
CONSULTATION PAPER

ON

THE ESTABLISHMENT

OF A DNA DATABASE

(LRC CP 29 - 2004)

IRELAND

The Law Reform Commission
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THE LAW REFORM COMMISSION

Background

The Law Reform Commission is an independent statutory body whose main aim is to keep the law under review and to make practical proposals for its reform. It was established on 20 October 1975, pursuant to section 3 of the *Law Reform Commission Act 1975*.

The Commission's Second Programme for Law Reform, prepared in consultation with the Attorney General, was approved by the Government and copies were laid before both Houses of the Oireachtas in December 2000. The Commission also works on matters which are referred to it on occasion by the Attorney General under the terms of the Act.

To date the Commission has published seventy Reports containing proposals for reform of the law; eleven Working Papers; twenty eight Consultation Papers; a number of specialised Papers for limited circulation; An Examination of the Law of Bail; and twenty four Reports in accordance with section 6 of the 1975 Act. A full list of its publications is contained in the Appendix to this Consultation Paper.

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Full responsibility for this Consultation Paper, however, lies with the Commission.

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INTRODUCTION

1. On 5 February 2003, the Attorney General, Mr Rory Brady SC, acting pursuant to section 4(2)(c) of the *Law Reform Commission Act 1975*, requested the Commission to consider the following matter:

“The establishment of a DNA Databank. I would appreciate that in your consideration of this issue you would address the complex constitutional and human rights issues that may arise. In particular, the classes of DNA profiles, that would make up the database, would have to be addressed. For instance, would the database include suspects who have not been convicted.”

It is clear from his reference requesting the Commission to consider the establishment of a DNA database that our task primarily concerns considering the establishment of a repository of forensic DNA *profiles* generated from biological *samples*, which can be electronically stored for comparison with casework evidence profiles, which are those *profiles* generated from biological material found at the scene of a crime.

2. One needs to have an appreciation of how rare a person’s DNA profile is, what analysing DNA will reveal about an individual and whether retaining DNA profiles poses any threat to the human rights of an individual. A clear understanding of the science involved is plainly a prerequisite to grappling with the intricate civil libertarian concerns as well as the evidential issues that DNA profiling and its usage may entail. In this Paper, we draw a distinction between the samples and the profiles in determining whether the sample or the profile or both should be destroyed. It is important to highlight this distinction from the outset. The sample contains the whole of a person’s DNA while the profile consists of only a small section of an individual’s DNA, which at present is believed to contain little

personal information about an individual aside from parentage and relatedness.¹

3. The benefits of establishing a DNA database are widely acknowledged. Experience in other jurisdictions has illustrated the important contribution a DNA database makes to crime investigation.² A DNA database enables a person, not previously suspected of committing a crime, to be identified as the perpetrator of an offence. Consequently, it ensures that miscarriages of justice are avoided. In this respect however, it is important that evidential safeguards are in existence, which guard against the DNA database itself leading to miscarriages of justice. As against the benefits of a DNA database, the costs of it in terms of the infringement to an individual's rights must be weighed. The establishment and implications of potential usage of a DNA database may interfere with an individual's privacy and bodily integrity rights and their privilege against self incrimination. The overriding theme of this Paper is therefore the need to strike a balance between these conflicting interests in establishing a DNA database.

4. The potential for misuse of the information contained in DNA is cited as the primary civil liberties concern over the retention of DNA profiles on the database. We therefore submit that the greater the safeguards implemented to protect the security of the DNA samples and profiles, the easier it is to justify the retention of the DNA information. This Paper consequently entails examining how the public confidence in the security of the database could be improved. On the basis of a secure system being in existence, we recommend which samples and profiles can justifiably be retained. Without safeguards against misuse however, the justifications for retaining any samples or profiles at all are not compelling. Similarly, if there is a careful description of each purpose for which the database may be consulted and the information utilised, the greater the number of DNA profiles, which can justifiably be accumulated and retained.

¹ See Hageman, Prettvett and Murray *DNA Handbook* (Butterworths Canada Ltd 2002) at 6-12.

² See for example the UK Forensic Science Service *The National DNA Database – Annual Report 2002-2003* at 26. Available at: <http://www.forensic.gov.uk/forensic/entry.htm>.

5. In this Paper, the Commission commences in Chapter 1 with an examination of the science of DNA. In Chapter 2, it gives a brief overview of the advantages and disadvantages of establishing a DNA database. In Chapter 3, the individual rights that may potentially be infringed on the establishment of a DNA database are discussed. These human rights principles will shape and direct our recommendations in later chapters. Chapter 4 outlines the current powers in respect of the taking of DNA samples and examines some problems that arise in respect of these powers. The *Criminal Justice (Forensic Evidence) Act 1990* and the Scheme of the *Criminal Justice Bill 2003* are discussed here. Chapters 5-7 are at the very centre of the Paper and discuss the core issues contained in the Attorney General reference. Chapter 5 discusses firstly, the categories of persons from whom the legislation should enable samples to be obtained and secondly, those profiles which should be retained indefinitely on the database. Chapter 6 draws a distinction between scene of crime stains and comparator samples and examines whether these samples should be retained indefinitely or destroyed after the creation of the profile. Chapter 7 examines the permissible purposes for which the Commission accepts the biological samples and the profiles on the database may be used. Chapter 8 contains a discussion on the oversight and regulation of the database and samples. Significantly, it also deals with the question of how the samples and the database may be securely protected. It examines how the chain of custody of a sample can be maintained so as to avoid contamination and in this respect the validity of the crime scene examination and laboratory results can be ensured. Finally, in Chapter 9 the Commission discusses the implications of the defendant's right to a fair trial where DNA evidence is in issue. The safeguards that should be implemented in this respect are detailed. In particular, the value of requiring a pre-evidential hearing, corroboration and a judicial warning where DNA evidence is in issue is assessed.

6. This Consultation Paper is intended to form the basis for discussion and accordingly the recommendations made are only provisional. The Commission will make its final recommendations on this topic following further consideration of the issues and consultation with interested parties. Submissions on the provisional recommendations contained in this Consultation Paper are welcome. In order that the Commission's Final Report may be made available as soon as possible, those who wish to do so are requested to make

their submissions in writing or by email to the Commission by the **31st August 2004.**

CHAPTER 1 FORENSIC SCIENCE, DNA AND DNA PROFILING

“You, your joys and your sorrows, your memories and ambitions, your sense of personal identity and free will, are in fact no more than the behaviour of a vast assembly of nerve cells and their associated molecules.”¹

Introduction²

1.01 The discussion here is by no means a comprehensive treatise on the utilisation of deoxyribonucleic acid (“DNA”) in the service of forensic science, or for that matter an authoritative guide to DNA profiling. The objective is merely to highlight some of the areas that need to be understood before conducting any examination in this field.

1.02 In Part A, an overview of the meaning of forensic science and a brief history of the development and use of two somewhat similar forensic methods is given: fingerprinting and blood grouping. In Part B we address genetics in elementary terms; how the understanding of genetics has developed and, more importantly for present purposes, what is DNA. In Part C, DNA profiling techniques used in the investigation and prosecution of crime are detailed. A point that must be emphasised here, and will be re-emphasised throughout this Paper, is that a clear understanding of the science

¹ Crick *The Astonishing Hypothesis: The Scientific Search for the Soul* (Touchstone 1994) Chapter 1.

² In this chapter we have drawn on material provided by a number of experts in this field who generously gave of their time to speak to the Commission. These include Professor David McConnell of the Smurfit Institute of Genetics and Fellow of Trinity College Dublin, Dr Maureen Smyth and Dr Louise McKenna of the Forensic Science Laboratory. The Commission are also grateful to the Director of the Forensic Science Laboratory, Dr Sheila Willis, for her assistance and allowing us to visit the laboratory and to witness first-hand how this all translates into practice.

involved is a prerequisite to understanding the concerns and benefits of establishing a DNA database, as well as the evidentiary issues that DNA profiling precipitates.

A Forensic Science

1.03 A traditional way in which a potential suspect may be identified is by an eye-witness. However, both in this jurisdiction and in the UK the courts have readily recognised the risk of wrongful conviction when juries rely wholly or substantially on eye-witness identification evidence. Mistaken identification evidence is a notable source of miscarriages of justice. A practice has developed whereby trial judges in their summing up to the jury will emphasise the need for caution depending on the circumstances of the visual identification, such as whether the person is known to the witness, the reliability and credibility of the witness as to the recognition, the state of the light and the length and proximity of observation.³ There is less chance of this occurring when scientific techniques are used. Such techniques have extremely powerful exculpatory as well as inculpatory value. Even so, evidential issues, such as whether corroboration is required before convicting a defendant solely on DNA evidence is a matter requiring some attention.⁴ But, even at the outset it is clear that DNA evidence, as with all evidence, needs to be tempered with all the other information available.

1.04 Forensic science involves the application of scientific methods and techniques to the investigation of crime and forensic refers to the scientific tests or techniques used in connection with the detection of crime. There are numerous forms of forensic science, including fingerprinting, handwriting and document examination, forensic odontology, forensic hypnosis, forensic psychiatry, polygraph, ballistics, facial mapping and reconstruction, photo-fit and

³ *People v Casey (No 2)* [1963] IR 33 at 39-40 per Kingsmill Moore J, who gave the classic warning about visual identification, which has been widely used before common law juries. The leading case on this in the UK is *R v Turnbull* [1977] QB 224.

⁴ See paragraphs 9.18-9.27.

E-fit, voice prints, photogram metric features comparison, breathalyser, blood grouping and DNA profiling.⁵

1.05 The methods of forensic detection that are most important for present purposes are those which enable an individual to be linked to the mark or substance left at the scene of a crime. As Hardiman J points out in *Dunne v DPP*.⁶

“We are long habituated to the idea that technology and science can snare the criminal. From the familiar photograph and fingerprint to the microscopic fragment of hair or tissue, the role of their products in detection and the proof of guilt has entered into the public consciousness. The work of the criminalist, the SOCO [scene of crime officer], chemist, the photographer, above all the DNA expert, are firmly established. The law itself has changed to accommodate them. A suspect may be fingerprinted, photographed, compelled to give up his clothing and possessions for testing and to supply samples of his hair, tissue or bodily fluids under a variety of statutes.”⁷

1.06 Investigations often revolve around finding the individual who left the ‘stain’ in order to question that person as to how the stain came to be present at the scene and either eliminate them from the inquiry or treat them as a suspect. In this Paper the Commission is primarily concerned with DNA profiling as a means of connecting an individual to the ‘stain’ left at a scene of crime. But, before turning to DNA specifically, fingerprinting and blood serology will be briefly outlined to illustrate both the shortfalls in those methods and so as to enable analogies to be drawn with the more modern technique of DNA profiling with which we are concerned here.

⁵ For a discussion of these methods and their use in criminal proceedings see Ebisike *An Appraisal of Forensic Science Evidence in Criminal Proceedings: A Research Study* (Greenway 2000). For a more colourful historic account of forensic science see Wilson *Written in Blood: A History of Forensic Detection* (Grafton Books 1989).

⁶ [2002] 2 ILRM 241.

⁷ *Ibid* at 246.

(1) Fingerprints

(a) History

1.07 “[F]ingerprints are formed by the deposit of the perspiration and fatty matter secreted by the sweat glands in the friction-skin of the hands, allied with any dirt, which happens to be on the fingerprints”.⁸ As Ebiske notes, the history of present day fingerprinting technique is a long one.⁹ In 1823 Johannes Purkinje, a Bohemian physiologist described the constancy of fingerprints and observed that they have specific patterns, namely, “whorls”, “ellipses” and “triangles”. In 1858 William Herschel, an English civil servant working in India, asked a contractor to sign the back of a contract with a print of his hand. Later he made illiterate pensioners sign their receipts by pressing a finger dipped in ink in order to prevent them from coming back twice for their government pensions. About the same time, in Tokyo, a British physiologist, Henry Faulds noted the fingerprints on Japanese pottery and began studying the “whorls”. Two years later the police, knowing of his interest in fingerprints, engaged Faulds to assist in analysing the sooty fingerprints left by a thief on a whitewashed wall. He compared those prints with those of the man arrested by the police and to his surprise found they were quite different. Another suspect was arrested and Faulds showed that it was his fingerprints which matched those left at the scene.¹⁰

⁸ Harrison “The Detection of Fingerprints on Documents” [1958] Crim L R 591.

⁹ Ebiske *An Appraisal of Forensic Science Evidence in Criminal Proceedings: A Research Study* (Greenway 2000) at 18. See also Lane *The Encyclopaedia of Forensic Science* (Headline 1992) at 173-203.

¹⁰ Early attempts to identify an individual systematically were made by Adolphe Bertillon, who developed the system of “anthropometry” or “Bertillonage” in 1882. His system required that measurements of various parts of the body and photographs be taken and notes made of scars and other body marks (known as his spoken portrait or *portrait parlé*) in order to distinguish individuals. Indeed, by 1888 Bertillon’s method had become so successful that a new department of identity was set up, of which he was appointed chief. However, despite this Bertillonage was flawed because it required such intricate measurements to be taken. Errors made comparison of results difficult and it was not unknown for individuals to have the same measurements. Accordingly, fingerprints, which were much easier to use, gradually replaced Bertillonage completely.

1.08 The first recorded case in which fingerprints led to a conviction was in Argentina, in 1892, when Francesca Rojas was convicted of murder having killed her two children. When charged on the basis of the fingerprint evidence – a print found in a bloodstain left on the door – she confessed to the murders.

1.09 Also in 1892, Sir Francis Galton, after conducting a three year study to make quite sure fingerprints are unique or at least that duplication was rare, published the paper “Finger Prints” in the prestigious journal *Nature*. He described fingerprints as normally revealing a triangular shape. However, the problem that was encountered was establishing a workable classification system. The aim was to enable a policeman to locate a particular fingerprint quickly from a collection of millions. Later, in 1896, it was a British Civil Servant, Edward Richard Henry, on the basis of Galton’s work who devised a system, which set out the ‘basic’ formula for any fingerprint. Henry was subsequently made an Assistant Commissioner at Scotland Yard and in 1902 founded the Central Fingerprint Branch. By the end of 1902 as many as 1,722 identifications had been made.¹¹

(b) *Use and Limitations of Fingerprinting*

1.10 Fingerprinting has been accepted and considered reliable for over a century. The uniqueness of fingerprints has been confirmed. Indeed Ebisike states that “[i]n the final analysis, fingerprinting appears the most reliable of all forensic science techniques”.¹² This may be explained by its use and reliability over such a long period of time. Consequently, most jurisdictions maintain a collection of fingerprints so as to enable them to associate individuals with their past crimes and to determine whether marks/prints left at a scene of crime can be linked with a known individual. This facility has the effect of narrowing the field of suspects who need to be investigated and can be referred to broadly as “intelligence purposes.” The storage of fingerprints has been somewhat modified in line with technological advances and they now tend to be stored on databases, which enable records to be more effectively interrogated. The shortfall in this method of identification is that its reliability is dependent on being

¹¹ Wall *Genetics and DNA Technology: Legal Aspects* (Cavendish 2002) at 6.

¹² Ebisike *An Appraisal of Forensic Science Evidence in Criminal Proceedings: A Research Study* (Greenway 2000) at 20.

able to compare the scene of crime mark with a clear set of a suspect's prints; because of the nature of the scene of crime prints, which may be latent, visible or even wet and may be present on a number of different surfaces, such as on human skin, it may only be possible to compare certain features of a print.¹³ By measuring the features of a fingerprint a numerical framework may be created within which one may compare one print with another.¹⁴

1.11 However, the presentation of fingerprint evidence has always tended to be somewhat subjective, in that the fingerprint expert will provide the court with an opinion as to whether the fingerprints of the accused match those found at the crime scene. With the increasing use of computerisation and fingerprint recognition software, a greater measure of objectivity may be created, as regards such evidence. As we shall see,¹⁵ although DNA evidence is infinitely more discriminating as a forensic method, an expert is generally precluded from expressing an opinion as to the relevance of the match in showing the guilt or innocence of the accused.

(2) Blood Grouping

1.12 The use of blood grouping as a means of identifying individuals arose mainly as a result of medical research, particularly blood transfusions.¹⁶ The breakthrough came with the discovery of blood groups through Karl Landsteiner's work on blood cell agglutination in 1901. Initially it was discovered that there were three blood groups – A, B, and C (now called O). Later, Landsteiner found a category that had characteristics of both A and B – AB. By the 1920s, ABO blood grouping was routinely used on patients being given blood transfusions and significantly reduced the mortality rates.

¹³ For an analysis of the nature of scene of crime evidence and how such evidence may be successfully marshalled see Lee, Palmbach, and Miller *Henry Lee's Crime Scene Handbook* (Academic Press 2001).

¹⁴ For more detail of the classification of fingerprints see Lane *The Encyclopaedia of Forensic Science* (Headline 1992) at 188-193.

¹⁵ See paragraph 9.49.

¹⁶ The oft cited first blood transfusion was of Pope Innocent VIII in 1492, but this is doubtful since William Harvey did not describe his blood circulation model until 1628. Transfusions were attempted with varying degrees of success and by the end of the 19th century a patient's chances of surviving was 50%.

1.13 The forensic application of blood grouping was first demonstrated by distinguishing between human blood and that of other species. In 1902, a French murderer was sent to the guillotine when tests proved that blood on his clothes was human and not from skinning a rabbit – as he had claimed.¹⁷

1.14 Later the discovery of different blood typing systems, such as the rhesus system, increased the power to discriminate between blood groups in forensic applications. Blood grouping has been used to exclude alleged fathers in paternity disputes and, more importantly for present purposes, to exclude a suspect from inquiries on the basis that blood found on a victim did not match the blood grouping of that suspect. As an exclusionary method this analysis has been shown to be very powerful, but as an inclusionary method significant limitations are apparent. With four ABO blood groups and two rhesus groups it is only possible to recognise a maximum of eight different types. If, for example, a blood sample found at the scene of a crime, which is believed to have been left by the perpetrator, is type AB and two suspects are found, one who has blood type A and one who has type AB then two conclusions can be drawn: the suspect with type A is definitely not the source of the scene of crime sample and the suspect with AB *may* be the source. However, if we take figures for blood group frequencies in Western European populations as: A = 42%; B = 9%; AB = 3%; O = 46%,¹⁸ then one may say that approximately 1 in 33 people have blood group AB. Despite this rather basic example, it can be readily observed that this information is not terribly helpful in identifying who may be treated as a legitimate suspect – or for that matter determining who is the source of the crime scene stain. Blood grouping tests only result in fairly high probabilities, particularly when compared with the likelihoods in the case of DNA.¹⁹

1.15 Blood grouping is useful in the preliminary stages of an investigation in order to provide a screen before more detailed DNA

¹⁷ Wilson *Written in Blood: A History of Forensic Detection* (Grafton Books 1989) at 198.

¹⁸ Wall *Genetics and DNA Technology: Legal Aspects* (Cavendish 2002) at 46. However, it should be noted that some small and isolated population may differ. Wall notes that the frequency of group B in some Asian populations has been reported to be around 36%.

¹⁹ See paragraphs 1.44 and 9.33-9.36.

tests are performed. Therefore suspects may be eliminated so as to remove the need to carry out expensive and time consuming DNA tests, because in contrast a blood test is relatively quick and inexpensive. However, with the exponential development in DNA technology²⁰ such as increased automation in profiling, coupled with the ability to use less intimate samples to obtain a profile²¹ the costs have reduced and speed increased. The consequence is that the need for this initial screening process has been reduced.

B The Science of DNA

(1) Genetics

1.16 Genetics is the scientific study of how physical, biochemical, and behavioural traits are transmitted from parents to their offspring. Thus it embraces the mechanisms of inheritance whereby, although the offspring of sexually reproducing organisms do not exactly resemble their parents, the differences and similarities between parents and offspring recur from generation to generation in various patterns.

1.17 Modern understanding of genetics and heredity is the product of a number of developments. First, the method of experimentation that emerged in the 17th Century; secondly, the development and use of the microscope which became prevalent in the 19th Century; thirdly, the emergence of chemistry and biochemistry in the 18th and 19th Centuries; fourthly, the publication of *The Origin of the Species* by Charles Darwin, the British scientist, who laid the foundation of modern evolutionary theory; finally, the rediscovery, in 1900, of the work of the Augustinian monk Gregor Johann Mendel, which concerned principles of hereditary transmission of physical characteristics. Known as Mendel's laws these were originally formulated in 1865 and became the theoretical basis for modern genetics and heredity.²² From systematically

²⁰ See paragraph 1.38.

²¹ See paragraph 1.36.

²² “From his experiments with peas, he demonstrated that parent plants showing different characters produced hybrids exhibiting the dominant parental character, and that the hybrids themselves produced offspring in which the parental characters re-emerged unchanged and in precise ratios. After the rediscovery of Mendel's work in 1900, Mendelism was often thought, wrongly, to be the antithesis of the Darwinian theory of natural

breeding peas, he demonstrated the transmission of characteristics in a predictable way by factors (genes) which remain intact and independent between generations and do not blend, though they may mask one another's effects.²³

(2) *Deoxyribonucleic Acid ("DNA")*

1.18 DNA is found in every one of the trillions of cells²⁴ in the human body; that is with the notable exception of erythrocytes (red blood cells) which do not have nuclei. Cells are the basic unit of structure and function in all living things and consist of protein surrounding a nucleus. Proteins are large complex molecules made up of amino acids. These acids cause the protein chains to fold up into specific three-dimensional structures that define their function within a cell. The nucleus itself is made up principally of nucleic acid.²⁵ When cells divide into two to reproduce, the nucleus transforms into thread-like packets, which are the chromosomes. In every cell there are 46 chromosomes arranged in 23 pairs. The ovum and sperm each contain 23 single chromosomes and at fertilisation these combine to produce a total of 46.²⁶ Accordingly, half of the genetic information is maternal and half is paternal in origin. 44 of the 46 human chromosomes have been assigned the numerical values of chromosome pair 1, chromosome pair 2 and so on to chromosome

selection; in fact, Mendel had demonstrated the primary source of variability in plants and animals, on which natural selection could then operate" *The Oxford World Encyclopedia* (Oxford University Press 1998).

²³ Mendel "*Versuche über Pflanzen-Hybriden*" (1866) 4 *Verhandlungen des naturforschenden Vereines Abhandlungen Brunn* 3-47.

²⁴ It is estimated that the human body is made up of around 100,000,000,000,000 cells.

²⁵ In 1911, the biochemist Phoebus Aaron Theodore Levene discovered that there were two types of nucleic acid called ribose (RNA) or deoxyribose (DNA) depending on whether they contain sugar. It was difficult to tell what was happening inside, until it was discovered that by staining a nucleus with dye it could be seen that the cells divide.

²⁶ It should be noted that spermatozoa – the male reproductive cells – contain only half the normal complement of DNA, so an analysis of a single spermatozoa would only produce half the components of the man's profile. However, semen detected in routine forensic casework normally contains numerous spermatozoa that exhibit together the full profile: see further Hageman, Prevett, and Murray *DNA Handbook* (Butterworths Canada Ltd 2002) at 7.

pair 22. Each individual will therefore have a maternal and paternal copy of chromosome 1, 2, through to 22. The remaining two have been assigned a letter – X or Y. Females have two X chromosomes, while males have an X and a Y.

