

## **BODY MAPPING EVIDENCE**

### **QUESTIONS OF ADMISSION AND RELIANCE**

In a recent case of robbery, the Crown case against the accused rested primarily on two forms of evidence; the first was the accused's DNA was on a scarf said to be worn as a disguise by one of the offenders, and the other was an attempt by the Crown to adduce into evidence the opinion of Professor Maciej Henneberg, Professor of Anatomy, whose opinion was said to support the Crown's assertion that the offender was one of the men seen on CCTV footage.

By way of background, the Crown's case was that two men entered the Burwood Westfield early on a Saturday morning. The centre had just opened and two men are seen on CCTV footage walking through sliding doors, down escalators, across a concourse, and into a service corridor, that service corridor being adjacent to the Travelex money changing store in the complex.

Both in video footage and stills (which are attached) it was clear to me that the two offenders had covered themselves from head to foot in loose-fitting clothing including hats and possibly gloves, and could only be distinguished by the colour of their jackets. One was fluorescent orange, the other fluorescent green. It was agreed by the Crown, and Professor Henneberg, that no facial features were apparent on any of the footage available.

Professor Henneberg created a document dated 12 November 2008, which is attached, and in it he noted that he had received various still images from both the scene of the crime and further images of the accused.

The Professor essentially concluded this:

"Assessment

6. Assessment was conducted first on all images from the four CDs listed in item 5(a)-(d). On all these images I have conducted observations of anatomical characteristics of the person of interest (PI) in order to form anatomical description of this person. Following construction of anatomical description (7. below), I have studied the image of Mr Lomas. Details of procedure applied are described on the last page of the certificate. While formulating descriptions of the PI, I took into account the quality of digital images and camera lens distortion.

#### Person of Interest

7. PI is an adult male of light skin colour and strong, athletic, muscular body build (mesomorphic). He has broad shoulders, fairly broad hips, his legs are somewhat bent outwards. He has high hair line on his forehead, but not many details of the face can be seen. He seems to have a prominent nose with a straight back. On disc 2 camera 7 17:41:18.343 the ..... is presented in a straight lateral view which may be used for comparison with the actual profile of Mr Lomas. PI is right-handed in the use of the mobile telephone.

#### Opinion

8. Based wholly or substantially on the above knowledge, I am of the opinion that: there is high similarity between the person of interest and Mr Lomas. My opinion is strengthened by the fact that I could not discern any dissimilarities between the PI and Mr Lomas.”

As explained in the body of the document, Professor Henneberg then gave an explanation of the method he used which is also attached.

A further report was obtained by the Crown from Professor Henneberg (stamped 10 August 2010) in which the Professor noted receipt of further digital images and went on to say this:

“On the additional surveillance images, I have conducted observations of anatomical characteristics of body and face of an adult male wearing a T-shirt and short trousers. In conducting my observations I took into account image distortions; curvilinear distortion (fish-eye effect), perspective (angular distortion), stretching of images (rectilinear distortion) and pixilation and colour changes.”

The Professor then went on to state the following:

“Following my observations I compared them to POI previously described on 12 November 2008. Details of my routine method are attached as the last page of the certificate. In this case, it was impossible to avoid knowledge of Mr Lomas while observing the POI. Thus, theoretically, a phenomenal displacement (reading features of a known person into images of unknown POI) could occur. Its occurrence, however seems unlikely because I have formulated my description of the POI in 2008. Since then I have conducted some 30 anatomical comparisons in unrelated cases and could not have good memory of anatomical details in this particular case.”

A final report was obtained by the Crown dated 20 October 2009, and essentially in this report Professor Henneberg was attempting to link the offender to the accused by the stance of what he called the person of interest and the accused. The full quote is:

“The stance of the person of interest and of Mr Lomas is wide and the way the PI walks indicates that his legs are somewhat bent outwards the same as those of Mr Lomas. My opinion is strengthened by the fact that, as before, studying this additional set of images I cannot discern any similarities between the PI and Mr Lomas.”

In all of the reports, Professor Henneberg had an explanatory memoranda attached. Relevantly, the following is stated:

“I conduct individual anatomical examinations of material presented to me by the police or the prosecution and write a report directly on a computer. Hence I do not use any additional material.

