner* (1977) 371 NE 2d 270 at 274 referring to *Bronston v United States* [1973] USSC 6; (1973) 409 US 352; 70 *Corpus Juris Secundum*, SS 17.
[4] [1983] 1 VR 227 at 231; cf *R v Sainsbury* [1993] 1 Qd R 305 at 309.

Non-Verbal Behaviour or Demeanour

Often, much is made in litigation of the demeanour of a witness in the witness box and it is well known that successfully asking an appeal court to overturn a finding where the evidence of the respondent was accepted by the trial judge, partly on findings of credit based on demeanour, is notoriously difficult.

However, in recent years, judges have become more aware of scientific research that has cast doubt on the ability of judges (or anyone else) to tell truth from falsehood accurately on the basis of such appearances. Considerations such as these have encouraged judges, both at trial and on appeal, to limit their reliance on the appearances of witnesses and to reason to their conclusions, as far as possible, on the basis of contemporary materials, objectively established facts and the apparent logic of events. This does not eliminate the established principles about witness credibility; but it tends to reduce the occasions where those principles are seen as critical.

A review of some of the more prominent cases over time reveals the following, not always consistent, approach:

In *Dearman v Dearman* [1908] HCA 84; 7 C.L.R., 549, Griffith CJ said:

> [w]here there has been a conflict of evidence, the Court of Appeal cannot reverse the judgment of a judge at first instance who has had the advantage of hearing the witnesses unless the appellate court "sees that the decision is *manifestly wrong*" (emphasis added).

Isaacs J said:

> where viva voce evidence is taken there is a large amount of material upon which the primary Judge acts that is altogether outside the reach of the appellate tribunal. The mere words used by the witnesses when they appear in cold type may have a very different meaning and effect from that which they have when spoken in the witness box. A look, a gesture, a tone or emphasis, a hesitation or an undue or unusual alacrity in giving evidence, will often lead a Judge to find a signification in words actually used by a witness that cannot be attributed to them as they appear in the mere reproduction in type. And therefore some of the material, and it may be, according to the nature of the particular case, some of the most important material, unrecorded material but yet most valuable in helping the Judge very materially in coming to his decision, is utterly beyond the reach of the Court of Appeal. …. Now it may be that in some cases the effect of what I call the unrecorded material is very small, indeed insignificant, and utterly outweighed by other circumstances. It may be, on the other hand, that it guides, and necessarily guides, the tribunal to the proper conclusion.

In *Coles v Adeney* [1914] HCA 19; (1914) 17 CLR 562 (27 March 1914), where, as with many criminal trials, the case depended entirely upon oral evidence Isaacs J. observed:

> So much depends, not only upon the way in which those answers, the most favourable to themselves, were given to counsel, but also upon the amount of questioning that was necessary in order to extract those answers, that the Judge who heard the witnesses examined and saw and watched them giving their evidence might easily come to the conclusion that the original statement was the more reliable. In those circumstances, although it is our duty as a Court of appeal so far as we can to form our own judgment, yet in a case like the present where, notwithstanding that there was no jury, still the witnesses' demeanour and manner of giving evidence are not before us, it would be impossible, in my view, to reverse the learned Judge's finding.

In *London Bank of Australia v. Kendall*, [1920] HCA 53; (1920) 28 CLR 401 Isaacs and Rich JJ said:

> So far as the conclusions depend on materials such as demeanour, which the learned primary Judge alone could have access to, we cannot say he was wrong.

In 1924, Atkin LJ observed in *Société d'Avances Commerciales (Société Anonyme Egyptienne) v Merchants' Marine Insurance Co* (*The "Palitana"*):

> "... I think that an ounce of intrinsic merit or demerit in the evidence, that is to say, the value of the comparison of evidence with known facts, is worth pounds of demeanour."

Mr A M Gleeson QC, as he then was, wrote in *Judging the Judges* (1979) 53 ALJ 338 at 344:

> Reasons for judgment which are replete with pointed references to the great advantage which the trial judge has had in making the personal acquaintance of the witnesses seem nowadays to be treated by appellate courts with a healthy measure of scepticism. What might be called the Pinocchio theory, according to which dishonesty on the part of a witness manifests itself in a fashion that does not appear on the record but is readily discernible by anyone physically present, seems to be losing popularity.