1.19 The main constituent of chromosomes is DNA – the other constituent being protein. In the 1940s, it became apparent that DNA is the principal molecule which carries genetic information from one generation to the next.²⁷ This, however, was not conclusively established until 1953, when Watson and Crick deduced the structure of DNA.²⁸ Each molecule of DNA consists of two strands which coil round each other to form a double helix, a structure like a twisted ladder: see figure A at paragraph 1.20. Each rung of the ladder consists of a pair of chemical groups called bases linked together by hydrogen bonds. There are four types of bases (nucleotides) known by their initial letters - A, G, C, and T.²⁹ The sides of the ladder are comprised of phosphates and sugars. An important aspect of DNA is that the two strands will only bind according to a specific rule. Namely, A and T pair with each other and G pairs with C. For example, if the sequence on one strand is --AGATTCTG-- then the opposite chain must have the sequence --TCTAAGAC--. Because the bases combine in specific pairs so that the sequence on one strand of the double helix is complementary to that on the other, it is the specific sequence of bases which constitutes the genetic information.³⁰

²⁷ In 1944, the Canadian bacteriologist Oswald Theodore Avery proved that DNA was the fundamental substance that determined heredity: Avery, MacLeod, McCarthy “Studies of the chemical nature of the substance inducing transformation of pneumococcal types. Induction of transformation of deoxyribonucleic acid fraction isolated from *Pneumococcus* Type III” (1944) 79 *J Exp Med* 137-158.

²⁸ Watson and Crick “Molecular Structure of Nucleic Acids: A Structure for Deoxyribonucleic Acids” (1953) 171 *Nature* 738-740.

²⁹ Meaning adenine, guanine, cytosine, and thymine.

³⁰ The structure of DNA has enabled scientists to understand one of the key facts of life: how cells continuously divide and reproduce with relatively few genetic errors. Essentially, when cells divide into two, the two strands split down the centre, then seek to renew themselves by using the building elements provided by each cell. Each half of the ladder or strand provides a template which guarantees an exact copy of the original double helix: see figure B, below. The structure of DNA itself shows that it is suited to

1.20 A gene is the unit of inheritance, a piece of the genetic material that determines the inheritance of a particular characteristic, or group of characteristics, such as hair or eye colour. Essentially, genes are a particular sequence of base pairs along the DNA strand, as illustrated in figure A, below. The length or sizes of genes vary, but the average gene consists of 3,000 bases.³¹ A genome, on the other hand, is the complete set of genetic material of a particular organism. The human genome has 3.2 billion base pairs. Analysis of the first draft sequence indicated that the number of genes present throughout the genome is about 30,000-40,000.³²

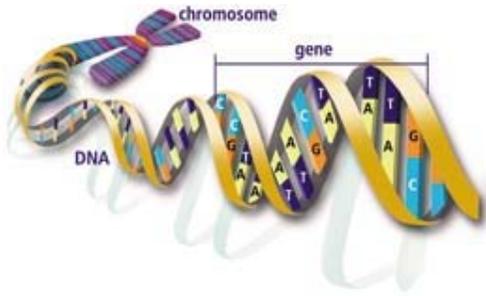


Figure A³³

1.21 The genetic information that is carried in the DNA is in the form of a code which determines an individual's physical characteristics and directs chemical processes. In other words, the sequence or particular arrangement of bases along the DNA strand spells out the exact instructions – these are the genes. All information or instructions contained in DNA is commonly referred to as the

carrying out the three main functions of genes: the capacity to store information; to replicate (the structure demonstrates its capacity to self-replicate); and to mutate in accordance with evolutionary pressures.

³¹ Human Genome Management Information System *Genomics and Its Impact on Science and Society: The Human Genome Project and Beyond – A Primer* (March 2003): <http://www.ornl.gov/hgmis/publicat/primer/>. The largest known human gene, dystrophin, is made up of 2.4 million bases.

³² *Ibid* at 3. The Human Genome Project originally estimated that the number of genes present in the human genome was around 80,000-100,000: The International Human Genome Sequencing Consortium “Initial Sequencing and Analysis of the Human Genome” (2001) 409 *Nature* 860-921.

³³ Image courtesy of the US Department of Energy Genomes to Life Program. Available at <http://www.ornl.gov/hgmis>.

“blueprint for life”,³⁴ as each DNA molecule contains all of the information needed to produce a complete human body. Each cell that has a nucleus contains the entire genome, which is the same from one cell to the other.

1.22 Until the mid-1960s it was believed that most people were nearly identical genetically and that the variations, such as in eye colour and blood grouping, were exceptions. However, through studies a vast amount of data was collected, which revealed that there was much more variation than anyone had predicted. The sequence of the human genome is now thought to be 99.9% the same in all people.³⁵ But, although humans are essentially only 0.1% different from each other, there are many sequences in the genome where there is a lot of variation. Fortunately, for forensic science, those parts of the sequence in the genome vary to such an extent that the sequences can be used to determine whether two biological samples containing cells are from the same source. In other words, it can be shown that where one person has an A at a certain point in their DNA sequence, another person has a C, a T, or a G. With the notable exception of identical twins, who share the same genetic code, at a genetic level no two individuals are exactly alike.³⁶ The important issue of the uniqueness of a DNA profile will be dealt with in more detail below.³⁷

1.23 Genes, however, appear to be concentrated in random areas, or loci, along the genome, with vast stretches of sequences in

³⁴ It has also been described as an individual’s coded “future diary”: Annas “Privacy Rules for DNA Databanks: Protecting Coded ‘Future Diaries’” (1993) 270 *Journal of the American Medical Association* 2346.

³⁵ Human Genome Management Information System *Genomics and Its Impact on Science and Society: The Human Genome Project and Beyond – A Primer* (March 2003): <http://www.ornl.gov/hgmis/publicat/primer/>.

³⁶ It should, however, be noted that the more closely related individuals are, the more closely they resemble each other. Accordingly, brothers have 50% of their genes identical by descent, whereas cousins have 25% of their genes identical by descent. Relatedness and its effect on DNA profiling and the presentation of DNA evidence will be dealt with more fully at paragraph 9.35.

³⁷ See paragraphs 1.43-1.44, 9.05-9.11 and 9.33-9.36.

between.³⁸ The regions of the DNA molecule which contain genes are known as “coding regions”. The coding regions from one individual to the next are almost the same because during evolution they are subjected to selection pressure to maintain their specific function: one may say they are essentially what make us human. But no two individuals carry the same DNA sequence (with the exception of identical twins). The difference is this: only a small part of the entire human genome encodes instructions for the production and synthesis of proteins³⁹ - see figure B. In consequence, there are “non-coding” areas that do not contain genes and these are prevalent. It is these areas which are used in forensic testing.

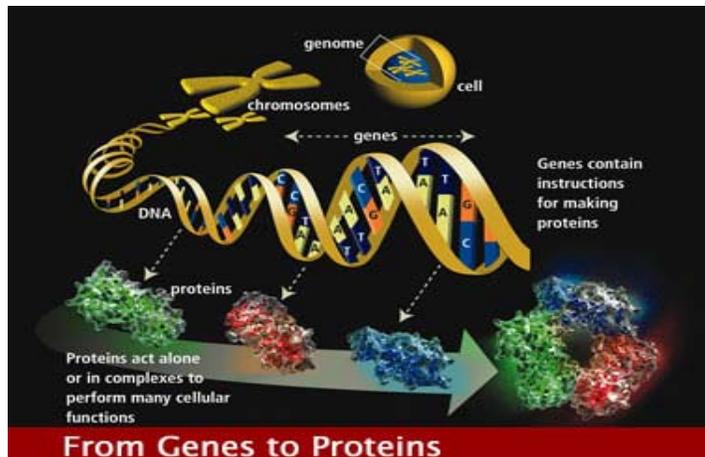


Figure B⁴⁰

1.24 Whereas the coding regions contain sequences that are almost identical from one individual to another, differences can be observed in these “non-coding” areas. The non-coding areas are reported to have little prescribed function (they *may* have no biological function) and have not been subjected to the same selection pressures as the coding regions. These regions or loci are often described as “genetic junk” as the sequences in these areas mutate more rapidly from one generation to the next without affecting the

³⁸ Human Genome Management Information System *Genomics and Its Impact on Science and Society: The Human Genome Project and Beyond – A Primer* (March 2003): <http://www.ornl.gov/hgmis/publicat/primer/> at 3.

³⁹ *Ibid* at 3.

⁴⁰ Image courtesy of the US Department of Energy Genomes to Life Program. Available at <http://www.ornl.gov/hgmis>.

function of the DNA or organism. Most mutations in the non-coding areas are usually transmitted to the offspring, which in turn leads to a vast increase in genetic variability. It is also in the non-coding areas that “hypervariable regions” can be found, in other words where there is a high degree of variation between individuals.⁴¹

1.25 The Australian Law Reform Commission (“ALRC”) in its recent report on the protection of human genetic information in Australia stated:

“In recent years, genetic scientists have increasingly come to believe that it is the non-coding DNA that may be the basis for the complexity and sophistication of the human genome, which permits only 30,000 genes to produce about 200,000 proteins”.⁴²

The ALRC also referred to the views of a leader in the field, Professor John Mattick, who is quoted as surmising that non-coding DNA forms: “a massive parallel processing system producing secondary signals that integrate and regulate the activity of genes and proteins. In effect, they co-ordinate complex programs involved in the development of complex organisms”.⁴³

1.26 The important issues of what a DNA profile reveals about an individual and whether the analysis and storage of biological samples and profiles represents a threat to privacy will be examined in later chapters. What can be said here is that in the investigation of crimes, biological samples are collected from crime scenes in order to determine the possible sources of that sample. Thus, the purpose of analysis is to differentiate between individuals. Accordingly, the areas of difference (the non-coding regions) are more pertinent for forensic analysis than those regions which are highly varied (coding regions). Problems may, however, arise if some non-coding areas are discovered to disclose rather more information about an individual than originally envisaged. This is particularly so if the ‘non-coding’ loci used in forensic profiling are compromised because they reveal

⁴¹ See paragraph 1.34.

⁴² See Australian Law Reform Commission and the Australian Health Ethics Committee *Report – Essentially Yours: The Protection of Human Genetic Information in Australia* (ALRC 96, 2003) at paragraph 2.8.

⁴³ *Ibid* at paragraph 2.8.

personal information – this is a critical point which will be examined in detail later in the Paper.⁴⁴

(3) *Nature of Genetic Variation*

1.27 It was noted above that the main constituent of chromosomes is DNA and that they are essentially long strands of DNA tightly packed into bundles.⁴⁵ Some chromosomes are significantly larger than others and more densely packed with genes. For example there are 279 million base pairs comprising the largest chromosome – chromosome 1 – and an estimated 2968 genes.⁴⁶ Each chromosome has a distinctive placement of genes and non-coding regions along its length and by virtue of the work carried out by the Human Genome Project all these locations are now known. One can refer to these locations or loci as addresses. For example, an address used in forensic profiling D3S1358 is a stipulated area on chromosome pair 3: D3 refers to a site on pair 3; S refers to the location; and 1358 is the actual address on the strand.⁴⁷

1.28 At this point, we need to go into some detail about the way in which genetic variation is assessed and explained because, as will become apparent,⁴⁸ this is the basis of forensic testing by which an individual's DNA may be profiled. Despite the fact that 99.9% of the DNA sequence in humans does not vary from individual to individual, each human being is unique and there is some genetic variation. Variation occurs in a number of different ways: for example, the sequence of base pairs may differ by one or more bases at a particular locus. This variation is known as “sequence polymorphism” and each possibility is called an “allele”, for example a stretch of DNA may on one strand of the double helix take the following form:

--- TTCATGATTA --- (Allele A)

⁴⁴ See paragraphs 5.05-5.09.

⁴⁵ See paragraph 1.18.

⁴⁶ Human Genome Management Information System *Chromosome FAQs*. Available at: http://www.ornl.gov/TechResources/Human_Genome/posters/chromosome/faqs.html.

⁴⁷ See further Hageman, Prevett and Murray *DNA Handbook* (Butterworths Canada Ltd 2002) at 7.

⁴⁸ See paragraphs 1.41-1.44.

--- TTCATCATTATA --- (Allele B)

--- TTCATTATTATA --- (Allele C)⁴⁹

1.29 A further way in which individuals may differ at a molecular level – which is the basis of current profiling techniques – is in terms of the length of a stretch of DNA at a particular location, *ie* “length polymorphisms”. The difference in length is attributable to the changeable number of times a sequence of DNA is repeated in tandem along a particular stretch of DNA (“a repeat unit”), which are typically two to five base pairs in length. For example the sequence AATAC at a particular genetic address may be repeated from 5 to 10 times to produce six different alleles of repeat unit sizes 5, 6, 7, 8, 9 and 10, as follows:

-AATAC AATAC AATAC AATAC AATAC- (Allele size 5)

-AATAC AATAC AATAC AATAC AATAC AATAC- (size 6)

-AATAC AATAC AATAC AATAC AATAC AATAC AATAC- (size 7)⁵⁰

And so on to size 10. One should note here that length variations exhibit greater variation than sequence variation and are accordingly more discriminating from a forensic perspective. The repeat sequences are known as variable number of tandem repeats (“VNTRs”) for relatively large repeat units and short tandem repeats (“STRs”) for small repeat units. STR profiling has become the preferred method of forensic analysis, because STRs exhibit greater variation and may be targeted more easily with probes.

(4) Transmission of Genetic Variation

1.30 DNA locations appear in duplicate because chromosomes occur in pairs, so regardless of whether they are the locations of genes or non-coding areas analysis will unveil results from a maternal and paternal donor at each site or locus tested: if an individual has inherited the same item of DNA at a specific locus from both parents then they are “homozygous” at that location. Alternatively, if the individual has inherited two different items of DNA at a particular locus then they are “heterozygous” at that location. If a person is homozygous then his or her sex cells will contain the same piece of genetic information, in which case only one allele may be passed on to their offspring. On the other hand, if a person is heterozygous at a

⁴⁹ See Hageman, Prevett and Murray *DNA Handbook* (Butterworths Canada Ltd 2000) at 7.

⁵⁰ *Ibid* at 9.

particular location then there is an equal chance that either allele will be passed on, as illustrated as follows:

Allele	Mother (AA)	Father (BC)	Child (AB)	Child (AC)
A	—		—	—
B		—	—	
C		—		—

If both parents are heterozygous, so that they both have allele BC at a particular site, then each can pass on either a B or a C. Furthermore, there are three different descendant types, BB, BC and CC and because there are two ways that BC may be produced it is expected that half the couple's offspring would be BC, a quarter BB, and a quarter CC.

1.31 These kinds of probabilities and the distinction between heterozygous and homozygous are important in determining the relative uniqueness of a particular DNA profile, as well as in appreciating relatedness and parentage.⁵¹

C DNA Profiling

(1) General

1.32 DNA profiling refers to the identification of individuals through their DNA. All eukaryotic cells (which are present in an

⁵¹ See Hageman, Prevett and Murray *DNA Handbook* (Butterworths Canada Ltd 2000) at 6-12.

individual's tissue or bodily fluids) contain an identical DNA molecule.⁵² There are trillions of sources of DNA that can be set side by side with other samples (such as a sample left at a crime scene) to determine the likelihood that these samples originate from the same individual.⁵³ DNA profiling is used as an investigative tool that enables inferences to be drawn as to who may have been present at a particular place, just as inferences may be drawn from the presence of fingerprints. Profiling can be used to identify, confirm or eliminate a suspect from an investigation. DNA profiling has also become a particularly beneficial tool in exonerating those wrongfully convicted. A compelling illustration of the potency of DNA in exonerating individuals is provided by the US National Institute of Justice project *Convicted by Juries, Exonerated by Science*.⁵⁴ As implied in the title the study examined cases where wrongful convictions were obtained and subsequently overturned on appeal through the use of DNA evidence. This study and the work conducted by *Innocence Project*⁵⁵ act as powerful reminders of the fallibility of the justice system, particularly when a conviction is substantially obtained on the basis of eye-witness testimony.

1.33 Equally, a DNA match cannot be considered as conclusive evidence of a suspect's guilt, as there may be numerous reasons for the match: for example, the match may be coincidental, as a result of contamination or tampering, or may have been deliberately planted to implicate. Or indeed – and this is a point which should be emphasised – the suspect's DNA may have been innocently left at the scene of crime. Also the relative strength and usefulness of DNA evidence is dependent on a number of factors, such as the quality of

⁵² This is already noted at paragraph 1.18.

⁵³ It should be made clear that what is being described here is the concept of 'match probabilities' and this has a particular relevance in relation to presenting DNA evidence to a court at a subsequent prosecution. This will be dealt with at paragraphs 9.33-9.44.

⁵⁴ The National Institute of Justice *Convicted by Juries, Exonerated by Science: Case Studies in the Use of DNA Evidence to Establish Innocence After Trial* (June 1996). Available at: <http://www.ncjrs.org/pdffiles/dnaevid.pdf>.

⁵⁵ As of 28 February 2003, 123 convicted offenders have been exonerated in the US following post-conviction DNA testing: See <http://www.innocenceproject.org>.

any biological sample left at a scene of crime, and to a lesser extent the quantity of material, as well as the frequency and distribution of the particular alleles within the population. These considerations are crucial and we shall consider them more fully later in the Paper.⁵⁶

1.34 The realisation that DNA could have a forensic application was a result of medical research. In 1984, while studying the genes which code for haemoglobins, Sir Alec Jeffreys of the University of Leicester observed basic building blocks made of repeated sequences within the DNA which were 10 or 15 bases long. He isolated two of these blocks, mass-produced them and made them radioactive. They were then used as probes to detect what Jeffreys describes as “hypervariable regions” in other genetic material. Samples were taken from members of a family to determine whether this method could reveal the relationships. The “hypervariable regions” appeared as dark bands in columns against a white background on an X-ray film. By placing the columns of the parents and children side by side it was observed that all the bands on the children’s film were derived from the mother or father.⁵⁷

(2) Biological Evidence

1.35 As Dr James Donovan, the former Director of the Forensic Science Laboratory, notes:

“Forensic science is largely based on the rule of Edmund Locard, Professor of Medical Jurisprudence at Lyon, who formulated the principle that ‘every contact leaves a trace’. This is known ... as ‘Locard’s principle’.

There are many examples of this, a most basic example being a pedestrian struck by a car. The body breaks the head lamp glass, which is left at the scene and can indicate the make and model of the car. The body bounces onto the bonnet, melting the top layer of paint deep within the weave of the victim’s clothing, which allows the scientist to identify the colour from a database. The colour gives the make and model of car. Normally the body smashes into

⁵⁶ See paragraphs 9.05-9.11 and 9.33-9.36.

⁵⁷ Jeffreys, Wilson and Thein “Hypervariable ‘Minisatellite’ Regions in Human DNA” (1985) 314 *Nature* 67-73 and Jeffreys, Wilson and Thein “Individual-Specific ‘Fingerprints’ of Human DNA” (1985) 316 *Nature* 76-79.

the windscreen, breaking it and leaving glass at the scene. Finally the head crashes into the side pillar of the windscreen, leaving blood and human tissue on the pillar, which can be examined by means of DNA profiling. Thus a very definite linkage can be established between the deceased and the vehicle that killed him/her.”⁵⁸

DNA profiling is almost invariably preceded by an examination of scenes of crime (or for that matter, secondary scenes such as a victim’s or suspect’s home) in order to forage for bodily fluid, tissue and, more recently hair roots, from which to generate a DNA profile.

1.36 The following table provides a summary of the types of biological evidence from which a profile may be generated.⁵⁹

Bodily Fluid/Tissue	Location of DNA	Typical Items Examined
Blood	White blood cells (leukocytes) contain DNA; human red blood cells (erythrocytes) do not.	Clothing, weapons, scene stains and various items in cases where blood has been shed.
Semen	Spermatozoa, which is the source of DNA in most semen samples; semen from a vasectomised male may still be successfully typed from DNA from epithelial cells lining the male reproductive tract.	Orifice (oral, vaginal, rectal) and surface (skin) swabs from complainants in sexual assault cases, undergarments, clothing, bedding, condoms.
Saliva	Buccal cells lining the oral cavity.	Cigarette butts, used tissues, chewing gum, toothbrushes, stamps and

⁵⁸ Donovan “The Obtaining, Examining, Analysis and Retaining of Forensic Samples in Criminal Investigation” (2001) MLJI 25.

⁵⁹ Taken from Hageman, Prevett and Murray *DNA Handbook* (Butterworths Canada Ltd 2002) at 22-23.

		envelope flaps, swabs of bite marks, beer bottles, balaclavas, scarves, eating and drinking utensils, dentures.
Vaginal Secretions	Cells lining the vaginal cavity.	Condoms, underclothing, penile swabs, insertion objects.
Skin	Sloughed off skin cells, dandruff.	Clothing, fingernail scrapings.
Hair roots	The root sheath (the bulbous growth at the scalp or body end of the hair contains DNA); if this root is not present, only mitochondrial DNA analysis is an option. ⁶⁰	Pulled scalp, facial or pubic hairs.
Urine	Urine (usually a poor source of DNA; it may contain relatively few epithelial cells).	Clothing, bedding, neat (undiluted) urine samples submitted for drug testing.
Faeces	Faeces (a relatively poor source of DNA; it may contain some epithelial cells from the intestine and rectum).	Faeces, clothing, bedding.
Bones	Bone marrow.	Skeletal remains.
Teeth	Tooth pulp.	Skeletal remains.
Nasal secretion	Epithelial cells lining the nasal and sinus cavities.	Tissues, paper towels, clothing.

⁶⁰ See paragraph 1.45.

Vomitus	Epithelial cells lining the oesophagus and mouth.	Vomitus, clothing, rugs.
Other	Cells from any tissues or organs.	Remains from mass disasters, biopsy or other hospital-related samples, contact lenses.

1.37 As is evident from this table, there are a number of sources from which a DNA profile can be derived. However, the likelihood that a biological sample will create a DNA profile depends on the material involved. For example, blood has a 90% chance of generating a DNA profile. Saliva on a balaclava has a success rate of 43% but on a cigarette butt it is 67% while on a weapon handle it has a success rate of 17%. Hairs have a 25% chance of producing a DNA profile. This is because hair that falls out is dead at the roots and it is difficult to obtain a DNA profile from such hairs. In contrast, hair that is plucked has a much better success rate.⁶¹

(3) Present Profiling Techniques

1.38 The process of analysing a piece of DNA is a very complex one and one that has developed exponentially since first discovered. Single locus probes and multi locus probes have now been overtaken by the use of the polymerase chain reaction (“PCR”) where small samples of previously unsuitable material may be examined. All of the DNA is extracted and the particular area or sequence of DNA is then targeted and copied. The result of this technology has been that it increases the amount of DNA available for testing and enables even very small stains taken from a scene of crime to be tested successfully.

1.39 The particular PCR system that is used in Ireland, Britain, and New Zealand and in most of Europe is called the SGM Plus™ profiling system, which is a commercially produced kit validated for forensic casework.⁶² Defined areas which can differ from one

⁶¹ See Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) at paragraph 2.15.