I use a method of anatomical examination. It consists of inspection of images in order to form an opinion on the individual characteristics of the body and the face of a specific person. Since individuals differ in a number of details and since each set of photographs or digital images allows observation of a different number and quality of details, statistical analysis is not a practical approach. Statistical analyses provide reliable results in cases where anthropometric measurements can be taken precisely, or where standard photographs in prescribed body positions are taken at same angles. Surveillance materials and the standard police photographs are not of the quality allowing such analyses.

It can be stated that the anatomical analysis of images is similar to recognition of persons on such images by lay observers, such as, for example, eyewitnesses. The only difference is that observations are

conducted by an experienced anatomist who has a good understanding of shapes and proportions of various details of the human body.

In my anatomical identification I make comparisons of individuals. I do not draw any conclusions as to their national/ethnic/geographic origin because it would amount to unwarranted racism. Human biological characteristics vary more among individuals than they vary on average among populations. Therefore, identification of a person's country of origin from his/her anatomical features is always uncertain. Thus it would be futile in a case of individual identification to make any comparisons against statistical data on any particular "racial" defined population."

For the opinion of Professor Henneberg to be admissible, it must be relevant pursuant to the definition under s.55 of the *Evidence Act* and then, if it satisfies that criteria, it has to satisfy the criteria pursuant to s.79 of the *Evidence Act*. For the purposes of this paper, I will not go into detail about the other exclusions that can be found within s.137 or elsewhere in the *Evidence Act*.

## **RELEVANCE**

The first question that arose in relation to Professor Henneberg's opinion in this matter was what was he trying to do? In essence, Professor Henneberg stated that certain still and sequential digital images entitled him to form an opinion on the identity of one of the two men seen in that footage. Yet his curriculum vitae (CV) did not go further than stating he had studied anatomy since 1976 when he received a PhD in Biological Anthropology and further studies in anthropology and biological sciences. He stated that he had practised "forensic identification" since 1976 and had published various documents for peer review. However, at no point in the certificates he sought to put before the Court pursuant to s.177 of the *Evidence Act*, nor in evidence in chief or cross-examination, did he profess to have a specialised knowledge based on his training, study or experience that entitled him to interpret digital imagery. This is despite his acknowledgment as quoted above that the images he has seen and called "surveillance materials" limited his opportunity to make any analysis.

The Professor also noted that digital images could be distorted by curvilinear distortion, perspective, stretching of images and pixilation with colour changes.

Neither in reports nor in evidence did Professor Henneberg explain what study, training or knowledge he had to discount or even evaluate how such distortions may render an image as different from the actual event it was said to describe. For example, Professor Henneberg agreed in cross-examination that the fish eye effect could distort the shape of a person's head such as to make that head shape impossible to measure from the image.

As stated above, the Professor was looking solely at body shape in coming to his conclusions and therefore had no accurate measurements of any facial or bone structures from which he could evaluate the person of interest.

To be relevant, the opinion had to "if it were accepted, could rationally affect (directly or indirectly) the assessment of the probability of the existence of a fact in issue in the proceedings" (s.55). Clearly, the identity of one of the nominated offenders said to be the accused was the central fact in issue. But the question arose as to whether what Professor Henneberg had to say about that fact was relevant. In *Mundarra Smith v The Queen* (2001) 206 CLR 650 the High Court said this:

"In other cases, the evidence of identification would be relevant because it goes to an issue about the presence or absence of some identifying feature other than one apparent from observing the accused on trial and the photograph which is said to depict the accused. Thus, if it is suggested that the appearance of the accused, at trial, differs in some significant way from the accused's appearance at the time of the offence, evidence from someone who knew how the accused looked at the time of the offence, that the picture depicted of the accused as he or she appeared at *that* time, would not be irrelevant. Or if it is suggested that there is some distinctive feature revealed by the photographs (as, for example, a manner of walking) which would not be apparent to the jury in court, evidence both of that fact and the witness's conclusion of identity would not be irrelevant. Similarly, if, as was the case in *R v Tipene*, there is an issue whether photographs of different incidents depict the same person, evidence given about the identity of the person depicted may not be irrelevant." (At 15)

The High Court further said in terms of identifying who was the offender that this ought be borne in mind:

“Because a witness’s assertion of identity was found on material no different from the material available to the jury from same observation, the witness’s assertion that he recognised the appellant is not evidence that could rationally affect the assessment by the jury of the question we have identified. The fact that someone else has reached a conclusion about the identity of the accused and the person in the picture does not provide any logical basis for affecting the jury’s assessment of the probability of the existence of that fact when the conclusion is based only on material that is not different in any substantial way from what is available to the jury. The process of reasoning from one fact (the depiction of the man in the security photographs) taken with another fact (the observed appearance of the accused) to the conclusion (that one is the depiction of the other) is neither assisted, nor hindered, by knowing that some other person has, or has not, arrived at that conclusion. Indeed, if the assessment of probability is affected by that knowledge, it is not by any process of reasoning, but by the decision-maker permitting substitution of the view of another, for the decision-maker’s own conclusion.” (At 11)

The High Court’s decision on this point was relevant in consideration of whether or not Professor Henneberg ought be admitted in that he had material that was available to the jury who had the further advantage of seeing the accused in the witness box for the length of the trial. They could therefore compare and contrast at all points during the trial the identity of the accused with the man depicted in the digital footage to see if they were one and the same.

The High Court’s decision also though raises whether or not the professed expertise of Professor Henneberg was such as to entitle the Court to admit it because it was suggested that Professor Henneberg could see in the images things that were not readily apparent to a lay person such as a juror. This then involved a critique and analysis of Professor Henneberg’s expertise and how he came to his conclusions. This is more properly a challenge made under s.79.

## SECTION 79

For the opinion to be admissible pursuant to s.79, it must of course qualify as “specialised knowledge”. As was the case in *R v Tang* [2006] NSWCCA 167, a live issue during the trial was whether or not Professor Henneberg could establish there was a specialised field known as body mapping. Of course, Professor Henneberg’s qualifications as a forensic anatomist are not challenged. However, he was not using those skills, it was submitted, in analysing photographs.

What Professor Henneberg attempted to do was establish that his forensic anatomy training qualified him to look at digital photographs and then analyse the body shape contained within those photographs. Two questions arose from this assertion: the first was what was the methodology and scientific basis for the assertion? And secondly, what were the materials upon which the Professor made his determination?

As stated above, Professor Henneberg used phrases such as “I took into account the quality of digital images and camera lens distortion”. He also said he “conducted observations of anatomical characteristics of the person of interest”. This is despite his explanatory memoranda attached to the back of the reports that undermined the quality of the various images police often supplied to him. However, a more fundamental question arose in relation to what Professor Henneberg was attempting to do. That is simply what scientific basis he had established for his opinion.

For Professor Henneberg to state that the digital images he viewed entitled him, given his training, study or experience, to conclude a person had a relevant body shape can be attacked by, of course, the questions of the quality of the photographs. But even if the Professor can say a person has a certain body shape (i.e.

mesomorphic), this still begs the question as to how rare such a body shape is such as to provide some relevant evidence on identification of the Accused as the person in the images. For example, the Professor in evidence stated that the person of interest had a: “light skin colour and strong, athletic, muscular body build (mesomorphic). He has broad shoulders, fairly broad hips, his legs are somewhat bent outwards. He has high hairline on his forehead, but not many details of the face can be seen. He seems to have a prominent nose with a straight back.”

That various body parts, particularly the face, could be seen on the photographs was wrong, as will be stated below, but even if this evidence is presented in a report, Professor Henneberg has no scientific basis that he can rely upon to say the propensity of an individual to have all of those descriptive attributes marks that person as “rare” or “unusual”. Therefore, by observing a man to have those various characteristics could mean that he is one of 10,000 men in Sydney at the relevant time who also share those characteristics.

Because Professor Henneberg cannot comment on the propensity of an individual to have all those various characteristics, and therefore heighten the probability that it was the Accused person that was in the digital images, the evidence is not relevant as it does not rationally affect the fact in issue being who was the person captured in the CCTV images?

If the evidence cannot speak to the frequency of repetition of the body shape in the general population, and no other distinguishing characteristics are visible to the expert as opposed to visible to the jury, then it may be submitted that the case of *Mundarra Smith* would see the opinion of Professor Henneberg to be inadmissible due to a lack of relevance.

The further critique of Professor Henneberg’s opinion was on the basis that it was not readily apparent how he used a methodology to come to his conclusions. By using phrases such as “I took into account the quality of digital images and camera lens distortion” does not explain how he took that into account. Nor, given he has no expertise in photography or processing such images, could it be said that he has the ability to “take into account” such matters.