Similarly, in *Rama Furniture v QBE Insurance* (unreported, NSWCA, 20 June 1986), the trial judge confessed that he was "*deeply suspicious of my ability to determine the truthfulness of a witness from his demeanour in the witness box*".

However, in *Abalos v Australian Postal Commission*. [1990] HCA 47; (1990) 171 CLR 167 (15 November 1990), it was observed:

> [W]hen a trial judge resolves a conflict of evidence between witnesses, the subtle influence of demeanour on his or her determination cannot be overlooked."

In *Dawson v Westpac Banking Corporation*, [1991] HCA 52; (1991) 104 ALR 295; (1991) 66 ALJR 94 (12 December 1991) Mason CJ said:

> Such a vague statement could not sustain the Court of Appeal's reversal of Bryson J's finding, especially when account is taken of his Honour's extremely adverse view of the credibility of Mr Smith as a witness. In this respect the Court of Appeal failed to respect the established principle that an appellate court should not depart from a finding of fact made by a tribunal of fact which is based on the demeanour or credibility of witnesses unless the finding of fact is inconsistent with admitted or proved facts or is 'glaringly improbable.'

In *Devries v Australian National Railways Commission* [1993] HCA 78; (1993) 177 CLR 472; (1993) 112 ALR 641 (6 May 1993), the Court intervened to restore a finding based on the trial judge's acceptance of the evidence. In doing so, the Court, simply applied the principles that final appellate courts in England and Australia had applied for nearly a century. That is to say, they upheld the orthodox and long held views about demeanour, unaffected by any scientific advances in the meantime going to the reliability of demeanour as an indicator of truth of reliability. The *ratio decidendi* of *Devries* was based on statements contained in *Hontestroom* in the House of Lords in 1926 and in *Brunskill* in the High Court Court in 1985.

However, Deane and Dawson JJ observed

> … allowance must be made for the advantage which the trial judge has enjoyed in seeing and hearing the witnesses give their evidence. The "value and importance" of that advantage "will vary according to the class of case, and, ... (the circumstances of) the individual case" ….
>
> ... the advantage may, depending on the circumstances, be of little significance or even irrelevant. ….. Judges are increasingly aware of their own limitations and of the fact that, in a courtroom, the habitual liar may be confident and plausible, and the conscientious truthful witness may be hesitant and uncertain. … as Kirby ACJ pointed out in Galea v. Galea ((2) (1990) 19 NSWLR 263, at p 266.), in many cases today, judges at first instance expressly "disclaim the resolution of factual disputes by reference to witness demeanour ". However, this does not deny that in many cases a trial judge's observation of the demeanour of witnesses as they give their evidence legitimately plays a significant and even

decisive part in assessing credibility and in making factual findings.

…When, as often happens, much turns on the relative credibility of witnesses who have been examined and cross-examined before the judge, the Court is sensible of *the great advantage he has had in seeing and hearing them*. It is often very difficult to estimate correctly the relative credibility of witnesses from written depositions; and when the question arises which witness is to be believed rather than another, and that question turns on manner and demeanour, the Court of Appeal always is, and must be, guided by the impression made on the judge who saw the witnesses. But there may obviously be other circumstances, quite apart from manner and demeanour, which may show whether a statement is credible or not; and these circumstances may warrant the Court in differing from the judge, even on a question of fact turning on the credibility of witnesses whom the Court has not seen."

Clearly, the case was one in which the trial judge's observation of the witnesses was of critical importance to his finding that Mr Devries' evidence about the first incident should be accepted. In particular, the explanation which the trial judge accepted of the inconsistent statements which Mr Devries had made in the earlier documents depended, to no small extent, on his observation of Mr Devries' demeanour and linguistic ability.

In *State Rail Authority of New South Wales v Earthline Constructions Pty Ltd (in liq))* [1999] 73 ALJR 306; 160 ALR 588 the Court held that where undisputed and documentary evidence was “so convincing” that no reliance on the demeanour of witnesses could rebut it.