⁶² The initial STR technique introduced in 1994 involved targeting 4 loci, which was then improved to produce the more discriminating second

individual to the next – non-coding STR regions – are targeted and the resulting profile is referred to as an SGM Plus profile. Essentially the technical process for DNA profiling involves the following main steps:

DNA Extraction: the biological material is removed from the clothing or swab by soaking in water or a buffered solution. The solution is spun in a centrifuge which pushes the cells to the bottom of the tube. Unwanted material such as red blood cells and protein is removed and discarded. The remaining cells are burst through heating or chemical action, which releases the DNA from inside the cells;

DNA Quantitation: the amount of extracted DNA is measured using a commercially produced kit. This essentially will reveal whether primate DNA is present in the sample.

Amplification and Detection: after quantitation, an exact amount of DNA is added to the PCR, which amplifies selected regions of DNA to detectable levels. It is then electrophoresed to separate the different sized fragments. The fragments are then analysed and the DNA profile is determined – manually or by computerised software. Once the profile is generated it is compared with other profiles, such as comparator profiles taken from suspects or those profiles generated from stains found at other scenes of crime.

Statistical Assessment and Reporting: matching profiles are assessed to determine their evidential value.⁶³ This is discussed in greater detail later in the Paper.⁶⁴

generation multiplex (SGM) system that targeted 6 loci and the sex marker.

⁶³ Walsh “The Basic Science of DNA” Seminar Paper delivered at NZLS Seminar: Update on DNA and UK Forensic Science Service *Lawyers’ Guide to DNA* (Version 1) at 6. For a more detailed guide see White (eds) *Crime Scene to Court: The Essentials of Forensic Science* (Royal Society of Chemistry 2002), Ebisike *An Appraisal of Forensic Science Evidence in Criminal Proceedings: A Research Study* (Greenway 2000) at 32-36 and Hageman, Prevett, Murray *DNA Handbook* (Butterworths Canada Ltd 2002) at Chapter 2.

1.40 The process can vary in relation to the time taken to generate a DNA profile. For example, the nature of the sample may mean that extraction will take longer. However, the process can be broken down as follows:

- (i) **Extraction:** depends on sample. Blood sample – 90 minutes; semen stain – approximately 6 hours (or overnight); hairs – approximately 5 hours (or overnight); cigarette ends – overnight soak plus 2 hours;
- (ii) **Quantitation:** about 3 hours;
- (iii) **Amplification:** about 3 hours;
- (iv) **Gel Preparation and Loading:** about 1 hour to pre-run and load (plus at least 2 and a ½ hours to pour and polymerise);
- (v) **Gel Electrophoresis:** 2 and a ½ hours;
- (vi) **Gel Analysis:** 2 analysts for minimum of 2 hours each;
- (vii) **Clerical and Final Checking of Results:** up to 1 hour per case.⁶⁵

As can be seen the process of generating a DNA profile can take around 24 hours, depending on the type of sample to be profiled. However, other variables must also be taken into account: DNA may not be present in the sample or may be completely degraded; the sample may be mixed to such an extent as to render the resulting profile(s) useless.⁶⁶ It is also notable that the period of time in which a DNA profile may be generated is dependant on the volume of work in the laboratory at the relevant time. This is both in terms of over demand and under demand. As regards the latter, because work is carried out in batches, it would be inefficient to run a gel for just one sample.

1.41 A DNA profile, when transcribed, in effect is a digital representation of what an individual's DNA looks like at the specific

⁶⁴ See paragraphs 1.43-1.44 and the more detailed consideration of the evidential issues addressed in Chapter 9.

⁶⁵ See the Forensic Science Service *Introduction to DNA* at 15.

⁶⁶ See paragraphs 9.07-9.08.

targeted regions, or a measurement of the number of short tandem repeat (“STR”) units, as follows:

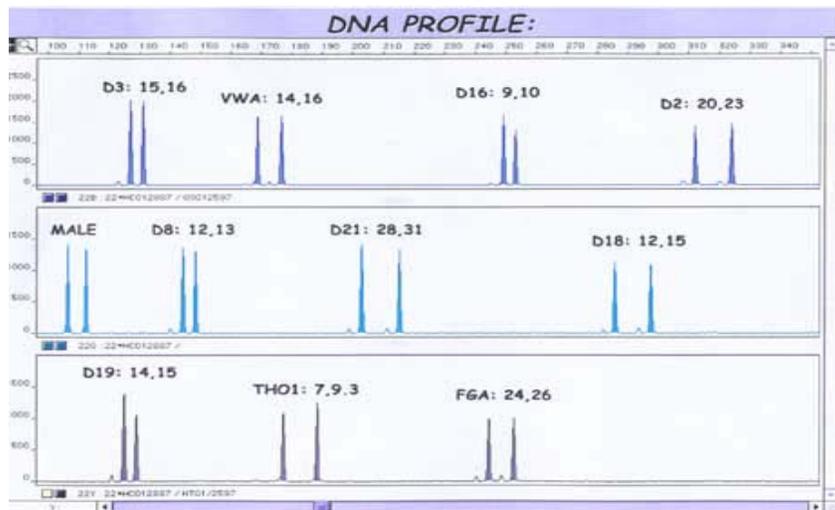


Figure C⁶⁷

1.42 An individual may have a short four base DNA sequence AGAT repeated six times at a particular location on one strand of the maternally derived chromosome and eight times on the corresponding paternal chromosome, which may be written as 6,8 alongside the particular address or locus. By way of example, the results of DNA analysis that might be presented in a rape case may be illustrated as follows:⁶⁸

⁶⁷ Image courtesy of the Forensic Science Service. Available at: <http://www.forensic.gov.uk/forensic/entry.htm>.

⁶⁸ Table courtesy of the Forensic Science Laboratory, Ireland.

	Short Tandem Repeats Region										
STR Loci	Amel (Sex)	D3	VWA	D16	D2	D8	D21	D18	D19	THO1	FGA
Victim's Clothing	X,Y	17,17	17,19	13,14	17,24	12,13	29,30	14,15	13,14	6,7	21,22
Victim's Profile	X,X	14,18	17,19	11,12	20,26	10,14	30,30	14,16	12,12	6,9.3	22,22
Suspect's Profile	X,Y	17,17	17,19	13,14	17,24	12,13	29,30	14,15	13,14	6,7	21,22

On the victim's profile at STR location THO1 (DNA on chromosome pair 11) there are 9.3 repeat units at the particular locus on one of the pairs. This is what is known as a "non-conforming" allele with 9 STR repeat units plus two or more bases. The STR region D3 (DNA on chromosome pair 3) on the suspect's profile is 17, 17, which means that the number of repeat units are the same on both the maternal and paternal chromosomes, *ie* the suspect is homozygous at this locus.

1.43 Interpretation of the above casework example is a two-stage process: first, as can be seen, the scene of crime stain and the suspect's profile 'match', in that the same alleles are present at all ten loci tested; secondly, the significance of this 'match' must be determined. As regards the second stage, one must determine how common or rare a particular profile is in the population or how frequently it is expected to occur. Unless the DNA from every person in a particular population is examined it is impossible to determine how many people share any one allele. Instead, an evaluation of the rarity of a profile is made with the aid of frequency databases. In other words, a sample population database containing the profiles of 300 of the Irish population is used to estimate how often an allele occurs within the population. As one can see from the above casework example a number of the individual alleles are common to both the victim and the suspect, such as the STR region VWA (DNA on chromosome pair 12) where they both have the same number of repeat units at that locus. On the other hand, at most of the loci tested there is a great deal of variation between the suspect's profile and that of the victim.

1.44 A more detailed account of the significance of a DNA profile match will be given later in this Paper in the particular context of presenting DNA evidence in court.⁶⁹ However, it should be observed that whilst each allele may be relatively common, even those with a rudimentary understanding of statistics will know that when a number of common events are combined the resulting probability of them all happening becomes very small. To take an apt example, the probability of picking the Ace of Spades from a normal pack of 52 playing cards is 1 in 52. If this ace is replaced then the probability of picking the Ace of Hearts is also 1 in 52. However, the probability of picking the Ace of Spades and then the Ace of Hearts is 1 in 2704 (*ie* 1/52 multiplied by 1/52). Accordingly, the more events that are combined the smaller the chance that they will occur. Thus, the chance of picking the four aces from a pack is 1 in 7,311,616. As regards a DNA profile of ten loci, the combination of the individual estimates of the likelihood of each allele occurring in the population will result in a very rare event indeed. Typically, this probability could be in the order of 1 in several billions, which implies that any one profile is likely to be very rare in the general population, if not unique.⁷⁰

(4) Other Methods of Analysis

1.45 So far we have been examining the ‘traditional’ STR profiling technique, which is at present the most potent, but there are two further methods that may be of use in the particular circumstances of a criminal investigation; these are mitochondrial DNA (“mtDNA”) and Y chromosome analysis.

(a) Mitochondrial DNA

1.46 As regards mtDNA analysis, this may be useful in testing charred remains and bones that are too degraded for nuclear DNA

⁶⁹ See paragraphs 9.33-9.44.

⁷⁰ The SGM Plus™ technique, which targets 10 loci, has an average discrimination rate of 1 in a billion – see the UK Forensic Science Service website:
http://www.forensic.gov.uk/forensic/foi/foi_docs//36L_DNA_LCN.pdf.

The SGM profiling kit produced a less discriminating result, as only 6 loci were targeted.

analysis, as well as testing hair shafts found without roots. (It is the roots which contain nucleated cells).⁷¹

1.47 We observed previously that DNA is found in the 46 chromosomes of each nucleated cell.⁷² However, a small amount of DNA is also present outside the nucleus – over 16,500 base pairs long.⁷³ There are many small structures in cells, known as mitochondria, that help provide energy to the cells and which contain their own DNA. The advantage is that there are many copies of mtDNA present in a cell, they are smaller compact molecules with few coding regions and are less prone to degradation.⁷⁴ Where nuclear DNA has degraded and broken down, it may still be possible to find sufficiently intact parts of the mtDNA. But mtDNA is solely maternally inherited and, accordingly, mothers, their children, full siblings, maternal half-siblings, maternal cousins and all on the maternal line will have the same mitochondrial pattern. Also, because mtDNA is much shorter in length than nuclear DNA, there are much fewer features from which to observe differences between individuals. The discriminating power of mtDNA testing is much less than for DNA profiling. The chance of obtaining a match mtDNA sequence between two unrelated individuals is approximately 1 in 100.⁷⁵ This method may be useful in body identification work, but it is incompatible with STR profiling and databasing, in that a profile generated from mtDNA is not comparable with an STR profile generated from a sample with a nucleus.⁷⁶

⁷¹ See Brignon, Bastien and Pfitzinger “Forensic DNA Typing of Single Hair Samples: Mitochondrial DNA Sequencing of Hypervariable Region HV1/HV2” Paper delivered at the First International Conference on the Forensic Human Identification in the Millennium held in London on 23-26 October 1999.

⁷² See paragraph 1.18.

⁷³ See Hageman, Prevett and Murray *DNA Handbook* (Butterworths Canada Ltd 2002) at 35.

⁷⁴ See Tully “Mitochondrial DNA: A Small but Valuable Genome” Paper delivered at the First International Conference on the Forensic Human Identification in the Millennium held in London on 23-26 October 1999.

⁷⁵ See FSS website:
http://www.forensic.gov.uk/forensic/foi/foi_docs/41L_Mitochondrial.pdf.

⁷⁶ *Ibid.*

(b) *Y Chromosome*

1.48 As regards Y chromosome testing, this method is most useful in cases where male DNA is overwhelmed by an excess amount of female DNA. For example, in a rape case it is not uncommon for there to be low levels of spermatozoa mixed with high levels of the victim's cells, whereby only a profile from the victim is obtained. However, by analysing the Y chromosome the male cells may be isolated and the female cells excluded. Whereas a mother passes on her mtDNA to all of her children, a father passes on his Y chromosome only to his sons. On the Y chromosome there are some forensically useful loci, which contain STR and sequence variations. Although Y chromosome testing does not individualise, as there will be no distinction between brothers and fathers and sons, it would give an indication of the source of the sample and perhaps narrow the field to a certain extent.⁷⁷

(5) *Possible Future Developments*

1.49 With the prospect of increasing demand for DNA analysis in a wider range of cases, from murder, rape and burglary to car theft, as well as the insertion of profiles on to databases, large numbers of samples may need to be processed. Accordingly, those operating in this field are continually searching for ways of reducing the processing times and failure rates. The use of capillary electrophoresis and mass spectrometry, allowing sorting of DNA fragments in seconds, and microchip technology, enabling numerous loci to be tested at once, are just some of the possibilities.⁷⁸ Instead of sending scene of crime stains to a laboratory to be analysed, it is envisaged that the police will have hand-held devices containing microchips able to decode DNA on the spot.

⁷⁷ See further Hageman, Prevett and Murray *DNA Handbook* (Butterworths Canada Ltd 2002) at 37-38, Jobling "The Y Chromosome as a Forensic Tool: Progress and Prospects for the New Millennium" and Kloosterman "Application of Y-chromosome Specific STR-typing in Forensic Stains" Papers delivered at the First International Conference on the Forensic Human Identification in the Millennium held in London on 23-26 October 1999.

⁷⁸ See further Hageman, Prevett and Murray *DNA Handbook* (Butterworths Canada Ltd 2002) at 38-39. See also National Institute of Justice "Improved Analysis of DNA Short Tandem Repeats with Time-of-flight Mass Spectrometry" (October 2001) at: <http://www.ojp.usdoj.gov/nij/pubs-sum/188292.htm>.

1.50 Single nucleotide polymorphisms (“SNPs” or “snips”), which are differences at single base pair positions along the DNA strand may also be of use in forensic casework.⁷⁹ SNPs can be measured in very small sections of DNA, which means that analysis is possible even in degraded samples. The UK Forensic Science Service (“FSS”) are currently looking into new ways of automating the forensic analytical process, including the possible use of SNPs as an alternative to using STRs.⁸⁰

1.51 One further technique that is being developed is Low Copy Number (“LCN”), which may enable DNA to be extracted from even previously extracted samples which have failed to yield sufficient levels of DNA to be profiled.⁸¹ This technique can be described as ‘super-sensitive’, but it takes much longer than SGM Plus™ profiling and is currently used in the UK only in the most serious cases. The discriminating power is the same as a SGM Plus™ profile and a LCN profile is also compatible with a SGM Plus™ profile, so can be loaded on to the database. The difficulty with LCN profiling, as with all forensic evidence, is that its significance must be considered carefully. Specifically, because of the sensitivity of the technique, DNA may be detected that is not connected with the crime.⁸²

1.52 These potential developments in profiling technology and their impact on any DNA database are very important and must be kept in mind when considering what options to take, particularly in relation to whether biological samples should be retained.⁸³

⁷⁹ See paragraph 1.27 above.

⁸⁰ House of Lords Select Committee on Science and Technology *Human Genetic Databases: Challenges and Opportunities* (HL Paper 57 20 March 2001) at paragraph 4.24.

⁸¹ See paragraph 1.39.

⁸² See FSS website:
http://www.forensic.gov.uk/forensic/foi/foi_docs//36L_DNA_LCN.pdf

See also Van Oorschot, Szepietowska, Scott, Weston and Jones “Retrieval of Genetic Profiles from Touched Objects” Paper delivered at the First International Conference on the Forensic Human Identification in the Millennium held in London on 23-26 October 1999. Available at:
http://www.forensic.gov.uk/forensic/conference/papers/genetic_profiles.htm.

⁸³ See Chapter 6.

CHAPTER 2 **ADVANTAGES AND DISADVANTAGES OF DNA PROFILING**

Introduction

2.01 This chapter deals with each side of the DNA coin, in that the advantages of establishing a DNA database, as well as the disadvantages are examined. By way of background, in Part A the very first cases involving DNA evidence are briefly outlined, together with some more recent Irish examples. In Part B the purpose and benefits of compiling a database of DNA profiles are examined. Then, in addition to the scientific matters that have been set out in the preceding chapter, in Part C a further prerequisite to recommending appropriate legislation in this field is outlined: namely the nature of the information that may be derived from DNA. Finally, in Part D the main concerns and fears that are expressed regarding the use or misuse of such information are explained.

A A Brief History of the Use of DNA

2.02 Shortly after its discovery by Sir Alec Jeffreys, DNA analysis was used to show that a Ghanaian boy, who had been denied entry into the UK by the immigration authorities, was in fact the son of a woman who was a UK resident as was contended. Accordingly, the boy was entitled to enter the UK.¹

2.03 The first criminal case in the UK in which DNA profiling was put to use was in the prosecution of Robert Melias who was charged and convicted of burglary and the rape of a 45 year old disabled woman.² Semen stains found on the victim's clothing were analysed and compared with Melias's genetic material, revealing a

¹ Jeffreys, Brookfield and Semeonoff "Positive Identification of an Immigration Test Case Using Human DNA Fingerprints" (1986) 317 *Nature* 818-19.

² See Colin Wilson *Written In Blood A History of Forensic Detection* (Grafton Books 1989) at 233.

“match”. On 13 November 1987, he was sentenced to 8 years for rape and 5 years for burglary.

2.04 The next case was the rape and murder of two 15 year old schoolgirls – Lynda Mann in 1983 and Dawn Ashworth in 1986. The rapist’s semen stains from the 1983 rape and murder were preserved (as was usual in such cases) and matched the stains from the second case. A suspect was arrested and charged for the 1986 case as he had been seen close to the scene. Sir Alec Jeffreys was asked to check the profile of the suspect in order to determine whether it matched the scene of crime stains. The results conclusively showed that the suspect could *not* have been the rapist.³ The police therefore had to start their investigation all over again. Because it was probable that the rapist came from a relatively small geographical area in Leicestershire, the police invited all males in the area to give a blood sample – now usually called a ‘mass screen’.⁴ The task involved an analysis of over 5,000 samples, although a large proportion of those were eliminated through the conventional blood grouping method, which was much quicker than DNA analysis at that time. However, 10% of the men had the same blood group as the stain which was suspected of having been left by the perpetrator, so 500 samples had to be profiled – which was extremely time consuming. This mass screen failed to identify a suspect and it was only more traditional methods of investigation that led to the arrest of Colin Pitchfork. A woman overheard her colleague, Ian Kelly, bragging that he had provided a sample of blood in place of Pitchfork. By the time it was confirmed by DNA profiling that Pitchfork’s profile matched the scene of crime stains, he had already admitted to both murders. In 1988 he was sentenced to life imprisonment.⁵

2.05 Prior to 1994, although DNA evidence had been used in criminal cases in Ireland, the biological samples were sent to England

³ It is interesting to note that Sir Alec Jeffreys stated that he had “no doubt whatsoever that [the suspect] would have been found guilty had it not been for DNA evidence”. See: <http://www.forensic.gov.uk/forensic/news/casefiles/pitchfork.htm>.

⁴ See paragraphs 5.106-5.111.

⁵ See – <http://www.forensic.gov.uk/forensic/news/casefiles/pitchfork.htm>. For more details on these cases and other examples in which DNA profiling was first used see Wilson *Written in Blood: A History of Forensic Detection* (Grafton Books 1989) at 231-236.

to be tested using profiling technology. However, since 1994 the biology division of the Forensic Science Laboratory (part of the Department of Justice, Equality and Law Reform) has conducted the DNA casework. This has included analysis in criminal cases and immigration cases and in facilitating body identification at Coroner's inquests.

2.06 DNA evidence has now been used in a number of cases in the Central and Circuit Criminal Courts. The vast bulk have tended to be dealt with on the basis of a guilty plea entered by the accused or the DNA evidence has been merely a component part of the evidence.⁶ For example, in an alleged rape where there is no dispute as to intercourse, but there are opposing positions taken in relation to consent, the DNA evidence extracted from semen stains (if any) taken from the prosecutrix will be readily admitted by the defence. To date there has been no conviction on the basis of DNA evidence alone.⁷

2.07 The first Irish case in which the DNA identification process was challenged as a matter of principle was in *The People (DPP) v Mark Lawlor*.⁸ In 1995, Lawlor was convicted of the sexual assault and murder of Rose Farrelly. The forensic evidence against Lawlor included DNA, from the semen found on the victim's clothing, which matched the DNA profile generated from Lawlor's blood sample. The profile obtained was estimated to occur in the population with a frequency of approximately 1 in 100 million. A lengthy *voir dire* of several weeks was held in which the validity of the DNA profiling, its application, as well as the security and integrity of the samples were challenged. The trial judge permitted the forensic evidence to go to the jury.

2.08 A number of serious crimes have been solved with the use of DNA profiling, which would otherwise not have been solved, including the highly publicised 1979 murder of Phyllis Murphy. During the original investigation when DNA profiling had not been

⁶ O'Donnell "Legal Situation of Forensic DNA Analysis in the Republic of Ireland" 88 (1997) *Forensic Science International* 63.

⁷ See the discussion in *The People (DPP) v Howe Irish Times* 15 October 2003, which is examined in detail at paragraph 9.19.

⁸ Central Criminal Court 2 December 1995, Court of Criminal Appeal 19 February 2001. See Maureen Smyth "DNA in the Dock" [1995] *Lab Link* Volume 2 Issue 6.

developed, blood samples were taken from 52 men to see if the grouping matched samples taken from the victim's body – as explained above, this method is not particularly discriminating.⁹ However, with the advent of DNA profiling, those original samples and scene of crime stains were subjected to fresh analysis. The result was that John Crerar's profile 'matched' that produced from the semen stains taken from the victim's body. Whilst the DNA profile implicated Crerar, other significant corroborative evidence including a false alibi emerged and a jury subsequently found Crerar guilty and he was sentenced to life imprisonment.¹⁰ Crerar is currently appealing his conviction.

2.09 As of the beginning of 2000, 44 unsolved cases were identified and where DNA profiles extracted from the scene of crime stains were likely to belong to the perpetrators the profiles were entered on an "unsolved crime" database – some of which were solved.¹¹ Since 2000 the number of scene of crime stain profiles that have been put on this Forensic Science Laboratory database has increased – as of 16th January 2004 the total number of crime scene profiles stored is in excess of 700. At present DNA casework is concentrated on serious crime, such as murder, rape and armed robbery.

B Purpose and Benefits of a DNA Database

2.10 DNA or genetic databases have been defined as "collections of genetic sequence information, or of human tissue from which such information might be derived, that are or could be linked to named individuals."¹² Included in this definition is not only the genetic information, but also the biological sample (blood, saliva and other bodily fluid). In his reference requesting the Commission to consider

⁹ See paragraph 1.14.

¹⁰ See *Irish Times* 1 November 2002 at 4.

¹¹ McKenna *Implications of a National DNA Database in Ireland*. Submission to the Working Party to Review the Operational Procedure and Working Relationship between An Garda Síochána and the Forensic Science Laboratory 11 January 2000.

¹² House of Lords Select Committee on Science and Technology *Human Genetic Databases: Challenges and Opportunities* (HL Paper 57 20 March 2001) at paragraph 3.3.

the establishment of a DNA database, the Attorney General asked the Commission to consider, in particular, what classes of DNA profiles would make up the database. This requires the Commission to consider the establishment of a repository of forensic DNA profiles generated from biological samples, which can be electronically stored for comparison with casework evidence profiles – in other words, those generated from biological material found at a scene of crime. In addition, the use, storage and retention of the original biological samples are also issues that must be considered.