A further issue arose as to how the Professor had created the initial composite image upon which he based his opinion. It became apparent from analysis that the Professor had been provided with digital images. This was by the police when they first sought his opinion. One of those digital images was the Accused in custody. The Professor was then provided with further images including the Accused at a local hotel (he being under surveillance for some period of time prior to arrest) and he was also provided with the stills from the actual robbery. Investigations from my instructing solicitor by way of issuing subpoena and seeking further background material on which the opinion was based led to a series of emails being produced. One of those emails was as follows:

“Detective Sergeant Smith

All CCTV images you sent are helpful for identification, even the grainy ones. I would need better descriptions of clothing of the suspect on those images where he is not wearing the fluorescent yellow top. I think I know who is the suspect on those [sic] other images, but it is better to make sure...”

The Professor was then provided with further information by police identifying my client as the one in the green jacket.

Clearly, if an expert needs to be pointed in the direction of the person the police asserted was the Accused, it undermines, (in my view completely), any alleged professional opinion. If the expert’s skills were such as to entitle him to make an analysis of body shape, even with those images, it would not require any further information to identify the person committing the robbery and any similarities he had with the accused.

A further issue was the issue of displacement. The Professor accepted that displacement is essentially where a reading of the features of a known person into images of an unknown person could occur. In cross-examination, it was suggested to Professor Henneberg that one of the first images he opened was of my client in custody. He agreed with that. It was suggested that that image was therefore identified by him on a conscious or subconscious level, that therefore that conscious

or subconscious imprint could have been affecting his capacity to make any further assessment of any other image so that the issue of displacement would have arisen. He rejected this. He did so on the basis that he had been doing it for 37 years and therefore that was a sufficient basis for him to conclude that displacement did not occur.

The question that arises there is clearly how does the Court review the methodology by which Professor Henneberg has excluded the issue of displacement? One cannot break open the mind of a man to see what rational or irrational processes are operating when he makes his opinion.

Finally, once the analysis of Professor Henneberg had been completed, he made his analysis of the “person of interest” by mistakenly looking at images of my client while he was inside a hotel. As noted from the CCTV images of the robbery, no face, hairline or profile was available. Nonetheless, in the initial analysis made by Professor Henneberg and quoted above, he identifies the person of interest by the skin colour, high hairline and prominent nose. It became clear from analysis that what he was analysing as a person of interest was my client rather than the persons committing the robbery. When this was pointed out to the Professor, he nonetheless rejected the suggestion that he had erroneously created the synthetic composite from which his opinion was derived. His trenchant opposition to any suggestion that he had erred was a telling factor in the ultimate withdrawal, in my view, by the Crown from relying on this evidence.

An opinion in the form expressed by Professor Henneberg’s can therefore be said to be inadmissible on a number of bases. The first is that there does not appear to be any specialised knowledge that has been peer reviewed by the scientific community about the processes and methodology of analysis as engaged in by Professor Henneberg. That he has an honest belief that his system is accurate does not convert that into a scientific opinion based upon specialised training, skill or knowledge.

The methodology he applies is personal to him. He has no ability to provide an explanation for the methodology that he utilises to see whether that methodology

has, in fact, been accurately followed. The Court's determination ought be to exclude such evidence where it cannot see the basis of the reasoning engaged in and to see whether that has been accurately followed and is logical and consistent.

The material on which the opinion is formed is usually very poor quality CCTV and, it would appear, where the expert seeks directions and guidance from those who instruct him as to the identity of the person of interest, this raises serious doubts about the professed "expertise".

A close analysis of the reasoning in this matter showed that there was a significant error in the professed methodology such that the conclusion ultimately reached was to compare my client to my client. This had nothing to do with the fact in issue in the trial which always remained who was the offender seen on the CCTV images.

The multiplicity of difficulties inherent in digital photographs of poor quality attempting to propensity the actual scene as it occurred is also a specialised skill, training or experience that the Professor does not have, and by simply saying that he takes it into account is not sufficient to the usual standards of admission for documents in criminal cases.

The challenges to such evidence ought be considered in accordance with opinions from other experts such as Dr Richard Kemp, psychologist, who has very good insights into what constitutes a proper scientific opinion, and what factors may influence an expert in the creation of that opinion. I leave that for others to give their opinion.

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