Demeanour based judgments are hardly likely to inspire confidence, particularly where often the particular demeanour in question is not described and if it had been so described, I suspect would not on its face be a compelling description of reliability or the lack of it.

A test of "glaring improbability", "incontrovertible error" or "palpable misuse of an advantage" pays, I am inclined to think, altogether too much deference to a trial judge's view of the facts and advantages, both actual and supposed. This is not to deny, however, that deference should be paid to first instance findings of credit. It is simply to prefer that a test of wrongness on any appeal to be guided by, rather than bound by, findings on credit, or on the basis of demeanour.

Judges have become more aware of the scientific research that has cast doubt on the ability of judges (or anyone else) to tell the truth from falsehood accurately on the basis of such appearances [See material cited by Samuels JA in *Trawl Industries of Australia Pty Ltd v Effem Foods Pty Ltd* (1992) 27 NSWLR 326 at 348 and noted in *SRA* (1999)

73 ALJR 306 at 329; 160 ALR 588 at 617-618].

Mason P, in *Unconscious Judicial Prejudice* (2001) 75 ALJ 676, discussed cognitive illusions revealed by psychological studies. His Honour pointed out that these illusions can lead to systematic error or bias when making factual findings (at 684 - 685). See also *SRA (NSW) v Earthline Constructions Pty Limited* per Kirby J at 329.

The statements in *Fox v Percy* (2003) 214 CLR 118 by Gleeson CJ, Gummow and Kirby JJ at 128 -129, [30] - [31] were thought at the time to be somewhat of a watershed. Their honours observed:

> It is true, as McHugh J has pointed out, that for a very long time judges in appellate courts have given as a reason for appellate deference to the decision of a trial judge, the assessment of the appearance of witnesses as they give their testimony that is possible at trial and normally impossible in an appellate court. However, it is equally true that, for almost as long, other judges have cautioned against the dangers of too readily drawing conclusions about truthfulness and reliability solely or mainly from the appearance of witnesses [eg *Trawl Industries of Australia Pty Ltd v Effem Foods Pty Ltd* (1992) 27 NSWLR 326 at 348, per Samuels JA.] Thus, in 1924 Atkin LJ observed in *Société d'Advances Commerciales (Société Anonyme Egyptienne) v Merchants' Marine Insurance Co (The "Palitana")* [(1924) 20 Ll L Rep 140 at 152].

In *Waterways Authority v Fitzgibbon* [2005] HCA 57; (2005) 221 ALR 402; (2005) 79 ALJR 1816 (5 October 2005) the Court of Appeal analysed the witness' evidence much more closely than the trial judge had. It accepted the trial judge's "finding, based on demeanour," that he was truthful. But it noted that that did not necessarily make him reliable in his understanding and recollection. The Court of Appeal demonstrated four elements of unreliability in his testimony. It made that assessment against a background of evidence not turning on demeanour. In that case, there was little opportunity for the trial judge to base his reasoning on his observations of witness demeanour. The Court held that it turned on inferences from primary evidence which, the defendants by their conduct of the case accepted, might be unreliable but was given sincerely. That is to say, criticism of the evidence turned on factors going to reliability rather than credibility, so demeanour had little role to play. None of these steps involved the Court of Appeal reversing the demeanour-based findings of the trial judge.

In *NAIS v Minister for Immigration and Multicultural and Indigenous Affairs* [2005] HCA 77; 80 ALJR 367; 223 ALR 171 (14 December 2005) it was observed:

> Even appellate judges, like myself, who are cautious about the significance of demeanour in the assessment of truth-telling, willingly accord to primary decision-makers significant advantages derived from their function in considering all of the evidence, perceiving its parts in relation to the whole and reflecting upon it all, as it is adduced. Such advantages, together with those which demeanour is conventionally held to accord to primary decision-makers, are lost, or significantly reduced, by protracted delay in providing a reasoned decision.