2.11 From the early investigation of crimes – particularly violent crimes, such as murder and rape – investigators have collected evidence from the scene of crime (both primary and secondary scenes) and the victim in order, in broad terms, to make out a ‘profile’ of the perpetrator. In addition, once the perpetrator has been caught, then material, such as clothing, and objects, such as shoes, glasses and ornaments, and biological samples and fingerprints taken from that person are retained, as are statements and confessions, for evidential purposes and for the record. Evidence and information of this type has been routinely preserved and retained by law enforcement agencies for a number of reasons, including:

- (i) To link together numerous crimes, such as by the correspondence in the method used to commit them or by marks/stains left at the scene;
- (ii) To assist law enforcement agencies to identify the perpetrator of a current crime;
- (iii) To enable those who have previously been convicted of an offence to be readily identified and recaptured in the event that they re-offend, so that recidivism is reduced;
- (iv) To preclude the use of false or assumed identities and thus to ensure that an offender’s previous crimes are taken into account when sentence is being considered in respect of a further offence.

2.12 The most common form of data on offenders until now has been fingerprint records and photographs together with other vital statistics or ‘Bertillonage’ measurements, such as height and eye colour. The storage of genetic material and information derived from such material, however, differs from these conventional methods in a number of ways. DNA itself holds infinitely more information than

fingerprints, such as predictive health information, and kinship with other persons.¹³ Before tackling these issues and in consequence of the differing considerations which attach to the collection, storage and use of genetic information, it is sensible first to try to assess the advantages of profiling and subsequently storing these profiles on the database.

2.13 It is clear that DNA profiling has become an increasingly powerful tool in criminal investigations. This is demonstrated by the examples given above,¹⁴ of perpetrators of serious crimes being brought to justice who might otherwise have remained free to commit further offences. Equally, the storage of DNA profiles on a database is considered to be particularly useful as an intelligence tool in combating current, as well as future, crime by:

- (i) Identifying links between crimes, such as in the case of, for example, stains left at scenes of crime by serial offenders;
- (ii) Allowing for the rapid exclusion from the ambit of the investigation of suspects who are already on a database and whose profiles do not match;
- (iii) Facilitating ‘cold hits’ - that is where a stain is matched with a profile of the person on the database who was not a suspect.

Thus, where a stain is recovered from a scene of crime then comparison of the profile generated from the stain with those on a database of convicted offenders enables the investigating authorities to identify relatively quickly if any of those individuals can be implicated in the current investigation. Moreover, it is axiomatic that if an investigation can be concentrated on a primary suspect from the outset, the net need not be cast too widely and in consequence resources which would otherwise have to be expended on time consuming door to door enquiries may not be required. A further advantage to the storage of DNA profiles is that some criminals will

¹³ As regards information shared with biological relatives an issue that needs to be addressed is to what extent a relative may be implicated in a crime – see further paragraphs 7.40-7.47.

¹⁴ See paragraphs 2.06 and 2.08.

desist from criminal activity for fear of detection through the comparison and exchange of such data.¹⁵

2.14 A popular example that is often advanced¹⁶ as encapsulating the benefits of DNA profiling and the establishment of a profile database can be given: a young woman is attacked and raped in her home by a burglar. A local man who was seen in the area at the time of the offence and who has a previous conviction for sexual assault is arrested. The DNA profile of the assailant is generated from the seminal stains on the victim's vaginal swabs. The profile is checked against a database containing the profiles of convicted offenders, which includes the primary suspect's profile. The original suspect is eliminated, but a 'hit' or 'match' is found against another man whose profile was entered and retained following an earlier conviction. This is what is referred to as a 'cold hit', meaning that the person matched was never a suspect for this offence until the match occurred. One might surmise that this example is a chance occurrence, but this is not the case. Since the introduction of the DNA database in the UK in 1995, scores of 'cold hits' in stranger rape cases have given useful pointers as to the person on whom the investigation should focus and many cases have been solved in consequence.

2.15 The UK operates a 'National DNA Database'¹⁷ and holds profiles from individuals suspected of, cautioned in respect of, or

¹⁵ Although the countervailing argument is that criminals may become more adept at preventing their biological material being left at the scene of crime.

¹⁶ See McKenna "The Value of a National DNA Database" (1998) *Forensic Science News* Issue 3.

¹⁷ See paragraphs 2.19-2.20 for an explanation of the term "National DNA database". A point of terminology must also be emphasised here: whilst the DNA database is a UK database comprised of profiles generated in relation to investigations in England and Wales, Scotland and Northern Ireland, in later sections of this Consultation Paper we refer to the law regarding the taking of samples and the retention of profiles and samples as either that governing England and Wales, Scotland or Northern Ireland because separate provisions exist: namely, *Police and Criminal Evidence Act 1984* (which contains separate sections applicable in Northern Ireland) and *Criminal Procedure (Scotland) Act 1995*. See further Home Office *Circular on the Cross Searching of DNA and Fingerprint Databases* HOC (7 November 1996 47/1996).

convicted of a “recordable offence”,¹⁸ as well as those derived from scenes of crime. The database can be interrogated (or searched) relatively quickly. On the 15 July 2003 the number of profiles stored on the database reached the 2 million mark and the number of crime scene profiles was 180,000.¹⁹ As of December 2003, the database contained 2.1 million criminal justice profiles and 218,000 profiles derived from crime scenes.²⁰ It is expected that there will be approximately 2.4 million profiles of individuals on the database by 31 March 2004.²¹ It is the British Government’s aim to ensure that the profiles of all active criminals are held on the database.²² There have been various statistical representations advanced to illustrate the effectiveness of the database, such as:

- (i) the database provides the police with approximately 1,000 ‘cold hits’ on a weekly basis - in other words, the potential sources²³ of 1,000 profiles taken from crime scenes are identified through database searches;²⁴

¹⁸ Originally the *Police and Criminal Evidence Act 1984* (“PACE”) set the threshold at the level of a ‘serious arrestable offence’, but this has now been down-graded by subsequent amendment to a ‘recordable offence’. A recordable offence is one which is potentially punishable with imprisonment, and certain other specified non-imprisonable crimes such as loitering or soliciting for the purposes of prostitution, possessing a weapon with a blade or a point in a public place or tampering with a motor vehicle. These threshold criteria will be discussed further at paragraphs 4.16-4.22 below.

¹⁹ News in Brief “DNA Landmark” *The Times* 15 July 2003. FSS Fact Sheet on the National DNA Database. Available at: http://www.forensic.gov.uk/forensic/foi/foi_docs/32L_NDNAD.pdf.

²⁰ See the press release of the FSS on the 18 December 2003. Available at: <http://www.forensic.gov.uk/forensic/entry.htm>.

²¹ See the FSS *The National DNA Database Annual Report 2002-2003* at 21. Available at <http://www.forensic.gov.uk/forensic/entry.htm>.

²² See – the FSS website at <http://www.forensic.gov.uk/forensic/entry.htm>. Also the FSS *The National DNA Database Annual Report 2002-2003* at 3.

²³ ‘Potential’ sources is used here so as to avoid perpetuating the ‘prosecutor’s fallacy’, which will be addressed in the specific context of presenting DNA evidence in court, at paragraphs 9.37-9.38.

²⁴ See Willis “DNA in the Investigation of Crime” (March 2003) *Communiqué: An Garda Síochána Management Journal* 3 at 7.

(ii) the police have recorded a 40% success rate in matching DNA found at the scene of a crime to profiles held on the database;²⁵

(iii) as of January 2001 there were around 100,000 matches reported from the database;²⁶

(iv) the Home Office and the FSS claim that in a typical month the database links suspects to 15 murders, 31 rapes and 770 car crimes;²⁷

(v) In 2002-03 each crime detected with DNA led to 0.8 other crimes being detected and the Home Office estimated that 50% of detections led to convictions, 25% of these resulted in custodial sentences and each custodial sentence prevented a further 7.8 crimes being committed.²⁸

It is evident from this that the storage of DNA profiles on a database has been extremely effective in combating crime.

2.16 There have been a number of notable successes in which crimes have been solved, some many years after they were committed, including:

(i) The murder of 14 year-old Roy Tutill in Surrey in 1968. The development in scientific techniques enabled a DNA profile of the suspected killer to be generated from stains found on Roy's clothing. The profile was entered onto the database in 1996. Three years later, Brian Field was stopped by the police on a drink-driving offence. A routine mouth swab was taken and the resulting profile was entered on the database. The profile matched against the 1968 scene of crime stain profile. In November 2001,

²⁵ See the FSS *The National DNA Database Annual Report 2002-2003* at 3. Available at <http://www.forensic.gov.uk/forensic/entry.htm>.

²⁶ House of Lords Select Committee on Science and Technology *Human Genetic Databases: Challenges and Opportunities* (HL Paper 57 20 March 2001) at paragraph 4.23.

²⁷ News in Brief "DNA Landmark" *The Times* 15 July 2003. See also FSS Fact Sheet on the National DNA Database. Available at: http://www.forensic.gov.uk/forensic/foi/foi_docs/32L_NDNAD.pdf.

²⁸ See the FSS *The National DNA Database Annual Report 2002-2003* at 26. Available at <http://www.forensic.gov.uk/forensic/entry.htm>.

having pleaded guilty to murder, Field was sentenced to life imprisonment;²⁹

(ii) The rape and murder of 14 year-old Marion Crofts in Hampshire in 1981. A laboratory microscope slide containing the samples collected from Marion's body lay untouched for 20 years. In 1999 the FSS used DNA Low Copy Number³⁰ to generate a full profile of the suspected perpetrator from stains found on some of her clothing. The profile was checked against the database and in August 2001 a match was found after Tony Jasinskyj was arrested for another crime and his DNA profile was routinely loaded onto the database. Jasinskyj was convicted and sentenced to life imprisonment;³¹

(iii) The rape of a 21 year-old *au pair* in North London in 1989. The profile generated from the scene of crime stain was stored on the database. Nick Keall, a minicab driver, was arrested for assault on Christmas Day 2001. A sample was taken from him and his profile was run against the database and a 'match' was reported with the stain from the crime scene of the rape. Keall was convicted and sentenced to eight years imprisonment.³²

2.17 It was reported that the Metropolitan Police were reopening more than 1,500 unsolved rape cases using new forensic techniques to elicit evidence.³³ Improvements in DNA technology has meant that previously unobtainable samples on clothes or at the scene of the rapes could now be examined and checked against the DNA database. So far, forensic experts have identified the DNA profiles of 40 men in reviews of 330 unsolved rape cases.³⁴

²⁹ See FSS *Annual Report and Accounts 2001-2002* (16 July 2002) at 12.

³⁰ See paragraph 1.51.

³¹ See – the FSS website at:
http://www.forensic.gov.uk/forensic/news/casefiles/2002_07_marion.htm.

³² “Man jailed for rape 14 years after attack” *The Times* 5 August 2003.

³³ 1,544 unsolved rapes were committed between 1987 and 1999.

³⁴ See “Yard hunts 40 rapists after DNA checks” *Evening Standard* 10 February 2004.

2.18 In 1995 the New Zealand police force and the Institute of Environmental Science Research (“ESR”) started to create a DNA database using the same technology as that developed by the FSS in the UK. Initially profiles were collected from convicted offenders and volunteer donors. In 1996 the *Criminal Investigations (Blood Samples) Act 1995*³⁵ came into force permitting the authorities to take samples, and since 1998 DNA profiles from scene of crime samples have been entered onto a Crime Sample Database. In its first few years in operation it yielded impressive results: of all DNA profiles loaded from unsolved cases, approximately 32% matched an individual profile present on the national DNA database and approximately 14% of profiles generated from scene of crime stains in unsolved cases, when loaded, matched other crime scene profiles contained in the Crime Sample Database.³⁶ In more recent reviews, the results are even more impressive. Of all DNA profiles from unsolved crimes inserted onto the database, approximately 50% of these match a profile present on the national database. Approximately 30% of profiles generated from scene of crime stains in unsolved cases, when loaded, match other crime scene profiles contained on the Crime Sample Database.³⁷

2.19 Many other countries have also set up ‘national’ DNA databases for use in criminal investigations: these include Denmark, Austria and Germany. A point concerning the “forensic vernacular” is that the term ‘national’ DNA database is used to distinguish this from a State or regional database, such as those operated in the various states or territories of certain federations like Australia.

2.20 A more important distinction is that the use of the phrase ‘National DNA Database’ is not intended to connote what is known as a “comprehensive database”. This significant term involves the collection and insertion on to a database of forensic DNA profiles

³⁵ The title of this Act has been changed to the *Criminal Investigations (Bodily Samples) Act 1995* by virtue of section 3 of the *Criminal Investigations (Bodily Samples) Amendment Act 2003*.

³⁶ Harbison, Hamilton and Walsh “The New Zealand DNA Databank” Paper delivered at the First International Conference on the Forensic Human Identification in the Millennium held in London on 23-26 October 1999.

³⁷ See the website of the ESR at:
http://www.esr.cri.nz/features/esr_and_dna/databank/index.htm.

from the whole population. This issue will be examined in due course.³⁸

2.21 What can be gleaned from the discussion in the preceding paragraphs is that DNA profiling and the retention of the profiles on a database is very useful in the investigation and prevention of crime. Because of the advantages of DNA profiling and the subsequent retention of these profiles on a database as described here, it is clear that the development and the operation of DNA databases is perhaps the most significant breakthrough in the investigation of crimes since the introduction of fingerprinting. However, before embracing the concept of the creation of a national database with open arms, we must examine the countervailing considerations and concerns entailed in profiling and the creation of a database: the perceived advantages for society in operating an intelligence DNA database to fight crime should be weighed against the perceived dangers to civil liberties that the forensic use of genetic information presents.

C Personal Genetic Information: the Context

2.22 Whenever genetic information is discussed, strong feelings are aroused, which epitomise the general public's sensitivity and anxiety on genetic issues. People feel that genetic information is particularly private and that it should not be disclosed. Genetic information is seen as a special category of information, even more sensitive than traditional medical records, which may contain the most intimate details concerning an individual's health. The UK's Human Genetics Commission ("HGC"), in its review of the use of personal genetic information, identified several factors which might seem to distinguish genetic information from other forms, as follows:

“(1) the almost uniquely identifying nature of some genetic information, including its capacity to confirm, deny or reveal family relationships;

(2) the fact that genetic information could be obtained from a very small amount of material (such as skin, saliva, blood spot or hair), possibly secured without the consent of the person;

³⁸ See paragraphs 5.112-5.114.

- (3) the predictive power of some genetic information, especially the predictive power across generations of certain rare genetic diseases;
- (4) the fact that genetic information may be used for purposes other than those for which it was originally collected;
- (5) the interest which some genetic information has for others, including relatives who might be affected by it themselves, insurers and employers;
- (6) the importance that genetic information may have for establishing susceptibility both to rare inherited diseases and the effectiveness of some treatments;
- (7) a further relevant factor is that of the stability of DNA which can be recovered from stored specimens or even archaeological material after many years.”³⁹

2.23 Almost all information concerning one’s physical characteristics and health is genetic: features such as ethnicity, height and eye colour are inherited. Genetic information may be distinguished from other personal information, such as age, occupation, address, or creditworthiness; however, not all genetic information is especially sensitive. There are many forms of genetic information, some of which would not be considered particularly personal or ‘private’. Indeed, the HGC recognised that there are different categories of genetic information, which may range from non-sensitive to sensitive.⁴⁰ The different types of genetic information may be summarised as falling into the following categories:

- (i) The genotype, which provides at a fundamental level details of DNA or protein that is inherited from both parents;
- (ii) The phenotype, which is the observable outcome in terms of physical or physiological characteristics, such as eye colour and blood pressure;

³⁹ Human Genetics Commission *Inside Information: Balancing Interests in the use of Personal Genetic Data* (May 2002) at 30. Available online at: <http://www.hgc.gov.uk/insideinformation/index.htm#report>.

⁴⁰ *Ibid* at 25.

(iii) Family information, which shows the pattern of inheritance of different phenotypes.⁴¹

2.24 Genotype information may be obtained only through direct analysis of DNA, whereas phenotype information may be acquired in many different ways, such as by scientific tests or by visual examination.⁴² As regards the phenotype information, one may say that much of this type of genetic information is evident from one's appearance and not what is generally deemed to be strictly private. But more precise genetic information, such as that which may be obtained through scientific tests, may be regarded as sensitive, for example the likelihood of the inheritance of a genetic disorder, such as cystic fibrosis or Huntington's chorea.⁴³ Plainly information about serious inherited diseases is of an extremely sensitive nature, whereas eye colour or hair colour is not so sensitive.⁴⁴ By way of analogy, information about one's age and occupation, although personal, would not be considered to be particularly private and confidential – aside from the fact that this information is widely known and disseminated. Accordingly, different forms of genetic information may legitimately be approached from various perspectives and treated in different ways.

D Concerns and Fears

2.25 DNA profiling and the storage on databases of DNA profiles, as well as the use of DNA databases, are so different in character from traditional fingerprinting and storage of records because DNA itself contains considerably more and much more

⁴¹ Human Genetics Commission *Inside Information: Balancing Interests in the use of Personal Genetic Data* (May 2002) at 26. Available online at: <http://www.hgc.gov.uk/insideinformation/index.htm#report>.

⁴² This is of relevance not only here but also when we come to consider the issue of what may legitimately be inferred from a biological sample that has been left at a scene of crime, at paragraphs 7.03-7.14 below.

⁴³ Although some genetic conditions may also be apparent through visual examination, such as albinism.

⁴⁴ A point worthy of note is that insurers have been asking for loosely genetic information for years, such as whether one's grandparents or parents have or has cancer, what age they died at, and whether any medical conditions run in the family – see further O'Neill *Autonomy and Trust in Bioethics* (Cambridge University Press 2002) at 103.

personal information than the number and placement, for example, of whorls and ellipses on the right index finger. Accordingly, it has further been suggested because of this that, biological samples should not be retained in storage and that genetic information derived from those samples should also not be kept on databases. At first glance this view appears particularly compelling. However, these concerns have often been conflated in respect of the two broadly distinct topics of genetics and forensic profiling. In other words, the important distinction between the biological *sample* and the forensic *profile* has been overlooked. As one commentator observes, this has stemmed in the main from a poor understanding of the science involved and a lack of precision in characterising the technology, such as by proceeding on the erroneous basis that a DNA profile contains rather more information than it actually does.⁴⁵ It is hoped that the explanation of the science involved in DNA profiling contained in the previous chapter together with the analysis in later parts of this Paper provides a more secure grounding for discussion on this crucial topic.⁴⁶

2.26 The distinction between the biological *sample* and DNA *profile* is important and will be reiterated throughout this Paper, but it is now appropriate to highlight the principal concerns which are usually voiced in relation to genetic information generally, which include that:

- (i) DNA testing may reveal the presence of a socially stigmatising genetic disorder or unveil behavioural traits, such as the rape or murder gene (*ie* behavioural genetics);
- (ii) testing may disclose information about significant future episodes and possibly shameful events, such as susceptibility to disease;
- (iii) DNA testing may also divulge information that an individual has chosen to keep confidential, such as sexual orientation;
- (iv) As to how information of the type suggested in (i) – (iii) might be used, it might be disclosed to other government departments or even private parties, such as

⁴⁵ Burk “DNA Identification Testing: Assessing the Threat to Privacy” [1992] 24 *University Toledo Law Review* 87 at 88.

⁴⁶ Particularly at paragraphs 2.31 and 5.06-5.09.

employers or insurance companies. The fear is that insurers or employers could use genetic information to deny cover or employment – in effect genetic discrimination;

(v) Beyond this is the fear of the possibility that DNA testing may be misused in some way – the oft cited examples are in a degenerated eugenics movement and Nazi Germany's racial hygiene programme, a murderous genocidal 'ethnic cleansing' campaign on a massive scale.⁴⁷

2.27 The science of DNA has been examined and it was explained that the biological sample will often contain thousands of DNA molecules, being multiple copies of an individual's genetic 'blueprint'.⁴⁸ By way of illustration, if this sample was made available to insurers, employers or behavioural geneticists and subjected to testing, then the privacy of the person who is the source of the sample would be seriously violated, as conditions or proclivity to illness may be revealed, which potentially could lead to discrimination and stigmatisation. Moreover, from a blood *sample* the presence of HIV/AIDS or a genetic disorder could be detected. Indeed, access to a collection of biological samples would no doubt be of interest and value to a variety of research bodies. This is not a disapproval of this type of research, which may be beneficial, but access to and disclosure of a person's genetic data could equally have harmful consequences. The essential point is that individual autonomy suggests that an individual's genetic information should only be used for the purpose for which it is given or taken. Even on this basis there is unease and distrust in relation to informed consent and there are many unresolved ethical issues which arise in medicine, science and biotechnology generally.⁴⁹

2.28 The 'private sector fears' may be relatively easily safeguarded against by denying access to the samples (as well as the results of any testing), imposing a duty of non-disclosure and providing severe punishment for breach of confidentiality and misuse. The 'public sector fears' are not as easily safeguarded. The organs of

⁴⁷ On which see Proctor *Racial Hygiene: Medicine Under the Nazis* (Harvard University Press 1987).

⁴⁸ See paragraphs 1.18-1.26.

⁴⁹ See further O'Neill *Autonomy and Trust in Bioethics* (Cambridge University Press 2002).

the state may themselves be the custodians of the biological samples (whether on a long-term basis or not) and might subject them to testing in order to find out more about citizens with potentially stigmatising and discriminatory repercussions.

2.29 An example of the potential misuse of genetic information is provided by the “XYY syndrome” incident during the 1960s and 1970s, where genetic researchers discovered a high occurrence of men in mental-penal institutions (secure psychiatric facilities) who carried an extra Y chromosome. The correlation between an extra Y chromosome and incarceration was the subject of much discussion and debate and a mass screen was conducted to identify carriers of an extra Y chromosome. Those identified were subjected to what has been described as an arguably “stigmatising study of their behavioural and social characteristics.”⁵⁰ Such studies also result in a concentration on genetic factors, which cannot be altered, as the cause of crime and ignore the environmental factors involved, which could in fact be eliminated.⁵¹ Any repeat of this type of ‘study’ on the basis of more modern genetic testing, would be undesirable.

2.30 Incidents such as this bring to mind the film *Gattaca* released in 1997.⁵² This film envisages a future where genetic engineering enables parents to screen embryos before implantation for the purpose of ensuring that their children will possess no genetic imperfections. While this film is perhaps rather far-fetched, future developments in genetic technology could in fact make it a possibility. In reality, a version of this situation is already happening with the advent of IVF screening. The Australian Law Reform Commission in its Report on genetic privacy adverted to the undesirability of such a situation arising in reality.⁵³

2.31 One point which must be emphasised before addressing the actuality or potentiality of these fears in practice, is that at present we

⁵⁰ On which see Burk “DNA Identification Testing: Assessing the Threat to Privacy” [1992] 24 *University Toledo Law Review* 87 at 99-100.

⁵¹ See Milunsky and Annas *Genetics and the Law* (Plenum Press 1976) at 79-80.

⁵² A Niccol *Gattaca* (1997) Columbia Pictures.

