D N A - A HUMAN RIGHTS PROFILE

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INTRODUCTION

I am a lawyer and not a scientist. I used to think that a single locus probe was an investigation into the lifestyle of adults without partners, until I discovered DNA profiling. As a lawyer, I have a healthy mistrust of science in the forensic process. On the whole I subscribe to the sentiments of the old proverb: "Much science, much sorrow."

Let me give you an example. In a recent double murder case - the bodies of two women were found in a car in North London. The prosecution wanted to prove that the women had been killed in the flat which they shared with a man, the defendant. The link had to be made with blood found on the car, which was considered to be post-mortem blood, with blood in the flat. Over a period of months extensive blood testing, DNA testing and PCR testing took place, but no link was ever established between the two sets of blood. Just three days before the trial the government scientist made a final witness statement, saying, for the first time, that the blood was the same, post-mortem blood, because it looked the same.

As scientists, you will no doubt say, she was just using that celebrated scientific instrument, the naked eye. As a lawyer, I merely questioned why she had not made a note of this important finding nine months before. Not exactly "Much science, much sorrow"; more a case of "Little science, late in the day".

But I am here to talk about a specific aspect of DNA. I am not going to talk about prolonging life with "ageing genes", although it reminds me of the 45 year old lawyer who died in a car crash. When he arrived at the gates of heaven, he complained bitterly to St Peter: "What did I do to deserve death at 45?" And St Peter replied: "45? Actually, according to your billing hours - you're 96." Nor am I here to talk about identifying sexual orientation through genes, a subject which led to one creative newspaper headline in London: "Abortion hope after 'gay genes' findings".

Things are moving so fast in this field, it seems to me as a layman, that this speech will probably be given in five years time by a pig; by that, I don't mean a police officer - that really would be an advance, and one beyond the scope of science, I suspect.

But the serious and important subject which I wish to address today is the human rights implications of DNA profiling in the forensic context. Let me raise some of the problems and, somewhat more tentatively, suggest some of the answers. I shall deal with it in three parts: PART I A new scientific technique without controls. PART II The problem of genetic privacy. And PART III The protection of human rights.

PART I A NEW TECHNIQUE WITHOUT CONTROLS.

Science has been used in the forensic process to variable effect. While fingerprint comparison has stood the test of time well, tests for explosives, for example, have fared less well.

It was the dubious scientific evidence in the IRA bombing cases which propped up the false confessions and led to the worst wrongful convictions in modern British history. To discover that swab tests giving a positive reading for explosives could have been caused by everyday items such as playing cards was bad enough. But a series of errors, omissions and conspiracies by forensic scientists gradually emerged from these cases.

In one case, that of Judith Ward, who was convicted of an IRA coach bombing in which 12 died, the appeal court held that government scientists "took the law into their own hands" and "succumbed to the dangers of partisanship". And these are scientists who inevitably have high credibility in the eyes of judges and juries.

One old idea, which never quite made it to court (in the UK, at least), was the polygraph. The British government did start using it, only a few years ago, for vetting security officers. But phase 2 of the project was postponed indefinitely when 40% of MI5, the secret service, failed the test. Thomas Hobbes was no doubt right when he wrote in the seventeenth century that science was "The skill of proceeding upon general and infallible rules". Some rules have proved to be more fallible than others.

As you will know, the use of DNA profiles in court has not been without controversy. It is well-known that "there are lies, damned

lies and statistics". That is particularly relevant here. Statistical confusion has led to the exclusion of evidence in two cases at the Old Bailey. David Balding, the British statistician whose work has been cited in court, has suggested that if police scientists corrected their statistical methodology to take his criticisms into account, the odds of someone else having the same genetic match would be reduced typically from 10 million to one, to one million to one. The layman might say, with some justification, where the hell has the 9 million gone? In a celebrated New York murder case, the probabilities of a chance match were put at 1 in 500 with one statistical method and 1 in 739 billion with another. Such variations do not exactly inspire confidence.

Matching profiles has caused problems too. The approach to matching has been far from uniform: whether to use the naked eye or fragment sizing or any other technique. Laboratory error, as in the Castro case, can never be ruled out, particularly with degraded material. Profiling procedures are not standard, are not covered by published guidelines, and are therefore likely to be open to criticism in court. All of which weakens the value of the evidence presented.

No doubt as scientists, you have the answers to all these difficulties. No doubt as scientists, you blame the lawyers. As Victor McKusick, professor of medical genetics at Baltimore, put it: "It's the lawyers who keep the pot boiling".

But as a lawyer involved with the liberty of the subject, I am not so sure. Science rarely stands still. Even now (so I am told) the view, which so far has been widely propagated, that DNA profiles are produced solely from non-coding DNA, is being questioned. I look forward to the discovery that DNA has the structure of a triple helix.