In *CSR Ltd v Della Maddalena* [2006] HCA 1; (2006) 224 ALR 1; (2006) 80 ALJR 458 (2 February 2006) it was also observed that the limitations introduced into a rehearing included those occasioned by the resolution of any conflicts at trial about witness credibility based on factors such as the demeanour or impression of witnesses. It acknowledged the important change rendered by the decision in *Fox v Percy,* involving a shift from the more extreme judicial statements commanding deference to findings said to be based on credibility assessments. The Court also acknowledged the varying attitudes over time and resolved not to restore the pre-*Fox v Percy* approach. It noted the disapproval of expressed reliance on the demeanour and appearance of witnesses where that is unnecessary or inappropriate together with the scientific unreliability of many such assessments and the general desirability of founding judicial conclusions (as far as possible) on rationality and logic. It accepted that there were cases in which the advantages enjoyed by trial judges over appellate courts are exaggerated.

Kirby J in *CSR Limited v Della Maddalena* at 470, repeated the reference made in *Fox v Percy* at 129, to scientific research bearing on the ability of judges (or anyone else) to tell truth from falsehood. His Honour had earlier, in *SRA (NSW) v Earthline Constructions Pty Limited (In Liq)* (1999) 73 ALJR 306 at 329 referred to scientific studies of this kind.

However, in this particular case, the court held that "the subtle influence of demeanour" cannot be overlooked. It held that, although not mentioned in the judgment, demeanour must have been of some significance and that the trial Judge formed a certain impression of the respondent judged in relation to the video recordings and his reaction to them. The way in which the respondent visibly responded to questions, any delays, evasions or reluctance in answering them, and the extent of his fluency in English, were held to be all matters of “especial relevance” bearing directly upon the weight to be given to the evidence. As such the intermediate court of appeal was held to be wrong in reversing the finding of credibility. This appears, notwithstanding

statements to the contrary, to be a step back from the *Fox v. Percy* position.

McClennan J. observed in "*Who is telling the truth? Psychology, common sense and the law* (2006)" 80 ALJ 655:

> "reliance has for centuries been placed on the demeanour of a witness when giving their evidence. By careful observation of a witness an experienced person is assumed to be able to assess whether they are lying. The confrontation involved in many a cross-examination is accepted and the assumption is made that the demeanour of the person under challenge will assist in revealing whether they are a liar or are recounting the truth. However, the psychologists tell us that internal contradictions and the apparently unsatisfactory nature of their evidence may be because of the stress of the witness box where they are called to account by a hostile advocate whose obligation is to their client's instructions which may be, and by definition in many cases must be, at odds with the real truth."

So, whilst there is a loose correlation between the two, it is accepted in a way far above that suggested by the science, that the confidence of a witness is a conclusive measure of the witness's honesty. Often the reverse is true. As observed, again by McClellan J., those who consider themselves most powerful, regardless of the accuracy of their testimony, more readily employ confident or powerful patterns of speech. Relevantly they are police officers. Conversely, those whose answers involve silences or indirect answers (such as those who feel powerless, such as those with intellectual deficiencies or who are uneducated, relevantly most accused persons) might wrongly be understood as exhibiting evasion, confusion or guilt, and that far from there being a strong correlation between confidence and accuracy "*over 90% of the variance in eyewitness confidence is determined by factors other than eyewitness accuracy*".[5]

McClellan J. also reported on a well-known influence on the apparent confidence of witnesses, the "Othello Effect". That is, "*like Shakespeare's tragic hero, lie detectors who disbelieve truthful witnesses may make them appear anxious and fearful – and hence appear as if they are being deceptive*" [6]. So the way in which a witness is cross-examined, rather than the content and style of the answers, may affect whether or not a witness appears to be telling the truth.