⁵³ Australian Law Reform Commission and the Australian Health Ethics Committee *Report – Essentially Yours: The Protection of Human Genetic Information in Australia* (ALRC 96, 2003) at paragraphs 4.1-4.3.

are only beginning to be able to interpret DNA. For example, we know that if an individual's fourth chromosome pair contains a particular sequence that individual will develop Huntington's chorea. But our understanding is not always as clear as this because it is often the case that genes work in combinations and the result is such that we may only be able to say that this gene or combination of genes are probabilistically linked to specific diseases or traits. For these reasons, one may legitimately assert that the threat to privacy through the collection, use and storage of genetic information is only as great as the extent to which there is the capacity to understand the information. On the other hand, however, it is fair to say that our capacity to interpret genetic information has accrued very rapidly and this is likely to increase in the future, so we must bear the potentiality of these fears in mind when considering this topic.

2.32 Thus, throughout this Paper in proposing reform of the law, the Commission has tried to take into account not only the present state of science and the forensic techniques flowing from it, but also possible developments in the future. Unfortunately, this complicates presentation and results in the examination of potential problems that may never in fact arise. Equally, we may fail to predict certain consequences. In any case, it seems unrealistic not to be aware that there may be future scientific developments which would impact on the law in this field. It is of course open to the legislators to respond that they will legislate for the here and now and will make amendments if and when scientific change makes these necessary. This, too, seems to be a realistic approach. But sometimes science moves more rapidly than legislation and in ways that may make "today's certainties less obvious tomorrow and tomorrow's discoveries perhaps more challenging to lawmakers than today's knowledge might seem."⁵⁴ Accordingly, there is an attempt to set out both the position as at present and to highlight any potential developments which may impact on the choices that could be made in this field.

⁵⁴ Office of the Victorian Privacy Commissioner *Submission to the Victorian Parliament Law Reform Committee on its Inquiry into Forensic Sampling and DNA Databases* (17 July 2002) at 34-35. Available at: <http://www.parliament.vic.gov.au/lawreform/>.

CHAPTER 3 INDIVIDUAL RIGHTS AND DNA

Introduction

3.01 There are two categories of persons who may be subjected to scientific testing: those mandatorily put through testing procedures and those voluntarily tested. These categories are important in framing our recommendations in Chapter 5 but it may be open to question whether one can so readily distinguish between the two categories. If a particularly heinous murder and rape is committed in a discrete geographical area and the only evidence is the DNA profile extracted from semen stains found on the victim, the Gardaí may decide to conduct an intelligence (mass) screen in that area in order to identify the perpetrator or simply narrow the pool of suspects by eliminating much of the population from the investigation.¹ Those requested to provide a sample may include both individuals suspected of committing the offence (perhaps because of a previous conviction and/or registration on the sex offenders register) and those who fall outside the shadow of suspicion. Regardless of categorisation, however, the personal rights of all requested (or in default forced) to provide a comparator sample may be in jeopardy.

3.02 Potentially at least three individual rights may be affected: first, the right to (genetic) privacy; secondly, the right to bodily integrity; and thirdly, the privilege against self-incrimination. The extent to which these rights are infringed and in consequence need to be justified so as to be the subject of legitimate derogation will be examined here. This chapter can be broadly described as dealing with general principles and it is later that we deal with the application of those principles to some practical aspects of DNA profiling and databasing: under what conditions samples may be obtained and from whom and when can the profiles be retained (Chapter 5) and whether the samples can and should be retained indefinitely (Chapter 6). As regards this chapter, in Part A there is a brief examination of the right

¹ See paragraph 5.106.

to privacy, the extent to which it is infringed by the storage and retention of information about an individual and in what circumstances there may be a legitimate derogation from the right. In Part B the right to bodily integrity is considered in the context of DNA sampling and how, in general terms, this right may involve scrutiny of powers of the Gardaí in this context. In Part C we address the possible application of the privilege against self-incrimination in this situation. In this regard, we must also consider the interests of society in the prevention and detection of crime. The rights of third parties including the victim's rights to have their attackers apprehended must also be considered. Therefore, a balance must be struck between the suspect's personal rights and the interests of society and the victim's rights. The principles which will frame how such a balance will be struck will be considered in this chapter.

3.03 In this chapter particular reference is made to the case law flowing from the Constitution, with which any legislation must be lawfully compliant and the European Convention on Human Rights ("ECHR"), which has recently been given effect in domestic law by the *European Convention on Human Rights Act 2003* ("ECHR Act 2003").² Section 2 of the ECHR Act 2003 imposes an obligation on the Irish courts to interpret, in so far as is possible, statutory provisions and rules of law compatibly with the State's obligations under the ECHR. Correspondingly, any legislation recommended in this field must be consistent with the ECHR. Moreover, section 3 of the ECHR Act 2003 imposes an obligation on the State and every organ of the State to exercise its functions in a manner compatible with the ECHR: a facet which will fall to be considered when addressing the powers of the authorities in this field.

A The Right to Privacy

3.04 The right to privacy, although a concept that is notoriously vague,³ encapsulates the notion that individuals should be free to determine for themselves what information to disclose to others and also that individuals should be free to go about life without

² The ECHR Act 2003 came into effect on the 31st December 2003.

³ See Michael "Privacy" in McCrudden and Chambers (eds) *Individual Rights and the Law in Britain* (Oxford University Press 1994) at 265. See further Feldman *Civil Liberties and Human Rights in England and Wales* (Oxford University Press 2002) Part III: Privacy.

unnecessary intrusion by the State. The right to privacy is plainly violated when people access genetic or other information about a person who does not want to reveal private matters or to be subjected to unnecessary intrusion into their personal affairs. However privacy is not an absolute right as our discussion of the Constitution and the ECHR below will show. Two statements of principle are instructive in the specific context of DNA evidence.

3.05 First, in its submission to the Victorian Parliament Law Reform Committee Inquiry into forensic sampling and DNA databases, the Office of the Victorian Privacy Commissioner stated that:

“Privacy and respect for human dignity need not be abandoned when balancing civil liberties with community safety. In many ways, privacy principles will enhance the integrity and legitimacy of DNA profiling by limiting collection to the *minimum necessary* to achieve the legitimate aims of law enforcement agencies, requiring its use to be in accordance with these aims, demanding secure storage of DNA material, and requiring its destruction or de-identification when the information is not needed.”⁴
(Emphasis added)

In this and the following chapters consideration is given to how a fair and proportionate balance can be struck between, on the one hand, the privacy rights of the person who is the source of a DNA sample and the profile generated from that sample and, on the other hand, the wider societal interests, such as the prevention of disorder and crime and the protection of the rights of others.

3.06 Secondly, in a case concerning the admissibility of DNA evidence Lord Steyn, made the following comment:

“It must be borne in mind that respect for ... privacy ... is not the only value at stake. The purpose of the criminal law is to permit everyone to go about their daily lives without fear of harm to person or property. And it is in the interests

⁴ Office of the Victorian Privacy Commissioner *Submission to the Victorian Parliament Law Reform Committee on its Inquiry into Forensic Sampling and DNA Databases* (17 July 2002) at 2. Available at: <http://www.parliament.vic.gov.au/lawreform/>.

of everyone that serious crime should be effectively investigated and prosecuted. There must be fairness to all sides. In a criminal case this requires the court to consider a triangulation of interests. It involves taking into account the position of the accused, the victim and his or her family, and the public.”⁵

Although enunciating general principles in the particular context of the criminal trial, Lord Steyn expresses the fundamental tension that exists between competing rights in this field and the need for a system of criminal justice to evolve so as to ameliorate these conflicts in a fair and proportionate way. While our primary concern is with the investigatory stage in the detection of a crime, it is important to make recommendations that address and seek to balance these underlying tensions in a fair, constitutional and Convention compliant manner.

(1) The Constitution

3.07 In Irish law the right to privacy is an unenumerated right guaranteed by Article 40.3.1 of the Constitution, first recognised in *McGee v Attorney General*,⁶ albeit in the particular form of marital privacy and then in *Norris v Attorney General*.⁷ Suspects of crimes and prisoners also enjoy this right to privacy, as was recently confirmed in *The People (DPP) v Davis*,⁸ a case concerning a prisoner in respect of whom several photographs were published depicting him in handcuffs and chained to a warden during his trial. In *Kennedy v Ireland*⁹ the plaintiffs complained that their right to

⁵ *Attorney-General's Reference (No 3 of 1999)* [2001] 2 AC 91 at 118 *per* Lord Steyn.

⁶ [1974] IR 284. It was held in this case that a statutory provision, which prevented a married woman from using contraceptives, which she required as a result of her medical condition was unconstitutional as it breached her right to marital privacy.

⁷ [1984] IR 36. It was held by the Supreme Court in this case that there was an individual right to privacy. However, it was also held that this right could be limited in the interests of the common good. A majority of the court accepted that the right to privacy could justifiably be limited by the criminalisation of homosexuality. The European Court of Human Rights reached a different conclusion on the case in *Norris v Ireland* [1991] 13 EHRR 186.

⁸ [2001] 1 IR 146.

⁹ [1987] IR 587.

privacy had been infringed because of unjustifiable telephone tapping by the State. In ruling in favour of the plaintiffs, Hamilton P stated:

“Though not specifically guaranteed by the Constitution, the right of privacy is one of the fundamental personal rights of the citizen which flow from the Christian and democratic nature of the State. It is not an unqualified right. Its exercise may be restricted by the constitutional rights of others, or by the requirements of the common good, and it is subject to the requirements of public order and morality.”¹⁰

Thus, there may be a permissible derogation from the right to privacy, as with many constitutional rights, on certain justifiable grounds. Broadly speaking, the Constitution states that this right need only be protected “as far as practicable.” In balancing the competing interests of a person’s privacy rights and the need to detect and prevent crime with respect to the establishment of a DNA database, a proportionality test should be adopted. Such a test was applied in *Kane v Governor of Mountjoy Prison*.¹¹ This case concerned surveillance by the State and is the closest jurisprudence we have to the issues at hand in this Paper. This case advocates the use of a proportionality test, in a manner similar to its use in the European Court of Human Rights, to weigh up the competing interests of public order and the protection of privacy.

3.08 In this regard, we should also discuss briefly the hierarchy of constitutional rights enunciated in *The People (DPP) v Shaw*.¹² This arises when two constitutional rights are in conflict. A decision of priority must be made as to which constitutional right prevails. Kenny J stated here that any such conflict should be resolved by having regard to the terms of the Constitution, the ethical values which all Christians living in the State acknowledge and accept and the main tenets of our system of constitutional parliamentary democracy. In this case, he accepted that the right to life of the potential/actual victim of crime prevailed over the accused’s right to personal liberty. However, the majority accepted that such a priority of constitutional rights should only be applied where the notion of a harmonious interpretation of the Constitution was not possible. The

¹⁰ *Ibid* at 592.

¹¹ [1988] I.R. 321.

¹² [1982] IR 1.

creation of a DNA database may lead to a conflict between the defendant's constitutional rights and those of the victims and the interests of society generally. However, it is only if a harmonious interpretation of these rights is not possible that the hierarchy of constitutional rights should be applied. The principle of proportionality must firstly be used in an attempt to balance these rights before a hierarchy of constitutional rights will be adopted.

(2) *European Convention on Human Rights*

3.09 It has been suggested that both the taking and retention of personal information, such as fingerprints, photographs and DNA samples and profiles, impinges upon privacy and therefore raises issues under Article 8 of the ECHR, which guarantees the right to respect for private and family life, home and correspondence.¹³ Although the case law of the European Court of Human Rights ("ECtHR") (and until it was abolished in 1998 the Commission ("ECmHR")), is still evolving in this field, there have been clear indications that such activities as searches of the person,¹⁴ the taking of personal details,¹⁵ photographs of suspects and more recently the dissemination of CCTV footage interferes with the right to respect for privacy.¹⁶

3.10 So too does the holding of information about an individual's private life in the files held by state authorities or in police registers

¹³ Starmer "Police Powers and the European Convention on Human Rights". Available from: <http://www.doughtystreet.co.uk>.

¹⁴ *Funke v. France* (1993) 16 EHRR 16.

¹⁵ In *Rotaru v. Romania* Application No. 28341/95 Judgment of 4 May 2000, it was held that the right to respect for private life is engaged when a public authority seeks, collects, stores, processes, compares or disseminates personal information or opinions about, a data subject, even if the information concerned is in the public domain.

¹⁶ On the dissemination of CCTV footage, the recent judgment in the case of *Peck v UK* (2003) 36 EHRR 41 is of interest. In this case CCTV footage of the applicant's attempted suicide was disclosed to media organisations in order to demonstrate the effectiveness of CCTV. However, the applicant's identity was not masked and the ECtHR held that the disclosure amounted to a serious violation of the applicant's respect for privacy.

amount to an interference with the right.¹⁷ To be in accord with the ECHR, these interferences must be justifiable under Article 8(2):

“There shall be no interference by a public authority with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others”.

3.11 Thus in order for a form of DNA database to be justified under Article 8(2), three requirements must be satisfied. Firstly, any interference must be in accordance with law.¹⁸ This requires that the law should be accessible enough for the individual to know of the legal rules which must be applicable to any case. It must also be drafted with sufficient precision to allow a person to regulate his conduct, foreseeing the consequences of his actions. Secondly, it must be demonstrated that the interference was adopted for one of the purposes specified in Article 8(2).¹⁹ The retaining of a DNA database aims to achieve the legitimate purposes listed in Article 8(2) of maintaining national security, public safety and the economic well-being of the country, preventing public disorder and crime, protecting health and morals and protecting the rights and freedoms of others. If we concentrate on “preventing crime” only, Article 8(2) seems only to allow the State to justify interferences which are intended to prevent crime and not those which aim to solve previous crimes. However, as there may be a risk that crimes will be repeated if the offender is not apprehended, the detection of crime also assists in protecting public safety and the prevention of crime and the protection of the rights and freedoms of others.

3.12 Thirdly, the level of interference with the right to privacy by a DNA database must be deemed such as is necessary in a democratic society.²⁰ To assess this, a form of proportionality test is used. The interference must be in response to a pressing social need and the

¹⁷ See *Leander v Sweden* (1987) 9 EHRR 433, *Hewitt and Harman v UK* (1992) 14 EHRR 657.

¹⁸ See *Malone v. United Kingdom* (1984) 7 EHRR 14.

¹⁹ *X v United Kingdom* (1981) Application No. 8065/77 14 DR 246.

²⁰ *Dudgeon v United Kingdom* (1981) 4 EHRR 149 at paragraphs 50-54.

means used must not go beyond what is necessary to achieve the objective in question. Some cases, close to the present subject, illustrate how this test is applied in practice. The ECmHR in the early case of *X v Federal Republic of Germany*²¹ had to consider whether keeping records, including fingerprints and photographs, was justified. The ECmHR stated as follows:

“[T]he keeping of records, including documents, photographs and fingerprints, relating to criminal cases of the past is necessary in a modern democratic society for the prevention of crime and is therefore in the interests of public safety.”²²

3.13 On the issue of justification, the case of *McVeigh, O’Neill and Evans v UK*²³ is instructive. The applicants were detained on their arrival in England from Ireland under the relevant legislation to prevent terrorism, which was in force at the time, and they were questioned, searched, fingerprinted and photographed. Although no criminal proceedings were brought, the applicant’s fingerprints and photographs were retained. The ECmHR unanimously held that the searching, questioning, fingerprinting and photography of the applicants during their detention were not in breach of Article 8, but considered that it was “open to question whether the retention of ... such information amounts to an interference with the applicants’ right to respect for private life”.²⁴

3.14 The ECmHR found it unnecessary to decide whether there was any interference with the right, in view of its finding that any presumed interference was justified under Article 8(2), on which it stated:

“Bearing in mind ... the serious threat to public safety posed by organised terrorism in the United Kingdom, the Commission considers that the retention *for the time being* of records such as those at issue in the present case can be

²¹ Application No 1306/61.

²² Application No 1306/61.

²³ (1983) 5 EHRR 71.

²⁴ *Ibid* at paragraph 227.

considered necessary in the interests of public safety and for the prevention of crime.”²⁵ (Emphasis added)

Implicit in this conclusion is that the information could only be kept for as long as it served the legitimate purpose – the prevention of terrorism in this case. The corollary of this is that where personal data, such as fingerprints and DNA profiles have been collected in the course of investigating crime, it should be destroyed once it is no longer necessary for the legitimate purpose in question.²⁶ The ECmHR in *McVeigh* explicitly recognised that its decision entailed the retention of records in respect of some individuals against whom no suspicion existed. However, it rationalised this on the following basis:

“[T]aking into account the nature of the records at issue, it must balance what, in its view, is at most a relatively slight interference with the applicant’s right to respect for private life against the pressing necessity to combat terrorist activity.”²⁷

Clearly the desire to cooperate in the battle against terrorism or potential terrorism, as well as the minimum level of any interference in private life, influenced the ECmHR’s decision.

3.15 The recent decision of *Rotaru v Romania*²⁸ provides that in order for the retention of personal data by public authorities to be deemed proportionate, safeguards must exist against the unlawful release of the information. In *Friedl v Austria*,²⁹ the retention of photographs was in issue. It was held by the ECmHR that the use to which the photographs would be subjected was an important matter to be considered in deciding if the measure was proportionate. It is therefore apparent that the use to which the profile may be subjected

²⁵ (1983) 5 EHRR 71 at paragraph 230.

²⁶ Indeed in the recent case of *Peck v UK* (2003) 36 EHRR 719 at paragraph 79, the ECtHR in reiterating the fundamental importance of protecting personal information was undoubtedly influenced by the fact that the applicant had not been convicted or indeed suspected of any offence. It is suggested that the ECtHR’s decision may have been different if the applicant was filmed committing an offence.

²⁷ (1983) 5 EHRR 71 at paragraph 231.

²⁸ Application No. 28341/95 5 May 2000 at paragraph 59.

²⁹ (1995) 21 EHRR 85 at paragraphs 49-50.

and the safeguards in existence against misuse are important factors to be taken into account in applying any proportionality test to the retention of profiles on a national database. *Friedl* also illustrates that it is not only in cases of suspected terrorism that the retention of an individual's personal data is justified. The photographs in question were taken in the course of a demonstration and the applicant was not a suspected terrorist. Although, of course the information contained in DNA is much more personal than that ascertainable from a photograph and therefore should be given greater protection.

3.16 The case of *Z v Finland*³⁰ is also relevant here. The applicant in this case was the spouse of a person accused of committing serious sexual offences. Her complaint concerned the introduction into her husband's trial of her medical records, which explained her infection with the HIV virus. It was accepted here that the interest in the investigation of crime could outweigh the confidentiality of the medical data. However, it was also stated here that the more intimate the data, the greater the obligations imposed on the State to protect confidentiality.³¹ Therefore, the greater the amount of personal information contained in a DNA profile, the higher the protection that should be afforded to it.

(3) English Case Law.

3.17 Recently, the English Court of Appeal in *R (S and Marper) v Chief Constable of South Yorkshire*³² specifically considered the question of the retention of a suspect's DNA profile and sample indefinitely. This decision is examined in greater detail later when dealing with the specific issue of the retention of a suspect's profile.³³ For present purposes, some aspects of this decision will be discussed here. This case was brought under the *Human Rights Act 1998* ("HRA 1998"), which incorporates the ECHR in the UK. Section 6 of the HRA 1998 requires public authorities to act compatibly with the ECHR. In this case, section 64(1A) of the *Police and Criminal Evidence Act 1984* was challenged on the basis of Articles 8 and 14 of the ECHR. This section permits authorities to retain suspects' DNA

³⁰ (1998) 25 EHRR 371.

³¹ *Ibid* at 406.

³² (2003) 1 Cr App R 16 247.

³³ See paragraphs 5.49-5.67.

samples and profiles indefinitely. For present purposes, it is sufficient to note that section 64(1A) of the PACE Act was challenged on the basis of Article 8 and Article 14 of the ECHR. In respect of Article 8, the qualified nature of this right was reiterated. The proportionality test described above was once again accepted as the test to be applied to determine whether a measure was compatible with the ECHR. The court held that retaining DNA profiles on a database pursues the legitimate aim of crime enforcement. Waller LJ and Sedley LJ observed that the fact that the DNA profile may be used only for crime enforcement purposes was an important factor indicating the proportionality of the measure. The cultural traditions of a particular State as well as the important aim of preventing and detecting crime were also identified as significant considerations to be taken into account.

(4) Germany

3.18 Germany has specifically dealt with the difficulties of balancing public order and privacy rights, in relation to the establishment of a DNA database, through section 82g of the *Code of Criminal Procedure*. It has been held by the German Constitutional Court that the establishment, storage and use of DNA profiles intrudes on the right of informational self-determination protected under Article 1.1 and 2.1 of the German Basic Law and the right to informational self-determination in Germany guarantees one's authority to decide on the circumstances in which personal facts may be disclosed.³⁴ It was however held by the court that this intrusion can be justified if it complies with the proportionality test. It was observed that a DNA database pursues the legitimate aim of facilitating the solution of future criminal offences of substantial significance. It was decisive that the person's character traits or diseases could not be drawn from the DNA profile. The Federal Criminal Office is also required under the code to erase the data if the knowledge is no longer necessary for them to fulfil their tasks. Finally, the Code contains a strict earmarking regarding the permitted uses of the collected cell tissue and a requirement to destroy the cell tissue once it is no longer necessary to create an identifying DNA profile.

³⁴ *Bundesverfassungsgericht*, 2 BvR 1741/99 of 14 December 2000, <http://www.bverfg.de> = BVerfGE 103.

(5) Comment

3.19 Irish case law such as *Kennedy v Ireland*³⁵ indicates that the right to privacy may be limited by requirements of the common good and the rights of others. The decision in *The People (DPP) v Shaw*³⁶ also indicates that in some instances a balancing of conflicting rights is appropriate. The comparative example of Germany is important in demonstrating the various factors that should be considered in deciding whether a form of DNA database is proportionate to the aim pursued. The ECtHR's and the ECmHR's authority is also suggestive of three essential factors that must be taken into account in applying the proportionality test to determine whether interference with the right to privacy is justified:

- (i) the level of interference;
- (ii) the relative seriousness of the corresponding need; and
- (iii) the category of the applicant.

In relation to the level of interference, firstly, this is closely related to the nature and sensitivity of the subject-matter which forms the basis of the substantive right, namely, what type of information is involved and the sensitivity of that information. It was emphasised in *Z v. Finland*³⁷ that the more intimate the data, the greater the obligations which were imposed on the State. It would seem that in *McVeigh*³⁸ the ECmHR considered that fingerprint records and photographs represented a relatively low level of interference. However, as was articulated earlier, certain forms of genetic information may fall into different categories and attract differing considerations.³⁹ The case law of the ECtHR also demonstrates that consideration of the level of interference with the right also entails examining the use to which the data may be subjected and the safeguards in existence against misuse. The decision of the English Court of Appeal in *R (S and Marper) v Chief Constable of South Yorkshire*⁴⁰ also identifies this as a relevant

³⁵ [1987] IR 587.

³⁶ [1982] IR 1.

³⁷ (1998) 25 EHRR 371 at paragraph 96.

³⁸ (1983) 5 EHRR 71.