This all goes to show - what exactly? Not that DNA profiling should be thrown out, but that a technique such as DNA profiling should not be introduced into the criminal process without adequate safeguards and controls. I was amazed when it was first "discovered" and used in the UK. It just appeared, suddenly, almost without warning, in the courts. It was tried and tested, of course, but quietly and in private. The experts all worked for the prosecution and the courts accepted the evidence without knowing what it was all about. For all the judges knew, Alec Jeffreys was a member of the Magic Circle.

PART II THE PROBLEM OF GENETIC PRIVACY.

There is, of course, no such thing as absolute genetic privacy. If I examine my own genes, I am also looking at information about my parents and my children. I might want information on an inherited disease such as Huntington's chorea. So might an insurance company in trying to assess my life expectancy. And the state, of course, wants to compile an ever-increasing file of information on all of us, not least in the detection of crime. Senior police officers in the UK would like to have all adult males on file.

One of the most interesting debates at the moment is raised by the general question - How far should the state be allowed to go in collecting and keeping genetic information for the purposes of detecting crime?

I have to say that I am bound to approach this issue from the cynical end of the spectrum. As a hard-bitten lawyer, having led a working life of crime (at second-hand, of course), I am only too conscious that where there is life, there is corruption - sometime, somewhere. (Italy has been particularly active recently in proving this point.)

Regrettably, police officers as a class cannot be excluded from this maxim. From time to time they fabricate evidence; they plant evidence; they give perjured evidence; they produce false confessions. I once met a man who used to be in the Flying Squad in London (a special police unit dealing with violent crime). He was described as the "script writer"; he sat in a room on the top floor of the police station, with a bottle of whisky, writing out the confessions. He retired from the police force and became a lawyer. Not all police officers, of course, are corrupt. But it only takes one or two to bring about a miscarriage of justice.

It is therefore necessary to produce a system which does its best to protect the innocent from that element of corruption. It is very difficult to make use of a fingerprint corruptly; planting a print is very difficult. Playing about with blood samples is less difficult. It is easy enough for exhibits to become contaminated or deliberately mislabelled, long before the scientists get their hands on them.

Experience shows that scientists may make mistakes, that they may fall into the trap of partisanship, and at worst they may conceal and deceive. All of this is possible; we are all human beings after

all. But if it is possible, we must protect against it as best we can.

So, what about the specific process of DNA profiling?

Since 1984 the police, in the UK, have been able to take body samples from a person suspected of serious crime in the following circumstances. An intimate sample (blood, semen, urine, saliva or pubic hair) may be taken, but only with consent. A non-intimate sample (non-pubic hair, nail clippings, footprint) may be taken without consent.

If convicted the sample may be kept, and presumably, although this is not stated, may be used for other purposes (as with a fingerprint). If the suspect is cleared of the offence, the sample must be destroyed (as with a fingerprint). In other words the starting principle is that a sample is taken for a specific purpose. Once that purpose is fulfilled, the suspect's privacy (of personal body information) is protected, by the destruction of the sample. That is the principle, at least. If convicted, the principle is amended and the right to privacy is forfeited. That seems to me to be a reasonable, if not wholly consistent, way of working.

But there is a problem here which has caused much confusion. The British Act of Parliament (the Police and Criminal Evidence Act 1984, sections 61-65) is silent on whether the information taken from the sample should also be destroyed. This grey area has been exploited by the police who decided, secretly, to keep thousands of files containing DNA profiles on both convicted and suspected (but acquitted) sex offenders. Roy Williams, a 25 year old convicted burglar, gave a blood sample to the police in 1982, before the advent of DNA profiling. Six years later he was asked to give a further sample, this time for DNA analysis. His blood type had been found to match a bloodstain in a murder case. Although he was cleared from the murder inquiry the police refused to erase his DNA profile which had been stored on computer. He was told that it was police policy to keep such details.

This was almost certainly done in breach of the Data Protection Act which states that information gathered for one purpose cannot be used for another. At the very least it was contrary to the spirit of the Act which controlled samples. Indeed the police in London took legal advice and were advised as such. And, much to the horror of senior detectives, some 4,000 DNA files were then deleted from computer records, or so we are told.

Meanwhile, the UK governmnent, worried about serious miscarriages of justice, set up a Royal Commission, to investigate, among other things, the use of science in the forensic process. This summer the Commission recommended an extension to existing police powers. The police should have wider powers to take samples, and everyone convicted of a serious offence should have DNA taken for analysis, even though it had no bearing on the crime committed. The records would be kept for all time and for any purpose. Only last week the government announced that these proposals would soon become law and that about 500,000 samples a year would be taken (we have plenty of serious crime), with the aim of creating a national database of convicted criminals' DNA profiles - described by the Data Protection Registrar, the official custodian of public data storage, as "a step too far".