Cues that are often said to point to deception, such as a lack of straight-forward

[5] Wells GL , Ferguson TJ and Lindsay RCL , "The Tractability of Eyewitness Confidence and its Implications for Triers of Fact" (1981) 66 *Journal of Applied Psychology* 688 at 689.
[6] Frank MG , "Assessing Deception: Implications for the Courtroom" (1996) 2 TJR 315 n 8 at 321.

answering, have been found to be unreliable. McClellan J. points out "*people who are being deceptive know which behaviours result in judgments of deception*"[7] and hence make a conscious effort not to give off those signals. Research has shown that in the act of deception, supposed deception cues such as fidgeting and postural shifts actually *decrease* rather than increase:[8]. Relevantly McClellan J. observed that it is important to consider "*whether it is not the honest but weak or timid witness, rather than the rogue, who most often goes down under the fire of a cross-examination*".[9]

However, some progress in the law on this front has been made. A trial judge is required to explain his or her rejection of otherwise uncontradicted evidence, particularly contemporaneous evidence, which contradicts a seemingly honest witness. It is not enough to simply say that the seemingly honest witness is accepted above all else: see *Fox v. Percy* (2003) 197 ALR 201 and *State Rail Authority of New South Wales v Earthline Constructions Pty Limited (In Liquidation)* [1999] 73 ALJR 306; 160 ALR 588.

A trial judge ought not misuse his or her advantage of assessing a witness in the witness box. It is necessary to critically analyse the content of the witness' evidence. Judges ought not acted on demeanour and accept evidence which is inconsistent with facts established by the evidence of others and the contemporaneous documents and which was otherwise glaringly improbable: see also *Devries v Australian National Railways Commission* (1993) 177 CLR 472 at 479 per Brennan, Gaudron and McHugh JJ.

If the evidence, other than that given by the credible witness, can only be fitted into the pattern if a different view of the credibility of the respondent is taken, then it ought not be accepted: see Jacobs J in *Agbaba v Witter* (1977) 51 ALJR 503 at 508; 14 ALR 187 at 196. The conflict in the evidence needs to be resolved by regard being had to all of the evidence, in particular that evidence which was not challenged: *see Fox v. Percy* (2003) 197 ALR 201.

In *Goodrich Aerospace Pty Ltd v Arsic* [2006] NSWCA 187, the Court (per Ipp J., with whom Mason P and Tobias JA agreed) after referring to the often quoted passage from Atkin LJ stated "Against this background it is no wonder that judges and jurists of the

[7]Blumenthal JA , "A Wipe of the Hands, A Lick of the Lips: The Validity of Demeanor Evidence in Assessing Witness Credibility" (1993) 72 *Nebraska Law Review* 1157 at 1194-1195
[8] Blumenthal JA , 1194-1195
[9] Wellborn OG , "Demeanor" (1991) 76 *Cornell Law Review* 1075 at 1080.

highest eminence have expressed deep scepticism about the reliability of demeanour findings." His Honour referred to the comments by "three very experienced trial judges", namely, Lord Devlin, Browne LJ and MacKenna J (whose words Lord Devlin later adopted as his own). He stated:

> I doubt my own ability, and sometimes that of other judges, to discern from a witness's demeanour, or the tone of his voice, whether he is telling the truth. He speaks hesitantly. Is it the mark of a cautious man, whose statements are for that reason to be respected, or is he taking time to fabricate? Is the emphatic witness putting on an act to deceive me, or is he speaking from the fullness of his heart, knowing that he is right? Is he likely to be more truthful if he looks me straight in the face than if he casts his eyes on the ground, perhaps from shyness or a natural timidity? For my part I rely on these considerations as little as I can help.

Ipp J. finally observed in *Goodrich*:

> These problems and doubts about demeanour findings explain why trial judges are expected to weigh their impressions as to demeanour carefully against the probabilities and to examine whether the disputed evidence is consistent with the incontrovertible facts, facts that are not in dispute and other relevant evidence in the case. Of course, demeanour may trump the probabilities, but it should be apparent from the judge's reasons that the probabilities and consistency with other relevant evidence have properly been taken into account.

The limitations were also considered by Beazley Ipp Basten JJA in *Strinic v Singh* [2009] NSWCA 15, in the context of an overly flamboyant witness.