³⁹ See paragraphs 2.23-2.24.

⁴⁰ (2003) 1 Cr App R 16 247.

factor to be taken into account. The corresponding need, secondly, refers to the purpose of the interference, so, for example, the prevention and investigation of littering offences would be unlikely to justify the taking, use and retention of sensitive private information, whereas terrorism, murder and other such serious wrongdoing would be more likely to suffice. In *Ludi v Switzerland*⁴¹ the ECtHR held that the closer the circumstances are to pure criminal activity the less reasonable is the expectation of privacy. Again in *Marper* this factor was accepted as important in determining what level of interference with individual rights was justifiable. Thirdly, the category within which an individual falls is equally important: the ECmHR was acutely aware that the applicants in *McVeigh* had not been found guilty of any offence.

B The Right to Bodily Integrity

(1) General

3.20 Any database of DNA profiles is of little utility unless in the first place the Gardaí are able to obtain a comparator sample from which a profile may be generated. In the absence of consent the investigatory authorities require the power involuntarily to take a sample for DNA profiling. At common law, any deliberate physical interference with a person is *prima facie* tortious and indeed actionable *per se* without the need to prove special damages. At a constitutional level, one may say that any such authority to take a bodily sample raises issues in relation to the right to bodily integrity of the citizen under Article 40.3. The European Convention on Human Rights also provides protection for the bodily integrity of a person. One must examine this case law in order to decide on the circumstances when it will be permissible for the Gardaí to take samples compulsorily, a matter which is discussed in greater detail later in this Paper.⁴²

(2) The Constitution

3.21 The right to bodily integrity was first recognised as being inherent in the Constitution in *Ryan v Attorney General*.⁴³ It is clear

⁴¹ (1993) 15 EHRR 173 at paragraph 40.

⁴² See Chapters 4 and 5.

⁴³ [1965] IR 294.

that, in principle, any power authorising the Gardaí to take a bodily sample, perhaps with the use of reasonable force in the execution of such authority, would infringe the right to be free from physical interference unless under sanction of law. It is evident from the decision in *The State (Richardson) v Governor of Mountjoy Prison*⁴⁴ that prisoners also enjoy this right to bodily integrity. It was held in this case that a woman prisoner had a right not to be subjected to disgusting sanitary conditions, which were a danger to her health while in prison. A corollary to the right to bodily integrity is the right to freedom from torture, inhuman or degrading treatment. It was accepted in *The State (C) v Frawley*⁴⁵ that Article 40.3 embraces this right although it was also accepted that the right could be limited by requirements of the common good and under the ‘practicable’ limitation in Article 40.3.

3.22 The decision in *The People (Attorney General) v O’Brien*⁴⁶ states that in the absence of exceptional circumstances, any evidence that is obtained by a deliberate and conscious violation of a person’s constitutional rights is liable to be deemed inadmissible in court. Such an instance of an extraordinary excusing circumstance arose in *The People (DPP) v Shaw*.⁴⁷ The need for information to rescue a victim believed to be in mortal peril arguably justified the obtaining and admission of evidence acquired in breach of the accused’s constitutional rights.

3.23 In addition to this limitation, the right to bodily integrity is a qualified right. As observed in *AD v Ireland*,⁴⁸ this right need only be protected “as far as practicable.” In that case, it was held that there was no requirement on the State to pay compensation in respect of the personal injuries, which had been inflicted on the plaintiff by a criminal, in order to vindicate the victim’s right to bodily integrity. The purpose of preventing and detecting crime could constitute an appropriate justification for limiting this right to bodily integrity in sufficiently dire circumstances and thus allow reasonable force to be used in taking bodily samples.

⁴⁴ [1980] ILRM 82.

⁴⁵ [1976] IR 365.

⁴⁶ [1965] IR 342.

⁴⁷ [1982] IR 1.

⁴⁸ [1994] 1 IR 369.

(3) European Convention on Human Rights

3.24 As regards the ECHR, the relevant provisions are Article 8 and Article 3, although, as will be discussed, it is questionable as to whether Article 3 is applicable to the present situation. One might envisage that Article 5, which guarantees the right to liberty and security of the person, might be relevant, but ECHR jurisprudence in this area has not interpreted security of the person to encompass bodily integrity.⁴⁹

(a) Article 8

3.25 Respect for private life has been interpreted under the ECHR as requiring States to avoid causing adverse effects to a person's physical integrity. This is evident from *X v Netherlands*⁵⁰ and *Peters v Netherlands*,⁵¹ where the EComHR held that the taking of compulsory samples is contrary to Article 8. In the latter case, the applicant complained that the obligation to give urine to the prison authorities in order to have it examined for the presence of drugs constituted an interference with his right to respect for his private life under Article 8 and that this interference was not justified under Article 8(2) of the ECHR. Significantly, the taking of the urine test was not motivated by the applicant's personal conduct but constituted part of a daily programme involving the random testing of detainees. It was held in *Peters* that the taking of a urine sample was contrary to Article 8(1). An identical conclusion was reached in *X v Netherlands* in respect of the taking of a blood sample from a driver for testing for alcohol content.

3.26 While the taking of samples compulsorily involves a breach of the right to bodily integrity, a key issue is whether this may be justified under Article 8(2), that is, being necessary in a democratic society for the prevention of crime or the protection of the rights and

⁴⁹ It has been accepted by the ECtHR that the phrase "security of the person" must be understood in the context of physical liberty and does not have an independent meaning. In other words, "liberty of the person" affords the individual freedom from arrest and detention and "security of the person" protects a person against capricious interference with this liberty. This is evident from the decisions of *East Africa Asians v United Kingdom* (1973) 3 EHRR 76 and *Zilli and Bonardo v Italy* (2002) 35 EHRR 47.

⁵⁰ (Application No. 5239/78) 16 DR 184.

⁵¹ (Application 21132/93) 77-A DR 75 EComHR.

freedoms of others.⁵² It was accepted in *X v Germany*⁵³ that the right to physical integrity can be limited in the interest of preventing crime. It was held that a requirement that an individual undergo a psychiatric examination, even prior to any indictment, was justifiable. It was observed that:

“[ss] it is the criminal court’s duty, in the interest of the accused himself and for the protection of society to investigate any of the circumstances which may be relevant for the assessment of the criminal responsibility of the accused, it must be accepted that the measures taken for this purpose are necessary in a democratic society for the prevention of crime, even if the investigated facts of the accused person’s private life are not in themselves criminally relevant”.

The compulsory taking of the sample in *Peters v Netherlands*⁵⁴ was also held to be justifiable under Article 8(2). It was decided that the “necessity” for interference with the exercise of the right of the convicted person to respect for his private life must be considered having regard to the ordinary and reasonable requirements of imprisonment. It was accepted that the “prevention of disorder or crime” may justify wider measures of interference in the case of a prisoner than in the situation of a person at liberty.

(b) *Article 3*

3.27 Article 3 provides that “[n]o one shall be subjected to torture or to inhuman or degrading treatment or punishment”. The prohibition contained in Article 3 is absolute and cannot be limited in any way. In determining whether Article 3 is applicable, regard must be had to all the circumstances of the case and to what society in general tolerates at the time of the complaint.⁵⁵ It has recently been

⁵² See paragraph 3.10 for Article 8(2).

⁵³ (Application No. 8334/78) 24 DR 103.

⁵⁴ (Application 21132/93) 77-A DR 75 EComHR.

⁵⁵ See *Ireland v United Kingdom* (1978) 2 EHRR 25 at paragraph 162 where it was observed that “[i]ll treatment must attain a minimum level of severity if it is to fall within the scope of Article 3. The assessment of this minimum is in the nature of things relative: it depends on all the circumstances of the case such as the duration of the treatment, its physical

held by the ECtHR that *any* use of physical force on an individual detained by state authorities, which has not been made strictly necessary by the conduct of the detainee, will be contrary to Article 3.⁵⁶ This would suggest that the use of reasonable force to obtain a bodily sample from a suspect or a convicted offender could constitute a breach of Article 3 of the ECHR. However, this assertion has been qualified in later cases. In *Raninen v Finland*⁵⁷ the Government conceded that the handcuffing of the applicant was not strictly necessary. Despite this, the ECtHR did not consider the effects sufficiently serious to give rise to a violation under Article 3. It is apparent therefore that the force must not be strictly necessary and must also be of sufficient seriousness before it will be deemed to fall within Article 3. It is questionable as to whether the interference with which we are concerned with here would reach the rather high threshold set by the ECtHR.⁵⁸ However, the ECHR is a living instrument and while at present the force likely to be involved in obtaining a buccal swab or blood sample does not appear to fall within Article 3, this could change in the future or in particular circumstances the threshold of severity might be reached.⁵⁹

(4) Comment

3.28 Although the suspect's right to bodily integrity may be interfered with to a limited extent in the event that reasonable force is used to obtain a sample from the suspect, this interference may be

or mental effects and, in some cases, the sex, age and state of health of the victim, etc.”

⁵⁶ See *Ribitsch v Austria* (1995) 21 EHRR 573 at paragraph 38.

⁵⁷ (1997) 26 EHRR 563 at paragraphs 56-57.

⁵⁸ See “*The Greek Case*” [1969] 12 *Yearbook of the European Court of Human Rights*. A further example of this high threshold is demonstrated by *Delazarus v UK* (1993) Application No 17525/90, in which a prisoner was segregated for over four months as a result of a disciplinary charge. He could not communicate with other prisoners and was locked in his cell for 23 hours a day, which was cold and infested with cockroaches. The ECmHR found that this did not meet the requisite level of severity in order to amount to inhuman and degrading treatment.

⁵⁹ The ECtHR observed in *Selmouni v France* (2000) 29 EHRR 403 at paragraph 101 that the “increasingly high standard being required in the area of the protection of human rights and fundamental liberties correspondingly and inevitably requires greater firmness in assessing breaches of the fundamental values of democratic societies”.

justified under the Constitution and the ECHR. The EComHR cases of *Peters v Netherlands*⁶⁰ and *X v Netherlands*⁶¹ illustrate that the taking of samples can be justified in the interests of preventing crime and disorder. In order for it to be justified on this basis, it is likely that the proportionality test set out above must be satisfied.⁶² This test was used in *X v Germany*⁶³ to balance the competing requirements of preventing crime and the right to bodily integrity. US cases have held that it is easier to justify an interference with a convicted person's bodily integrity rights than a mere suspect's rights.⁶⁴ This was also accepted by the EComHR in *Peters v Netherlands*.⁶⁵ The justification given for this in the US cases is that analysis of a convicted person's DNA could be necessary to solve previous crimes and it is also more likely that a person previously convicted of a crime will commit a further offence.⁶⁶ Consequently, it is easier to satisfy the proportionality test in respect of a convicted person than in the case of a person who is merely a suspect. In relation to a suspected person's rights, the position is more uncertain. These principles must be considered when examining whether and if so, when is it permissible for reasonable force to be used to extract samples from suspects.⁶⁷

C The Privilege Against Self-Incrimination

(1) General

3.29 Lord Mustill in a sophisticated analysis stated that the privilege against self-incrimination or right to silence does not denote any single right, but rather it refers to a disparate group of immunities; such as “a general immunity, possessed by all persons and bodies from being compelled on pain of punishment to answer

⁶⁰ (Application 21132/93) 77-A DR 75 EComHR.

⁶¹ (Application No. 5239/78) 16 DR 184.

⁶² See paragraph 3.12.

⁶³ (Application No. 8334/78) 24 DR 103.

⁶⁴ *Shaffer v Saffle* 101 F3d 1336 (10th Cir 1996), *Boling v Romer* 148 F3d 1180 (10th Cir 1998).

⁶⁵ (Application 21132/93) 77-A DR 75, EComHR

⁶⁶ (Application No. 8334/78) 24 DR 103.

⁶⁷ See paragraphs 4.46-4.50.

questions, the answers to which may later be used to incriminate them.”⁶⁸ In *Saunders v UK*,⁶⁹ Walsh J observed that the principle was that “a man could not be made the deluded instrument of his own conviction”.⁷⁰ The rationale is that:

“The essential and inherent cruelty of compelling a man to expose his own guilt is obvious to everyone, and needs no illustration. It is plain to every person who gives the subject a moment’s thought. A sense of personal degradation in being compelled to incriminate one’s self must create a feeling of abhorrence in the community at its attempted enforcement.”⁷¹

3.30 The privilege is reflective of the traditional distribution of the burden of proof in a criminal trial, namely that it is incumbent on the prosecution to establish guilt beyond a reasonable doubt. In other words, the privilege absolves the accused from having to face the “cruel trilemma of self-accusation, perjury or contempt.”⁷²

(2) The Constitution

3.31 The privilege against self-incrimination is both a common law privilege and a constitutional right. The common law privilege can be overridden by a statutory provision requiring information to be given under penalty for refusal.⁷³ It was accepted in *Heaney v Ireland*⁷⁴ and *Rock v Ireland*⁷⁵ that the privilege is also a constitutionally protected right, that suspects have a right to remain silent in custody, but that this constitutionally protected right is not absolute and could be abridged. It was acknowledged that the privilege may have to give way to the exigencies of the common good, once the means used to restrict the right were proportionate to

⁶⁸ *R v Director of the Serious Fraud Office, ex parte Smith* [1993] AC 1 at 3.

⁶⁹ (1996) 23 EHRR 313.

⁷⁰ *Ibid* at 345.

⁷¹ *Brown v Walker* 161 US 591, 637 (1896) *per* Justice Field.

⁷² *Murphy et al v Waterfront Commission of New York Harbour* 378 US 52 (1964) 55.

⁷³ See *The People v McGowan* [1979] IR 45.

⁷⁴ [1996] 1 IR 580.

⁷⁵ [1997] 3 IR 484.

the objective to be achieved. Thus, a balance must be struck between the individual's right to self-incrimination and the right and the duty of the State to defend and protect the life, person and property of all its citizens. The proportionality test will be used to strike a balance between these two conflicting rights. This test was also applied in *Rock v Ireland*.⁷⁶ It was accepted in this case that in order for a restriction on the privilege against self-incrimination to be justified, it must not go beyond what is necessary to achieve the objective in question. It can only interfere with the right to the minimum extent necessary to achieve the objective in question. In *Heaney v Ireland*,⁷⁷ the test was applied by the Supreme Court in assessing whether section 52 of the *Offences Against the State Act 1939* infringed the privilege against self-incrimination. Section 52 obliges people detained in custody under the 1939 Act to give, under pain of penal sanctions, an account of their movements and actions during a specified period. There is in essence a stark choice between giving information and imprisonment. However, it was held that a proper balance was struck by section 52 between on the one hand the citizen's privilege against self incrimination and on the other hand the entitlement of the State to take measures to protect itself.

(3) European Convention on Human Rights

3.32 The privilege against self-incrimination is also protected under the ECHR. The freedom from coerced self-incrimination is protected as an aspect of the right to a fair hearing in the determination of criminal charges under Article 6(1) and is implied in the right to be presumed innocent until proven guilty under Article 6(2). It has been held in a number of cases that the use of evidence obtained in infringement of this right violates Article 6.⁷⁸ These

⁷⁶ *Rock v Ireland* [1997] 3 IR 484. Sections 18 and 19 of the *Criminal Justice Act 1984* were in issue in this case. These sections allow a court to draw such inferences as appear proper from a refusal to answer questions. It was held here that these sections were proportionate as there were two limiting conditions on their application. Firstly, no one could be convicted on the basis of inferences alone. Secondly, only such inferences as appeared proper could be drawn. There was no obligation to draw inferences here.

⁷⁷ [1996] 1 IR 580.

⁷⁸ *Funke v France* (1993) 16 EHRR 297, *Saunders v United Kingdom* (1996) 23 EHRR 313.

principles were set out in *Heaney and McGuinness v Ireland*⁷⁹ which in effect reversed the decision of the Supreme Court in *Heaney v Ireland*.⁸⁰ Although the ECtHR also accepted the proportionality test for determining whether any interference with the privilege against self-incrimination was justified, they reached a different conclusion to the Supreme Court in applying this test. They held that section 52 of the 1939 Act was disproportionate to the aim being pursued. This was because the provision destroyed the essence of the right to protection from self-incrimination. The degree of compulsion in being compelled to give the information or face imprisonment destroyed the very essence of the privilege against self-incrimination. This demonstrates that a stricter test has been adopted in the ECtHR than in the Supreme Court in respect of the requirement of proportionality in this regard. As a result of the enactment of the ECHR Act 2003, the State must exercise its powers compatibly with the ECHR. Consequently, the stricter test advocated by the ECtHR in *Heaney* must be used in determining whether any interference with the privilege against self-incrimination through the use of DNA profiling is proportionate.

(4) Comment

(a) DNA Profiling and Self-Incrimination

3.33 DNA profiling, as described in Chapter 1, leads to the recognition of links between individuals and particular crimes by comparing DNA profiles, obtained from those individuals and stored on a database, with DNA profiles obtained from crime scenes. One must examine whether compulsorily obtaining a DNA profile from a suspect infringes the privilege against self-incrimination. The question for consideration here is whether the privilege against self-incrimination extends beyond the traditional gathering of “testimonial evidence”⁸¹ to cover “real evidence”.⁸² The present judicial

⁷⁹ *Heaney and McGuinness v Ireland* ECtHR Application No. 34720/97 21 December 2000.

⁸⁰ [1996] 1 IR 580.

⁸¹ “Testimonial evidence” is described by Gans in “Something to Hide: DNA, Surveillance and Self-Incrimination” (2001) *Current Issues in Criminal Justice* 168 at 177 as “a suspect’s incriminating thoughts”.

⁸² “Real evidence” consists of “incriminating features of a suspect’s body” as described by Gans in “Something to Hide: DNA, Surveillance and Self-Incrimination” (2001) *Current Issues in Criminal Justice* 168 at 177.

consensus is that the privilege only applies to the gathering of testimonial evidence. It has been held by the English Court of Appeal in *R v. Smith*⁸³ that the taking of bodily samples does not breach the privilege against self-incrimination. This approach has also been followed in the US. As observed by Holmes J in *Holt v US*,⁸⁴ “the prohibition on compelling a man in a criminal court to be witness against himself is a prohibition of the use of physical or moral compulsion to exert communications from him not an exclusion of his body as evidence when it may be material”. Similarly in *Saunders v United Kingdom*,⁸⁵ the ECtHR accepted that there was a distinction between the right of the accused person to remain silent and the use in criminal proceedings of material obtained through the use of compulsory powers but which has an existence independent of the will of the suspect for example breath, urine or bodily samples. The right not to incriminate oneself was held not to apply to such real evidence samples. As a result, the taking of a bodily sample does not constitute an interference with the privilege against self-incrimination.

(b) *DNA Request Surveillance and Self-Incrimination.*

3.34 A variation on the discussion in the last paragraph would occur where investigators seek to rely on a refusal to consent to a forensic procedure as a sign that the individual has “something to hide”. This would constitute DNA request surveillance.⁸⁶ This might breach the privilege against self-incrimination.⁸⁷ The revealing of the negative reaction to the request for a sample could be regarded as self-incriminatory as it can support an inference that the individual is guilty of crime. It is clear that DNA request surveillance is a form of compelled rather than voluntary self-incrimination. Recipients of a request can either submit to that request or reveal their fear of that

⁸³ [1985] Crim LR 590.

⁸⁴ (1910) 218 US 245 at 252-253.

⁸⁵ (1996) 23 EHRR 313.

⁸⁶ This is defined by Gans in “Something to Hide: DNA, Surveillance and Self-Incrimination” (2001) *Current Issues in Criminal Justice* 168 at 168 as a technique which “allows the observation of individuals’ fear of a match between their DNA and material connected with a past (or future) crime, by assessing their response to a request to provide a DNA profile voluntarily”.

⁸⁷ See Gans on ‘Something to Hide: DNA, Surveillance and Self-Incrimination’ (2001) *Current Issues in Criminal Justice* 168.

surveillance. There is no real choice here. This could arise, for example, in respect of a suspect who is asked to give voluntarily a sample or in relation to a situation of mass screening where the whole population in a particular area is requested to give a sample. In such a case, the suspect or other person cannot reveal his or her reluctance to give a sample without incriminating himself or herself. This is different to the case where a suspect is compelled to submit a sample as the recipient of this coercive request is not revealing anything by his or her reluctance to give a sample. In the event of the privilege against self incrimination being breached, the unconstitutionally obtained evidence should be excluded from court.⁸⁸ Evidence obtained in a conscious and deliberate breach of a person's constitutional rights must be excluded in the absence of exceptional circumstances.⁸⁹ Consequently this evidence can only be used for investigative purposes.

3.35 However it must be remembered that this constitutional right against coercive self incrimination is not absolute.⁹⁰ It must be balanced with the right and duty of the State to defend and protect the life, person and property of all its citizens. The proportionality test described above could be used in deciding whether DNA request surveillance and the use made of the evidence obtained from it is constitutional.⁹¹ An important consideration in applying such a test is that the right of the citizen should only be breached to the minimum extent necessary to achieve the legitimate aim. In certain circumstances, it may be permissible for such evidence to be admitted into court and for the Gardaí to use it for investigative purposes. The constitutional and ECHR principles described above will be used in deciding on the extent of permissible interference with this privilege. The potential interference of DNA request surveillance with the privilege against self-incrimination will be taken into consideration in deciding on the situations in which DNA sampling can take place and the inferences that can be drawn from a refusal to consent to sampling.⁹²

⁸⁸ *People (Attorney General) v O'Brien* [1965] IR 142.

⁸⁹ See the discussion in paragraph 3.20.

⁹⁰ This was accepted in *Rock v Ireland* [1997] 3 IR 484.

⁹¹ See paragraphs 3.31-3.32.

⁹² See paragraphs 4.53, 5.89, 5.107 and 5.110.

CHAPTER 4 DNA SAMPLING: CURRENT POWERS AND SAFEGUARDS

Introduction

4.01 Any legislation providing for the establishment of a DNA database is of little significance unless the Gardaí are first able to obtain a sample from which a profile may be generated. If the decision is taken to compile a database of DNA profiles, then legislation conferring appropriate sampling powers will need to be enacted. As we have discussed in Chapter 3, the right to bodily integrity is intricately engaged when considering such powers and the principles articulated above,¹ will help shape constitutionally permissible and Convention compliant law in this area. But, before we discuss what, if any, law to recommend, it is instructive to examine the current legislation concerning both the comparable fields of photographs, fingerprints and palmprints, as well as the existing law in relation to taking bodily samples.

4.02 The Commission is also conscious of the publishing by the Minister for Justice of the ‘Scheme’ of a *Criminal Justice Bill 2003*.² This recommends some amendments to the law in these fields. These recommendations are based on the suggestions of the Expert Group Appointed to Consider Changes in the Criminal Law (“Leahy Group”).³ These proposed recommendations will be dealt with in as far as they are relevant to this discussion.

¹ See paragraphs 3.20-3.28.

² 28 August 2003. Available at <http://www.justice.ie>. While the ‘Scheme’ when formally published will be in the form of a *Criminal Justice Bill 2004*, we have maintained throughout this Paper our references to this as the 2003 Bill.

³ See the *Report of the Expert Group Appointed to Consider Changes in the Criminal Law*, which convened under the chairmanship of the late Eamon Leahy SC. Available at: <http://www.justice.ie>.