Herein lies the conflict. On the one hand there is a strong public feeling that the steady rise in crime should be halted, at almost any cost. On the other hand, there is a growing concern that the methods adopted for this purpose involve serious infringements of civil liberties. Obviously a balance must be struck, between the desire to catch criminals and the rights of the individual not to be falsely accused, let alone falsely convicted. But where to strike the balance?

That takes me to the third and final part of my talk.

PART III THE PROTECTION OF HUMAN RIGHTS.

3.1 It seems to me, first and foremost, that there must be rigorous control over the whole process. It is extraordinary that the use of DNA profiling in the forensic process has developed piecemeal, sometimes illegally, without any overview of the principles and consequences.

There must be legislation controlling the taking of samples, the necessary consents, the retention and destruction of samples and of radiographs and of information taken from them. Wherever the boundaries are to lie, they must be clearly stated. It is a first principle of human rights that the citizen must know what those rights are.

3.2 Secondly, the scientists should operate under a published, statutory-based Code of Practice, just as there is a Code of

Practice covering the use of firearms or the use of plastic bullets by the police in Northern Ireland. The Code should cover the whole procedure from receipt of samples to giving evidence in court. There must be full and frank disclosure of scientific methods, equipment used, notes taken and tests carried out, even though the results may cast a shadow of doubt on the guilt of the suspect. These are minimum standard requirements, and failure to comply with them should result in the evidence being excluded.

I can tell you, these things are not done in the UK. In a recent murder case in which, crucially, the blood-grouping on the defendant's shoe was alleged to match the blood group of the deceased, a Home Office scientist went into the witness box. He had, he said, 20 years experience as a forensic scientist. He had carried out certain tests, he had come to certain conclusions, and that was his evidence. But it was just not true. The original file, produced late in the day at court, showed that he had not carried out any of the tests, although he had supervised one. The tests had been carried out by scientists of three years' experience and the opinion was theirs.

3.3 Thirdly, there must be a pool of experts available to work for the defence, a library of information and expertise, ready and willing to help in technical fields. A defendant and his lawyers must have access to justice. The Royal Commission has gone some way towards this in its proposals for a new Forensic Science Advisory Council and that public sector laboratories should also help the defence. I prefer, however, well-qualified expertise to come from sources independent of public bodies.

3.4 Fourthly, data protection. I am deeply worried about the idea of the database to solve crime. My concerns centre on the risk of misuse and abuse of DNA profiles kept on a comprehensive database. As Professor Howard Slater of the University of Wales put it:

> "In the last few years in many celebrated cases, convictions have been set aside becuase of shoddy and fraudulent forensic evidence and false or fabricated police evidence. It seems to me, whatever the basic civil liberties issues may be, the public simply will not trust the police and closely-related agencies to apply a complex, highly-sensitive technique such as DNA fingerprinting with the necessary rigour and honesty."

Just think for a moment. If you were the victim of a terrible mistake, such as mis-identification - common enough - and you were arrested, charged, but fortunately acquitted. And you had given a

blood sample for DNA purposes. Would you really be happy about your genetic data floating about the system for the rest of your life? Would you be secure in the knowledge that no mistake could possibly happen with that information?

Some, like Professor Williamson of St Mary's Hospital Medical School in London, who support a national database with all adults, argue that DNA samples and data should be the property of, say, the judiciary rather than the police. But I doubt if that would be either practicable or a meaningful check against abuse.

Professor Jeffreys has recently suggested that a national data-base would not be politically acceptable, but that there might be a case for keeping the profiles of previous offenders. I agree, with some hesitation, although it means that suspects must be told that if they are convicted their data can be used for other purposes. That is an exception to the basic principle (as with fingerprinting), but an acceptable one. Anything more would be "a step too far".

3.5 Finally, we must all recognise that however many laws you pass, the process, particularly the scientific process, is not static. There must therefore be a link to another process, the democratic process, to ensure that the rights and responsibilities in this area are not left unmonitored. We have no Minister of Justice in the UK (although we will have one one day). But we do have Parliamentary Committees of the House of Commons. It should be the function of one such committee to oversee the developments in this are - to monitor, to investigate, to listen to the views expressed, and to be a public and democratically accountable forum for protecting rights.

CONCLUSION

As a lawyer, I believe that I have a duty beyond the mere interests of my client.

As scientists, you will have your own creed. In the Judith Ward case, the appeal court said that, in future, it should be spelled out in the clearest terms to scientists that they must act in the course of justice.

Perhaps Gustave Lebon (in the nineteenth century) got closest to it, when he said: " Science has promised us truth - an understanding of such matters as our minds can grasp; it has never promised us either peace or happiness".