Curiously however, the pre-Fox v Percy approach has crept it's way back. In a slightly different context, in *Minister for Immigration and Border Protection v WZARH* [2015] HCA 40 (4 November 2015), the Court referred in the context of an administrative decision -maker, that impressions formed by a decision-maker from the demeanour of an interviewee may be an important aspect of the information available to the decision-maker and that this has long been recognised. It referred to the opportunity for a decision-maker to form an impression based on personal observation as to whether an applicant is genuinely confused or seeking deliberately to mislead, and that this may be especially important to a fair assessment of a claim to refugee status, even where English is not the applicant's first language and he or she is obliged to seek to communicate through an interpreter. The court accepted that this opportunity to observe demeanour is desirable where questions arise as to a witness's credibility and that an oral hearing will often assist in the resolution of credibility issues by allowing the decision-maker to interact directly with the witness by asking the witness questions, considering his or her answers, and having regard to the witness's demeanour .

Is Demeanour Reliable?

So, given the long history of reliance on it in the trial context, and seeming use when it suits fact finders and appellate courts to do so, it is important to continue to ask whether or not demeanour is a reliable indicator of honesty. It is particularly important in the criminal jury trial, where 12 people will attempt to assess demeanour no matter what directions are given. It is ordinary human experience to do so. With the almost infinite varieties and conditions of witnesses, it is important to ask whether one can rely in any way on tone of voice, apparent seriousness or frivolity, hesitation, smiles, nervous laughter, confident or nervous starts, movements or sifting in one seat or swallowing prior to responding, throat clearing, crying, hand shaking, trembling, facial twitches, glances, blushing, or surprise, of witnesses in attempting to evaluate the credibility of a witness.

Take for example, witnesses who react to stressful questions by laughing or stuttering. It's equally likely to be a sign of an insincere witness as it is an honest witness whose demeanour is upset by stress. Further, whilst signs like this could show a lack of appreciation of the solemnity of the occasion, or even a lack of respect for the court, it might not be any indicator of a lack of candour.

So too with an inability to make eye contact. It is often taken as a sign of insincerity, particularly in western culture, with little regard for any scientific foundation. This conclusion has little regard for cultural differences, shyness or introversion. It often has little to do with being untruthful or evasive.

Similarly a blank expression or wooden demeanour might be utterly unrevealing, particularly where so little is known about the history, habit, usual demeanour or personality of any witness who comes before the jury. It is difficult to imagine what can be taken from a stilted delivery of evidence, given as they are in the formal and often terrifying court environment and particularly where the accounts are given in response to often hostile and certainly confronting styles of questioning. As we know, the confident, articulate, and expressive witness may be equally so in the telling of a lie.

Consider too, the other player in the dynamic, the questioning counsel or police officer. Might a witness who appears to be truthful and reliable in responding to one questioner, appear evasive when asked questions by another. Is it simply a response to the manner of the questioner, or what role they play? Or does it indicate something more troubling in their evidence? It is difficult to know. As lawyers, we so rarely find ourselves in the witness box or at a police station being questioned. People are rarely

questioned this way in their daily lives. We are ill placed to know how a person will respond and what is means so far as veracity and reliability is concerned.

In my view little can be made of nervousness both before police officers when interviewed, or in the witness box. Such nervousness might result in a witness who barely speaks, or who fills the silence with endless chatter, who trembles, or is pale. Should the chatterer be disbelieved because they fail to answer questions directly? How does one tell on first meeting the difference between a witness who is embellishing by adding unsolicited detail and one who is simply nervous. How does one tell the difference between an open, reliable and honest witness from a responsive, relaxed, self-assured, and skilful liar?

The naturally hesitant witness may appear simply careful or they may appear evasive. The same response can go either way. Even if one comes to the view that nervousness belies guilt, how is one to make the distinction between the nervous witness and the apparently calm witness who hesitates in answering? Is this a reliable way to evaluate credibility? How long is too long to answer? Does spontaneity in answering belie credibility? Or might it be the result of a genuine attempt to search one's memory for the truth? Conversely what, if anything is to be made of the forceful and direct answer? Does it indicate a truthful and genuine response or an attempt to persuade?

Many witnesses who come into contact with the criminal law, truthful or not, are not articulate. They often speak in half sentences, not for fear of giving themselves away, but perhaps for fear of using the wrong word or expression. So little time, and in fact almost no time, is devoted, either in interviews by police, taking statements or eliciting evidence in the witness box, to a full account in detail of a witness' education and skill as a communicator, that it is usually impossible to come to any conclusion about it.