A Photographs, Fingerprints and Palmprints

(1) General

4.03 As Walsh argues, “[f]ingerprinting a suspect without his consent is ... an unlawful trespass against the person at common law” and photographing or measuring a suspect may also amount to a trespass if physical restraint is used to facilitate this even if it is not done in violation of his right to privacy.⁴ Accordingly, appropriate statutory authority must be conferred on the Gardaí in order to photograph and take a fingerprint of an individual. The legislative provisions which confer powers on the Gardaí in this regard are at present contained in a number of statutory provisions including, as follows:⁵

(i) Section 6 of the *Criminal Justice Act 1984*⁶ which is the most important of these provisions and is dealt with in the next paragraph.

(ii) Section 7 of the *Criminal Law Act 1976*⁷ which concerns individuals who are detained under section 30 of the *Offences Against the State Act 1939* and section 2 of the *Emergency Powers Act 1976*. This provision is otherwise identical to that under section 6 of the *Criminal Justice Act 1984*.

(iii) Section 28 of the *Criminal Justice Act 1984*⁸ which deals with those individuals who have been prosecuted for

⁴ Walsh *Criminal Procedure* (Thomson Round Hall 2002) at 340.

⁵ See generally Walsh *Criminal Procedure* (Thomson Round Hall 2002) at 340-345. Note also that under section (9A)(1) of the *Immigration Act 1999* “an authorised officer or immigration officer may ... take or cause to be taken the fingerprints of an applicant above the age of 14 years.”

⁶ As extended by section 5 of the *Criminal Justice (Drug Trafficking) Act 1996* (“1996 Act”), which applies the powers conferred by the 1984 Act to those detained under section 2 of the 1996 Act. See further (1996) ICLSA 96/29-01, at 29-09. Also as amended by section 6 of the *Criminal Justice (Forensic Evidence) Act 1990* – see paragraph 4.13 below.

⁷ As amended by section 6(5) of the *Criminal Justice Act 1984* and section 6 of the *Criminal Justice (Forensic Evidence) Act 1990* – see paragraph 4.13 below.

⁸ As substituted by section 12 of the *Criminal Justice (Miscellaneous Provisions) Act 1997*.

an indictable offence and made the subject of an order under the *Probation of Offenders Act 1907* or convicted and otherwise dealt with.

(iv) *Measuring and Photography of Prisoners Regulations 1955* – made under the *Penal Servitude Act 1891* – which have been relied upon to obtain fingerprints from those individuals in custody.⁹

(v) Section 19 of the *Criminal Justice (Miscellaneous Provisions) Act 1997*, although not conferring a power to obtain photographs and fingerprints *per se*, enables the Minister for Justice to make Prison Rules providing for “the photographing and measuring of persons detained in a prison and the taking of fingerprints and palmprints from such persons during their detention in a prison.”¹⁰ Any such copies may also be furnished to the Gardaí.

(vi) Section 11 of the *Criminal Justice (Miscellaneous Provisions) Act 1997* provides for the electronic recording of fingerprints and palmprints taken under *any* enactment.

4.04 The main provisions governing the taking of photographs, fingerprints and palmprints are in relation to those individuals detained under section 4 of the 1984 Act. Section 6(1)(c) empowers the Gardaí to “photograph him or cause him to be photographed.” Also section 6(1)(d) empowers the Gardaí to “take, or cause to be taken, his fingerprints and palm prints.” Section 6(2) provides that these powers may only be exercised on the authority of an officer not below the rank of superintendent. In the event of any person obstructing or attempting to obstruct the Garda Síochána in the exercise of his powers, under section 6(4), that person shall be guilty of an offence.

⁹ However, during the passage through the Oireachtas of the *Criminal Justice Act 1984* the Minister for Justice expressed serious doubts as to whether this was a valid basis for fingerprinting persons – 352 *Dáil Debates* 266.

¹⁰ No Prison Rules have been made to date under the 1997 Act. We understand that draft Rules, which are intended to replace the *Rules of the Government of Prisons 1947* are being drafted by the Department of Justice.

4.05 It is unclear as to whether any refusal to cooperate with the Gardaí will only result in the commission of a criminal offence under section 6(4), or whether the Gardaí may exercise their powers without the consent of the individual detained. Although section 6 does not explicitly provide for the use of reasonable force in default of consent and cooperation, Boyle and Lawless argue that “an interpretation which denied compulsory powers would render the section nugatory.”¹¹ It would prevent the police from exercising their powers in the cases where fingerprint evidence was most necessary - where the suspect had something to hide and is willing to be convicted of an offence rather than submit to fingerprinting. The authors also comment that if compulsory powers are to be exercised under this section, then this should be prescribed by law with the appropriate limits of such force set out.¹² Indeed, the analogous provisions in England and Wales specifically empower the police, in certain circumstances, to obtain the fingerprints of a person detained without appropriate consent.¹³

4.06 Indeed, the Scheme of the *Criminal Justice Bill 2003* proposes to amend the provisions to provide specifically for the use of reasonable force to take photographs and prints.¹⁴

4.07 A further aspect is the obligation in section 8 of the 1984 Act to destroy on request every photograph, fingerprint and palmprint (including all negatives, copies and records).¹⁵ Section 8(2) provides that every photograph or print obtained from a person must be destroyed in the event of proceedings not being instituted against that person within six months from the obtaining of the fingerprint or photograph. This applies unless the failure to institute proceedings is attributable to the person absconding or their whereabouts being unknown. Section 8(3) requires destruction to be carried out if any proceedings instituted result in acquittal, discharge or discontinuance. Where a person is subject to an order under section 1(1) or (2) of the

¹¹ See further Boyle and Lawless (1984) ICLSA 84/22-01 at 22-15.

¹² *Ibid.*

¹³ *Police and Criminal Evidence Act 1984* section 61(3).

¹⁴ Scheme of the *Criminal Justice Bill 2003* head 10. Available at: <http://www.justice.ie>.

¹⁵ Section 8(1) of the *Criminal Justice Act 1984*.

Probation of Offenders Act 1907, section 8(4) provides that the sample must be destroyed three years after the making of the order once no offence is committed during that period. This is provided for by section 8(4)(a). Section 8(5) allows the person's solicitor to witness the destruction of the prints and photographs. However, section 8(7) allows a judge of the District Court to extend the period in which the prints or photographs may be retained for a further six months if they are required for the purpose of further proceedings in relation to the offence. These safeguards are considered below¹⁶ when discussing the analogous provisions which govern bodily samples, as set out in the *Criminal Justice (Forensic Evidence) Act 1990*.

4.08 There is no corresponding provision governing destruction as regards those photographs, fingerprints and palmprints obtained from an individual arrested and detained under section 30 of the *Offences Against the State Act 1939*. Walsh comments that “[t]he clear implication is that they can be retained even if the suspect is released without charge, or if he is acquitted or discharged in related criminal proceedings.”¹⁷ Walsh also suggests that this may raise issues in relation to privacy both under the Constitution and the ECHR. The ECmHR in *McVeigh, O’Neill and Evans v UK*¹⁸ took the view that retention of such records may be justified for the prevention of terrorism.¹⁹ However, it may be open to question whether all possible offences under the 1939 Act would meet this extremely high threshold and justify retention of these records.²⁰

4.09 The taking, retention and use of photographs, fingerprints and palmprints are not necessarily governed by these assorted statutory provisions illustrated above. They may also be obtained ‘voluntarily’ by the Gardaí during an investigation. This voluntary method is, as we understand it, the most commonly used in criminal investigations by the Gardaí. This is certainly the most productive means of obtaining fingerprints from those whom the Gardaí wish to eliminate from the investigation and who did not fall within the

¹⁶ See paragraphs 4.54-4.57.

¹⁷ Walsh *Criminal Procedure* (Thomson Round Hall 2002) at 342.

¹⁸ (1983) 5 EHRR 71.

¹⁹ See paragraphs 3.13 - 3.14.

²⁰ See further paragraph 4.20.

requisite ambit of suspicion but the consequence of this method is that the fingerprints are unregulated by the law. As a result, the sorts of safeguards provided for in the 1984 Act are not applicable. Indeed, the result of this Gardaí practice is that ‘volunteers’ are in the same position as those whose photographs and prints are obtained under section 7 of the *Criminal Law Act 1976*. This is anomalous because ‘volunteers’ have not been arrested or detained and are not necessarily ‘reasonably suspected’ of involvement in an offence, whereas the latter category include those suspected, arrested and detained for the most serious offences. One qualification to this statement should be made. As we understand it, as a matter of practice, where assurances are given that photographs and prints will not be retained, then they are destroyed. Also *if* a volunteer requests that their prints and photographs be destroyed then the Gardaí, having considered the circumstances, will destroy the records.

4.10 However, doubt has recently been cast on the lawfulness of this method of obtaining fingerprints by the decision of Mc Mahon J in the Circuit Criminal Court in *The People (DPP) v Carroll*.²¹ It was held in this case that the obtaining of fingerprints and palmprints by this method is unlawful. Fingerprints and palmprints obtained under this voluntary method were deemed inadmissible in this case. It was accepted by the judge that in order for fingerprints and palmprints to be lawfully taken, they must be obtained under the legislative provisions enacted for this purpose. In this case, the accused was arrested under section 4 of the *Criminal Justice Act 1984*. As a result, section 6 of this Act was in issue. The judge accepted that the language in this section was unambiguous and he saw no reason to depart from its meaning. He noted that there was no provision in the Act allowing for the taking of fingerprints and palmprints outside it where consent had been given. He held that there was no legislative lacuna, which would justify the implying of such a power to take fingerprints and palmprints outside the legislative provisions.

4.11 It is clear from this brief survey of the current framework in relation to the comparable fields of photographs and prints that there is a need not only to review this framework, but also to consolidate these provisions. The position concerning the destruction of fingerprints voluntarily obtained needs to be clarified. Also, as considered below, fingerprints should not be given a higher degree of

²¹ Circuit Criminal Court 24 February 2004 (McMahon J).

protection than that afforded to DNA profiles.²² Any revision of the law could address this anomaly. It therefore seems that a review and consolidation should provide for the comprehensive regulation by the law of the taking and, in particular, the retention of records.

4.12 *The Commission is of the view that the taking of photographs and prints should be governed exclusively by legislation, even in the case of those taken on a voluntary basis.*

B Criminal Justice (Forensic Evidence) Act 1990

(1) Forensic Samples outside the 1990 Act

4.13 The *Criminal Justice (Forensic Evidence) Act 1990* (“1990 Act”), is the primary legislative provision regulating the taking of bodily samples for “forensic testing.” But section 2(11) of the 1990 Act also states that: “[t]he powers conferred by this section are without prejudice to any other powers exercisable by a member of the Garda Síochána.” Thus, the 1990 Act does not comprehensively govern the taking of bodily samples. There are two further methods: the first is under other statutory provisions that remain untouched by the 1990 Act,²³ such as the powers conferred by the *Road Traffic Acts 1961-1995*, which govern the taking of a specimen of an arrested person’s breath, blood or urine.²⁴ Under these provisions, a person may be required to permit a designated doctor to take a specimen of his blood or to provide a specimen of urine for the doctor, where a person has been arrested under certain provisions of the *Road Traffic Acts* or where a member of the Gardaí is of the opinion that the person is under the influence of drugs.²⁵ Of course it is right that powers exist to take samples in particular contexts and for specific purposes,

²² See paragraph 4.57.

²³ Nevertheless, section 6 of the 1990 Act does repeal both section 6(1)(e) of the *Criminal Justice Act 1984* (“1984 Act”) and section 7(1)(e) of the *Criminal Law Act 1976* (“1976 Act”). Section 6(1)(e) provides for the taking of swabs from a person’s skin or samples of hair in order to determine whether the person detained has been in contact with any firearms or explosive substance. The same powers are also conferred by section 7(1)(e) of the 1976 Act, exercisable following an arrest under the *Offences Against the State Act 1939* and the *Emergency Powers Act 1976*.

²⁴ Sections 12-18 of the *Road Traffic Act 1994*.

²⁵ See sections 13 and 14 of the 1994 Act.

such as to determine the level of intoxication of an individual arrested on suspicion of drink driving. However, we note here that a DNA profile may also be extracted from, in particular, blood samples and therefore such a sample could be used to obtain and then put a DNA profile on a DNA database.

4.14 The second method, aside from other statutory provisions, is the practice of requesting samples. In principle, this category is dependent on individuals voluntarily providing a biological sample for analysis. What constitutes an adequate consent for this purpose has not yet been clarified.²⁶ Prior to the 1990 Act the Gardaí would simply request individuals to ‘volunteer’ a sample, which would usually be a blood sample for blood grouping but this could also be used to create a DNA profile for the purposes of any DNA database. Doubt has been cast on the lawfulness of this method of obtaining samples by the decision of *The People (DPP) v Carroll*.²⁷ However, to date this method of obtaining samples has been accepted as lawful.

4.15 The existence of those “other powers exercisable” by the Gardaí apart from the 1990 Act produces a lacuna in the regulation of the taking, use and retention of biological samples (and for that matter the profiles generated from them). What is meant by this is that there are situations where a biological sample may be obtained in circumstances, which will not attract the safeguards, which are bestowed by the 1990 Act, such as the obligation under section 4 to destroy the sample and records.²⁸ It is our understanding that this ‘voluntary’ method remains the preferred way in which a sample may be obtained for DNA profiling as the conditions laid down by the 1990 Act are perceived to be too burdensome and section 2(11) provides a comprehensive ring road circumventing the carefully designed controls, established by the 1990 Act. Of course the legislative framework for obtaining comparator samples must be workable, but the Commission is concerned that the collection, testing

²⁶ At present in *The People (DPP) v Boyce* the appellant is challenging his conviction on the basis that his decision to give a DNA sample was not a properly informed consent as he was not cautioned. A decision in this case had not been rendered at the time of publishing this Paper. See *Irish Independent* 19 February 2004 for more details on this.

²⁷ Circuit Criminal Court 24 February 2004 (McMahon J). See paragraph 4.09 for more detail on this case.

²⁸ See paragraphs 4.54-4.58.

and retention of samples, which could yield very sensitive and personal information²⁹ is almost completely unregulated. It must certainly be considered, in view of the inherent nature of genetic material and information as well as the potential uses and misuses, whether it is essential that samples taken in the law enforcement field should be exclusively regulated by legislative provisions. Also, as observed above, there are doubts over the lawfulness of this method of obtaining DNA samples and consequently, it seems preferable for the obtaining of samples to be governed exclusively by legislation.

(2) General Scope of the 1990 Act

4.16 Section 2(1) of the 1990 Act provides that where a person is in custody under section 30 of the *Offences Against the State Act 1939*, section 4 of the *Criminal Justice Act 1984* or section 2 of the *Criminal Justice (Drug Trafficking) Act 1996*,³⁰ a Garda Síochána may take certain samples from that person.³¹

4.17 In addition to those arrested and taken into custody on suspicion of having committed specific offences under the 1939, 1984 and 1996 Acts, section 2(2) of the 1990 Act provides that a sample may be taken where ‘a person is in prison’ and who would, but for that imprisonment, be liable to be arrested and taken into custody for an offence under the 1939, 1984 and 1996 Acts.

4.18 The intended effect of this provision is to put those in prison in the same position, in respect of the obligation to provide bodily samples, as everybody else.³² As a result, the Gardaí are not, therefore, precluded from taking a sample from an individual already in prison whilst investigating offences under the 1939 Act, the 1984 Act or a drug trafficking offence.³³ However, section 2(3) ensures that a sample may only be sought in relation to the investigation of an offence other than the one for which the person is in prison (or a

²⁹ See paragraphs 2.22-2.24.

³⁰ As inserted by section 3 of the *Criminal Justice (Drug Trafficking) Act 1996*.

³¹ See paragraph 4.24 below.

³² 396 *Dáil Debates* Col 1250.

³³ Section 3 of the *Criminal Justice Act 1994*, which also amends section 2(3)(b) of the 1990 Act by the insertion of “or a drug trafficking offence” within the meaning of section 3(1) of the *Criminal Justice Act 1994*.

possible alternative count arising out of that indictment). For example, where a person is convicted of rape and imprisoned, the Gardaí may obtain a sample in order to determine whether that person may be implicated in another offence that falls within the 1984 Act, the 1939 Act, or a drug trafficking offence (as defined by section 3(1) of the *Criminal Justice Act 1994* (“1994 Act”). One can readily envisage an application under section 2(3) where the offender is convicted of a crime on the basis of evidence other than DNA and the authorities did not need to obtain a comparator sample from him. Meanwhile there are other similarly perpetrated unsolved offences, which fall within the scope of the subsection, where a biological stain is recovered that was thought to be left by the perpetrator. In this situation the power of the Gardaí to obtain a comparator sample may be essential to solve these crimes. The justification for obtaining a sample here is to prove or disprove the convicted offender’s involvement in the further offence on the basis of the evidential significance justification.³⁴

4.19 Although, a convicted offender may be the primary focus of this subsection, O’Connor notes that “the expression ‘a person in prison’ is sufficiently broad to include not only a person who has been convicted of an offence but a person who has been remanded in custody.”³⁵ A person can be remanded in custody for a minor offence. However, the sample itself must be required for the purpose of investigating a serious or relatively serious offence before it can lawfully be taken as is apparent from section 2(3)(b) of the 1990 Act. Also, under the wording of this section, it appears that the “other offence” could possibly arise from the same facts although it could not include alternative counts.

4.20 As regards the scope of section 2 in general, the Minister for Justice observed during the parliamentary debates, that “[t]he purpose of this Bill is to provide the Garda Síochána with power to take for forensic testing bodily samples ... from persons suspected of *serious criminal offences*”.³⁶ This observation is for the most part correct; thus section 4 of the 1984 Act concerns detention for offences which attract on conviction punishment by “imprisonment for a term of five

³⁴ See paragraphs 5.13-5.14.

³⁵ O’Connor (1990) ICLSA 90/34-05.

³⁶ 396 *Dail Debates* Col 1244 (Emphasis added).

years or by a more severe penalty”.³⁷ Moreover, section 30 of the *Offences Against the State Act 1939* (“1939 Act”) concerns detention for wide ranging and serious subversive and non-subversive offences.³⁸ However, as O’Connor notes, there are some offences under the 1939 Act which potentially attract relatively minor penalties. The author also comments that “it would ... seem inappropriate that where the offence in question is not a serious one that samples should be taken for the purpose of forensic examination.”³⁹ However, there is a contrary argument that if the DNA is relevant to the investigation then it may in fact be appropriate on the basis that it is necessary to prove or disprove the person’s involvement in the offence.

4.21 Broadly speaking, it is correct that the powers conferred by the 1990 Act to take bodily samples are primarily aimed at those offences towards the higher end of the scale of seriousness and not summary or minor offences. This is so even following the amendments to the scope of offences by the *Criminal Justice (Drug Trafficking Act) 1996*, which was passed in order to empower the Gardaí to tackle the problem of crime spawned by drugs. The Minister for Justice described the measures as forming “part of a comprehensive anti-drug package.”⁴⁰ The offences now include “drug trafficking” offences, which are defined under section 3(1) of the *Criminal Justice Act 1994*.⁴¹ While all these offences may not constitute serious offences,⁴² it is true to say that most of these offences are serious.

³⁷ For further discussion of the 1984 Act and on the meaning of “a more severe penalty” see Walsh *Criminal Procedure* (Thomson Round Hall 2002) at 226.

³⁸ See further Walsh *Criminal Procedure* (Thomson Round Hall 2002) at 166.

³⁹ O’Connor (1990) ICLSA 90/34-04.

⁴⁰ 462 *Dáil Debates* Col 1363.

⁴¹ A drug trafficking offence includes, the manufacture, production, preparation, importation, exportation, supply, offering to supply, distribution or transportation of a controlled drug.

⁴² For example, regulations enacted under section 5(1)(a) of the *Misuse of Drugs Act 1977* concerning the transportation of controlled drugs would not constitute serious offences on the basis of the penalty that applies to

4.22 We consider the scope of offences which attract sampling powers in other jurisdictions in the next chapter and consider whether the breadth of offences should remain as currently defined.⁴³

4.23 There should also be a power in existence which allows for another sample to be obtained in the event of the first sample becoming contaminated, destroyed or lost. The English law provides a model for the approach that could be adopted in Ireland. In the UK the taking of another sample from a person is permitted by the *Criminal Justice and Police Act 2001 (Commencement No. 8) Order 2002*. Another sample may be taken from a person if the first sample is insufficient or unsatisfactory. The taking of another sample is also permitted if the first sample is lost, destroyed or contaminated or the analysis of the first sample has proved unreliable. The additional sample must be taken from the person within one month from the time at which the first sample was obtained. Consideration should be given to implementing a similar provision in this jurisdiction to clarify the position.

(3) Classification of Samples

4.24 Section 2(1) of the 1990 Act specifies the types of sample that may be taken as follows:

“[A]ll or any of the following samples, namely—

(a) a sample of—

(i) blood,

(ii) pubic hair,

(iii) urine,

(iv) saliva,

(v) hair other than pubic hair,

(vi) a nail,

(vii) any material found under a nail,

(b) a swab from any part of the body other than a body orifice or a genital region,

them under section 27(10)(b) of this Act. However, they would constitute “drug trafficking offences”.

⁴³ See paragraphs 5.25-5.36.

- (c) a swab from a body orifice or a genital region,
- (d) a dental impression,
- (e) a footprint or similar impression of any part of the person's body other than a part of his hand or mouth [which is governed by the 1984 Act].”

There is no overt classification of these types of sample, as there is in PACE, which categorises samples as either ‘intimate’ or ‘non-intimate’.⁴⁴ However, two levels of protection are provided for under the 1990 Act which succeeds in creating a distinction between intimate and non-intimate samples.

4.25 Those samples under the 1990 Act which require further safeguards to be complied with before they can be taken, and therefore can properly be described as ‘intimate’ samples, are blood, saliva, pubic hair, a swab from a body orifice or a genital region, and a dental impression. In respect of these samples, section 2(8) provides that a sample may only be taken by a medical practitioner, or in the case of a dental impression, by a dentist. The other forms of samples which are considered less intimate can be taken by the Gardaí themselves. This distinction between ‘intimate’ and ‘non-intimate’ samples is more apparent on further reading of section 2(4)(b) in relation to consent. Those intimate samples, listed above, which entail a more intrusive procedure may be taken only with the appropriate written consent of the person from whom the sample is sought. No such written consent is necessary for the ‘non-intimate’ samples.

4.26 A point that should be emphasised is that more often than not it is either a blood sample or buccal swab which is taken from the inside of the person’s mouth, which is required for DNA profiling.⁴⁵ A blood sample would of course have to be taken by a medical

⁴⁴ See section 65 of the PACE Act, which sets out the definition of these samples. This defines an “intimate sample” as “(a) a sample of blood, semen or any other tissue fluid, urine or pubic hair; (b) a dental impression; (c) a swab taken from a person’s body orifice other than the mouth”. A “non-intimate sample” is described as “(a) a sample of hair other than pubic hair; (b) a sample taken from a nail or from under a nail; (c) a swab taken from any part of a person’s body including the mouth but not any other body orifice; (d) saliva; (e) a skin impression”.