Indeed, is there a fundamental flaw in attempting to ascertain the thoughts of individuals based on their countenance at all in the court room setting or a police station interview, where the environment is so contrived and constructed. Of course, in some situations demeanour might be quite telling, for example the genuine surprise at seeing an old friend for the first time or genuine lack of recognition. But these kinds of instinctive or spontaneous physical reactions are rarely exhibited in police interviews or courtrooms, where evidence is elicited in such a controlled way.

Another question arises as to how well has the witness been prepared to give evidence. What does one make of a witnesses who may have been (and you wont

know) instructed to pause before answering any questions, whether simple or more difficult, so as to digest its content, to allow time for an objection, to give time to reflect before answering, such that when the inevitable difficult question comes, the pause will be a usual response, and thereby no one in the room, other than the witness, will know which is the difficult question; in each case, their response will be the same. They are instructed in response to each question to listen, pause and reflect, then answer. The key however, is to pause just long enough to appear thoughtful and accurate, but no so long so as to appear rehearsed, evasive or robotic.

What affect does the general appearance of a person have on the usefulness of demeanour? Can you take anything from slumped shoulders, dress selection, tattoos or a haircut to guide you on honesty or reliability? Doubtfully. However, all humans act on these kinds of stereotypes. It's unavoidable to some degree.

How do you reconcile the cases which refer to the "obvious advantage" a trial judge has, when seeing witnesses give their evidence with the fact that the evaluation of a person's demeanour in the witness box may be highly subjective and not necessarily logical or reliable.

So often with demeanour, the determination that a witness is not credible is not capable even of precise identification or enunciation. And of course, with a jury one will never know. But, where does this sit with a duty to give reasons in a judge alone trial? It is important to question whether one can put any credence on something that can insufficiently be identified or described, and even if it can be so described, where it has shown not to be a reliable indicator. Having said that, we all accept I think that there is something to be made overall, of the perhaps intangible effect of a witness's demeanour when making in the assessment of credibility. I suspect it is unavoidable.

But it must be remembered, perhaps because it is unavoidable, that demeanour assessments are arbitrary and the best actor might win. Science indicates that the appearance of telling the truth seems to me to be the least reliable of all the factors that go into witness reliability and credibility in any event. Much more compelling and able to be identified and explained to juries are, opportunities for knowledge, powers of observation, judgment and memory (which is faulty), and ability to describe clearly what has been witnessed (which is fraught with effects from communication skills). Manner is much more unreliable an indicator, in my view, than content and the surrounding facts, where the account is tested for its consistency with the probabilities

and known facts. It is far better, in my view, to concentrate fully on the underpinnings of the account than the way in which the account is delivered.

Unlike demeanour where you will never know whether or not you are right, this also has the advantage of being able to be assessed as to whether or not the assumptions are correct. That's not to suggest that complete consistency denotes truth. Often, differences and indeed discrepancies indicative truth and a lack of rehearsal. Although it might also indicate a lack of reliability. A changing recollection and one perhaps affected by the confronting circumstances of giving it, although truthful, it may none the less be unreliable.

Demeanour remains, legally at least, a stated appropriate way to assess credibility. However, in my view it is neither simple nor scientific to place too much emphasis on such intangible and subjective signs. Whilst demeanour still plays a role in modern fact-finding, it is important to note the accepted limitations it plays because, as McClellan J. observed, the trier of fact is making two separate assumptions, each of which is questionable. The first is that a witness will exhibit telltale signs, which will indicate whether or not they are telling the truth. The second assumption is that the trier of fact knows how to correctly interpret any signals that a witness does send, and consequently, "*there is some evidence that the observation of demeanour diminishes rather than enhances the accuracy of credibility judgments*" (emphasis added)[10]. Whilst it might sometimes be useful or relevant, a witness's demeanour should only be relied upon "*as a last resort and with the utmost caution*"[11]. It is no substitute for proof or lack of it.

[10] Wellborn, at 1075.
[11] Davies GL , "Common Pitfalls in Judicial Decision-making" (2002) 11 JJA 130 at 134.