⁴⁵ See paragraph 1.36.

practitioner or a registered nurse and the same considerations apply in respect of a dental impression. It is plain that taking pubic hair, or a swab from the genital region or from *most* body orifices, entails a particularly intrusive procedure. In the context of obtaining a sample for DNA profiling the preferred method is the mouth swab as it requires no particular expertise, is painless, can be self-administered and is not of a particularly intrusive nature. A number of swabs can be taken for initial profiling and independent testing, if required. However, as the Model Criminal Code Officers Committee (“MCCOC”) in Australia have explained:

“[W]here the person from whom the sample is being taken agrees to the procedure it can be very simple and is not invasive. However, where a person does not consent and resists the procedure, the procedure would not fairly be described as being non-intimate. Placing something inside someone’s mouth against the person’s consent is invasive.”⁴⁶

4.27 The legislature in the UK has been quick to react and amend PACE to meet the challenges of DNA profiling and to keep in step with advances in technology: namely, the improved success in profiling from mouth swabs. Section 65 of PACE was amended by section 58 of the *Criminal Justice and Public Order Act 1994* which shifted saliva and mouth swabs from the intimate to non-intimate category in order to facilitate the taking of samples from suspects and offenders without the need to engage the services of a medical practitioner, which proved inconvenient.⁴⁷ An intimate sample is now defined as a dental impression or a sample of blood, semen, or any other tissue fluid, urine, or pubic hair, or a swab taken from a person’s body orifice other than the mouth. Feldman comments that this ‘down-grading’ of what constitutes an intimate sample lends

⁴⁶ As cited in the Australian Law Reform Commission and the Australian Health Ethics Committee *Report – Essentially Yours: The Protection of Human Genetic Information in Australia* (ALRC 96, 2003) at paragraph 41.26.

⁴⁷ Section 80(2) of the *Criminal Justice and Police Act 2001* has further amended section 62 of PACE to permit a registered nurse to take intimate samples.

weight to the “thin end of the wedge” critique of new police powers, in that the powers are incremental in nature.⁴⁸

4.28 Head 12 of the Scheme of the *Criminal Justice Bill 2003* indicates an intention to follow suit in this respect and shift saliva and mouth swabs into the ‘non-intimate’ category. This could significantly assist the authorities in obtaining a DNA profile from both suspects and offenders because a medical practitioner is not needed and consent is not a prerequisite to obtaining a ‘non-intimate’ sample. However, the advisability and extent of any force used to obtain even ‘non-intimate’ samples together with the questions as to what safeguards are necessary must be given the most careful consideration. This change might also not prove viable in practice. At present it is considered by Gardaí to be too dangerous to obtain mouth swabs forcibly.⁴⁹ However, in the event of a prisoner shaving off hair to avoid samples being obtained, a buccal swab could prove to be the only option available to obtain a DNA sample without consent.

4.29 A mention of hair root samples should be made here. As described by MCCOC, experience in the UK has shown that where a person is implacably hostile to undergoing a forensic procedure, force is used by officers specially trained in the art of obtaining hair root samples. These are also arguably the least invasive ‘non-intimate’ source from which a DNA profile can be generated. Head 12 of the Scheme of the *Criminal Justice Act 2003* provides that a hair sample may be “taken either by cutting hairs or by plucking hairs singly with their roots.” It also provides that “no more should be plucked than the person taking the sample reasonably considers to be necessary to constitute a sufficient sample.”

4.30 Section 63A of PACE, as inserted by the *Criminal Justice and Public Order Act 1994*, is in similar terms. The revised PACE Code of Practice which ensued has further clarified the practice of obtaining a hair sample, as follows:

“i) where a hair sample is being taken for DNA purposes, the suspect should be permitted a reasonable choice as to what part of the body he wishes the hairs to be taken from;

⁴⁸ Feldman *Civil Liberties and Human Rights in England and Wales* (Oxford University Press 2002) at 410-412.

⁴⁹ See paragraphs 4.45-4.47.

- ii) when hairs are plucked, they should be plucked individually unless the suspect prefers otherwise; and
- iii) no more should be plucked than the person taking them reasonably considers necessary for a sufficient sample – no fewer than 10 hairs should be submitted.⁵⁰

These modifications appear to the Commission to be sensible and go some way to ameliorating the inevitable encroachment on bodily integrity and privacy rights that is entailed in obtaining such a sample.

4.31 *The Commission is of the view that similar modifications to those in the revised Police and Criminal Evidence Act 1984 Code of Practice outlining the procedure for taking a hair sample should be introduced in this field by way of either Code of Practice produced by the Gardaí themselves or through Ministerial regulations passed under section 5 of the 1990 Act.*

(4) *Safeguards Against Arbitrary Sampling*

4.32 In addition to the requirement that a comparator sample may only be obtained in relation to the investigation of an offence which falls within the scope of those offences set out in the 1990 Act above,⁵¹ and, depending on the type of sample, who may be permitted to take it,⁵² certain other conditions must also be met. Although the four topics that follow may be described as either conditions or prerequisites to taking a sample, they are actually safeguards against the arbitrary exercise of power by the Gardaí. Because the taking of bodily samples entails an infringement of the right to bodily integrity and privacy of the person, it is, of course, proper that a sample may not be taken merely because it might be helpful to the investigation. There is a need for safeguards and prerequisite conditions to be in place.

⁵⁰ Home Office Circular 16/95: National DNA Database (31 March 1995) at paragraph 5.

⁵¹ See paragraphs 4.16-4.20.

⁵² See paragraphs 4.24-4.26.

(a) *Authorisation*

4.33 The first condition is that authorisation must be given for sampling by an officer not below the rank of superintendent,⁵³ which may be given orally but must be confirmed in writing as soon as is practicable.⁵⁴ This subsection therefore provides for some element of oversight by a more senior officer.⁵⁵

(b) *Suspicion of Involvement in an Offence*

4.34 The second condition is that the authorising officer must, under section 2(5)(a), have reasonable grounds:

“for suspecting the involvement of the person from whom the sample is to be taken—

(i) in a case where the person is in custody, in the offence in respect of which he is in custody, or

(ii) in a case where the person is in prison, in the commission of an offence under the Offences against the State Act 1939 or an offence which is for the time being a scheduled offence for the purposes of Part V of that Act or an offence to which section 4 of the Criminal Justice Act 1984 applies ...”

4.35 This condition has the effect of introducing a measure of objectivity to the process, but as O’Connor notes, there is a disparity between the legal standard that must be met, on the one hand, before arresting someone for an offence under section 30 of the 1939 Act and, on the other hand, before obtaining a sample from such an individual. The difference is that suspicion is a prerequisite for arrest, whereas reasonable suspicion is needed before being able to obtain a

⁵³ Section 2(4) states that “[a] sample may be taken under this section only if (a) a member of the Garda Síochána not below the rank of superintendent authorises it to be taken, and ...”

⁵⁴ Section 2(7) states that “[a]n authorisation under *subsection (4)(a)* of this section may be given orally but, if it is given orally, it shall be confirmed in writing as soon as is practicable.”

⁵⁵ Originally the analogous provisions, sections 62 and 63 of PACE, also provided that the authorising officer must not be below the rank of superintendent. However, this provision has also been ‘down-graded’ by subsequent amendment to the lower rank of inspector: *Criminal Justice and Police Act 2001* section 80.

bodily sample.⁵⁶ Presumably, some extra information or evidence, such as that obtained through interviewing the suspect, must be obtained before a ‘suspicion’ is transformed into a ‘reasonable suspicion’.

(c) Tend to Confirm or Disprove Involvement

4.36 In addition to reasonable grounds for suspecting the involvement in those offences set out in the legislation, the authorising officer must, under section 2(5)(b), also have reasonable grounds:

“for believing that the sample will tend to confirm or disprove the involvement of the person from whom the sample is to be taken in the said offence.”

This is an important safeguard against the *unnecessary* taking of samples from suspects. In other words, it is only to be used in cases where there is biological evidence found on the victim or at the scene of crime thought to be left by the perpetrator. Moreover, it would seem that such material must also be capable of either yielding a DNA profile or other comparative analysis. This also prevents the Gardaí from conducting a fishing expedition for evidence which may implicate the suspect in an offence other than the one for which he is detained:– if the authorities wish to obtain evidence for a different offence then, quite simply, the individual should be arrested for that offence and a sample taken under the appropriate provisions.

(d) Explanation to Suspect

4.37 Under section 2(6), before the Gardaí may take a sample (whether ‘intimate’ or ‘non-intimate’) from those detained (but not those *in prison*),⁵⁷ or seek the consent of such a person they must inform that person:

“(a) of the nature of the offence in which it is suspected that that person has been involved,

(b) that an authorisation has been given under *subsection (4) (a)* of this section and of the grounds on which it has been given, and

⁵⁶ See O’Connor’s comments on this in (1990) ICLSA 90/34-06.

⁵⁷ This explanation is not required in respect of persons in prison under section 2(2) of the 1990 Act, which is somewhat of an anomaly.

(c) that the results of any tests on the sample may be given in evidence in any proceedings.”

These provisions mirror the warning given under the Judges’ Rules in the context of incriminating statements and clearly intend to communicate to the detained person their predicament and the purpose and effect of sampling. O’Connor suggests that “[t]he obligation to inform stems, perhaps, from a recognition of the human dignity of the person and as a preliminary to the taking of a sample, particularly an intimate sample, a person should be given information of the kind specified in the paragraph.”⁵⁸ This stage is also a step towards obtaining the consent of the individual where required, but it may be open to question, in view of the inherently coercive nature of the criminal investigation, whether consent is in fact always freely given.⁵⁹

4.38 The information must be given in a form that is readily understandable and not overly complicated having regard to the particular circumstances of the person submitting to the taking of the sample. In this respect, the recommendations of the Parliament of New South Wales Legislative Standing Committee on Law and Justice (“NSW Review”) are instructive.⁶⁰ It recommended that the request for consent to the taking of the sample should be in an understandable form. It also recommended that a plain English version of the consent information that should be provided should be drafted.

4.39 *The Commission recommends that the explanation for the reason and basis for taking samples must be given in a readily understandable manner, using plain language.*

4.40 In respect of the taking of samples generally, the Human Rights Commission (“HRC”) suggested that a number of safeguards should be complied with when taking bodily samples.⁶¹ Given that

⁵⁸ O’Connor (1990) ICLSA 90/34-07.

⁵⁹ See paragraphs 4.43-4.44.

⁶⁰ Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) at paragraphs 5.101 – 5.110.

⁶¹ Human Rights Commission *Observations on the Scheme of the Criminal Justice Bill 2003* 14 January 2004. Available at: <http://www.ihrc.ie>.

the Commission is broadly in favour of these safeguards, it is useful to set these out here. They are as follows:

- “(i) the taking of bodily samples should be carried out in circumstances affording reasonable privacy to the suspect;
- (ii) the taking of bodily samples should be carried out in the presence or view of a person who is of the same sex as the suspect;
- (iii) the taking of bodily samples should not be carried out in the presence or view of a person whose presence is not necessary for the purposes of the forensic procedure;
- (iv) there should be no questioning during the taking of bodily samples;
- (v) the taking of bodily samples should not involve any cruel, inhuman or degrading treatment;
- (vi) the taking of bodily samples should be carried out by specified professionals including nurses, medical practitioners, and dentists depending on the procedure;
- (vii) a child or incapable person should be entitled to have present a parent, guardian, legal practitioner or other independent person who is not a member of the Garda Síochána during the taking of the bodily samples;
- (viii) the number of members of the Garda Síochána present during the taking of bodily samples must not exceed that which is reasonably necessary to ensure that the procedure is carried out effectively;
- (ix) the taking of bodily samples must be video recorded in all circumstances unless the suspect objects to the video recording and the suspect must be informed of the reasons for the video recording;
- (x) the suspect should have the right to an interpreter where he or she does not speak English as his or her first language;

(xi) the suspect should have the right of access to legal advice of his or her choice to decide the implications of refusing to give a bodily sample.”⁶²

It submitted that these safeguards should be provided for in a set of formal guidelines in a Schedule appended to the proposed Bill or by Ministerial order. The Commission agrees that safeguards similar to those suggested by the HRC should be implemented in the form of a Code of Practice. Such safeguards would ensure that an appropriate balance is struck between the bodily integrity rights of the suspect and wider societal interests.

4.41 One element that is omitted from the suggestions of the HRC is information regarding the type of forensic procedure and therefore the type of sample that is proposed to be taken. The type of sample is important in terms of the intrusiveness of the procedure used to obtain it. An individual may be vehemently opposed to one procedure but not another. Some people have a fear of needles and would accordingly be unlikely to consent to a blood sample being taken – even by a pin prick on the finger – whereas, they may be comfortable with providing a mouth swab or some hair root samples for analysis. The absence of choice has been highlighted by the Australian Law Reform Commission in its Report on *The Protection of Human Genetic Information in Australia*.⁶³ This is a matter that is of particular relevance when contemplating a forensic procedure in the absence of consent.⁶⁴

4.42 *The Commission recommends that safeguards similar to those recommended by the Human Rights Commission, in respect of the taking of bodily samples, should be provided for in a Code of Practice. In addition to these safeguards, so long as the particular forensic test may be conducted on the sample, the Commission is of the view that a certain amount of latitude should be given to individuals to choose the type of sample to be obtained.*

⁶² Human Rights Commission *Observations on the Scheme of the Criminal Justice Bill 2003* 14 January 2004 at 34. Available at: <http://www.ihrc.ie>.

⁶³ Australian Law Reform Commission and the Australian Health Ethics Committee *Report – Essentially Yours: The Protection of Human Genetic Information in Australia* (ALRC 96, 2003) at paragraphs 41.31–41.36.

⁶⁴ See paragraphs 4.45–4.47.

(5) Consent and Reasonable Force

4.43 Section 2(4)(b) provides that those ‘intimate’ samples may only be taken if “appropriate consent” has been given in writing.⁶⁵ Section 2(10) defines “appropriate consent” as meaning:

“(a) in the case of a person who has attained the age of 17 years, the consent of that person;

(b) in the case of a person who has not attained the age of 17 years but has attained the age of 14 years, the consent of that person and of a parent or guardian of that person; and

(c) in the case of a person who has not attained the age of 14 years, the consent of a parent or guardian of that person.”

This subsection raises a number of issues in relation to what amounts to appropriate consent. These issues are examined in more detail by Feldman in the context of the analogous provisions contained in PACE.⁶⁶ For example, Feldman argues that there are serious doubts as to whether it is proper to allow a parent or guardian to give consent on behalf of a child who is competent, as in *Gillick*,⁶⁷ and is refusing consent. This and further issues are also examined by O’Connor, who questions whether a 13 year old’s constitutional right to bodily integrity may be infringed where that child objects to the taking of a bodily sample, but whose parents or guardians consent under section 2(10)(c). As a result, the Australian Law Reform Commission (“ALRC”) recommended that a forensic procedure should only be carried out on a child of 12 years or more if the child and the parents consent to it.⁶⁸ O’Connor also highlights that there may be a difficulty if one parent consents to the taking of an intimate sample,

⁶⁵ See paragraph 4.24.

⁶⁶ Feldman *Civil Liberties and Human Rights in England and Wales* (Oxford University Press 2002) at 410-411.

⁶⁷ The case of *Gillick v West Norfolk and Wisbech Area Health Authority* [1986] AC 112 establishes that a child may be competent to consent to medical treatment when they are under the age of 16 so long as the child can understand what they are consenting to and the implications of it.

⁶⁸ Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) Recommendation 41-3.

but the other does not.⁶⁹ In addition to this, section 23 of the *Non Fatal Offences Against the Person Act 1997* provides that a minor who has attained the age of 16 may consent to surgical, medical or dental treatment without the consent of their parents or a guardian. However, under section 2(10) of the 1990 Act, a person must be 17 before they can give an effective consent on their own behalf.

4.44 As well as that, any child or parent consenting on behalf of the child must be given the information in a form that can be understood by them. The ALRC criticised the fact that in the Australian legislation there was no requirement to give any information to the child on the procedure even though they would be the subject of this procedure.⁷⁰ It is therefore also important that the information be imparted to the child in a form which is understood.

4.45 As we also noted above,⁷¹ for those samples that fall within the ‘non-intimate’ category there is no obligation on the Gardaí to obtain the consent of the individual concerned. Implicit in this is that the Gardaí may use reasonable force to obtain a ‘non-intimate’ sample.⁷² One view is certainly that *if* it is intended to empower the Gardaí to use reasonable force and in consequence interfere with an

⁶⁹ See further O’Connor (1990) ICLSA 90/34-07 – 34-08.

⁷⁰ Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) Recommendation 41-3.

⁷¹ See paragraph 4.24.

⁷² Indeed, the Minister for Justice during the Oireachtas debates 396 *Dáil Debates* stated that the Bill was:

“[I]ntended to give the Garda power to take samples from persons they reasonably suspect of involvement in serious crime. Forensic evidence, particularly a test like DNA profiling, can play such an important part in establishing the guilt or indeed the innocence of a suspect that it is in the public interest that the Garda should be able to obtain samples for that purpose *even if this does mean some interference with personal rights or freedoms.*

... [O]n the question of compulsion, the Bill places an obligation on suspected persons to give or allow samples to be taken. It does not provide a free choice in the matter. Depending on the type of sample which is required, the Bill either empowers the Garda to take the sample using *reasonable force* if need be or obliges a suspect to allow a sample to be taken if he is to avoid the possibility of an inference being drawn against him at a subsequent trial”. (Emphasis added).

individual's personal rights and freedoms, as guaranteed by the Constitution and the ECHR, then this should be done explicitly – to use ECHR vernacular, prescribed by law and the parameters for such force should be clearly set out.

4.46 Head 10 of the Scheme of the *Criminal Justice Bill 2003* proposes that, in addition to the taking of photographs and prints, reasonable force may be used to obtain 'non-intimate' samples, where necessary.⁷³ There are some potential difficulties with this, in particular the use of reasonable force in obtaining a mouth swab. The power exists in the UK to do this, but it is considered dangerous not only for the person seeking to obtain the sample (the subject may bite them), but also for the individual from whom the sample is sought to be obtained, as injury may be suffered.

4.47 Moreover, it has been stated that "a prisoner, as a result of being imprisoned, is peculiarly vulnerable to arbitrary and unlawful action."⁷⁴ The same may be said of those merely in custody on suspicion of having committed an offence. The nature of custody, as with imprisonment, is such that those individuals detained are the most at risk of having their rights violated and, accordingly, are in need of extra protection from the arbitrary exercise of power. Not only does the nature of detention give one cause to question the reality of consent, but also the appropriateness of the use of even 'reasonable' force.

4.48 The Human Rights Commission in its *Observations on the Scheme of the Criminal Justice Bill 2003* has recently made a number of recommendations in respect of the use of force to obtain non-intimate bodily samples.⁷⁵ It recommended that "authorisation to take a sample without the consent of the person under investigation should not be given by a member of the Garda Síochána unless he or she is satisfied that the carrying out of the forensic procedure without consent is justified in all the circumstances".⁷⁶ In assessing whether

⁷³ Scheme of the *Criminal Justice Bill 2003* head 10. Available at: <http://www.justice.ie>.

⁷⁴ Per Lord Wilberforce in *Raymond v Honey* [1983] 1 AC 1 at 14.

⁷⁵ Human Rights Commission *Observations on the Scheme of the Criminal Justice Bill 2003* 14 January 2004. Available at <http://www.ihrc.ie>.

⁷⁶ *Ibid* at 33.

the carrying out of the forensic procedure is justified in all the circumstances, the Garda should be required to balance the public interest against the right to privacy and the right to bodily integrity of the suspect. The HRC set out a number of matters to be considered in balancing these interests including the seriousness of the offence, the religious and cultural beliefs of the suspect, whether there is another means by which evidence confirming or disproving the involvement of the suspect in the offence can be attained and also the suspect's reasons for refusing consent.

4.49 In addition to this, in order for the interference with the individual's bodily integrity to be justified,⁷⁷ appropriate safeguards should be implemented to ensure that force in excess of reasonable force is not used. In this respect, we endorse the recent recommendations of the Human Rights Commission on this provision.⁷⁸ It observed in respect of the power to use reasonable force to obtain bodily samples that:

“The use of force by members of the Garda Síochána should only occur when it is strictly necessary and to the extent required for the performance of their duty. In particular, where persons suspected of having committed a crime are in detention the use of force should only occur in exceptional circumstances”.⁷⁹

The HRC commented that in order for the infringement to be a proportionate interference with an individual's right to bodily integrity, certain safeguards should be introduced. It suggested that there should be adequate police training in the taking of samples, comprehensive custody records should be kept and that a prisoner should have a right of access to a medical practitioner. It has argued that the use of reasonable force in obtaining bodily samples should only be used on the basis that video-recording facilities are installed at Garda stations, or alternatively, there should be an obligation on the

⁷⁷ See the discussion on the right to bodily integrity in paragraphs 3.20-3.28.

⁷⁸ Human Rights Commission *Observations on the Scheme of the Criminal Justice Bill 2003* 14 January 2004. Available at: <http://www.ihrc.ie>.

⁷⁹ *Ibid* 35.

Gardaí to take a suspect to a station where there are such facilities.⁸⁰ A further safeguard which would go some way towards protecting the rights of suspects would be to permit their solicitor to be present at the interview and when either consent is sought or cooperation is required.

4.50 *The Commission recommends the implementation of safeguards to ensure that the power to use reasonable force is not arbitrarily exercised. These safeguards should be similar to those suggested by the Human Rights Commission and could be implemented in the form of a Code of Practice.*

(6) Enforcement and Compulsion

4.51 Section 2(9) of the 1990 Act makes it an offence for a person to obstruct or attempt to obstruct the Gardaí or any other person acting under the powers conferred by section 2(1). This subsection, together with section 3 which permits adverse inferences to be drawn from any refusal to consent to a forensic procedure, without reasonable cause, is aimed at encouraging the person detained to consent and submit to a forensic procedure. Not only do they commit an offence if they make it difficult for the Gardaí to obtain a sample, but any refusal of consent to giving a non-intimate sample can count against them subsequently.

4.52 Although these two sections represent the elements of enforcement and compulsion in the 1990 Act, it is arguable, in view of the proposed increased use of force in obtaining non-intimate samples from which a DNA profile may be generated, whether these provisions will come into play at the later stage of proceedings. One can readily envisage that the mere existence of a possible further offence being pursued and an adverse inference being drawn will act as motivation to comply, so much so that refusal of consent and obstruction may be rare.

4.53 One issue that arises in respect of section 3 is its potential interference with the individual's privilege against self incrimination. Drawing an adverse inference in this instance is a form of "DNA request surveillance".⁸¹ It involves seeking to rely on a refusal to

⁸⁰ See also the views expressed by the Reid Professor of Law at Trinity College Dublin, Ivana Bacik reported in the *Irish Examiner* 29 August 2003 in this regard.

⁸¹ See paragraph 3.34.

consent to a forensic procedure as a sign that the individual has “something to hide”. However, it is also apparent that the privilege against self incrimination can justifiably be limited in the public interest. The legitimate aim of crime investigation is furthered here. On the basis of the principles enunciated earlier, it seems that the limit on the privilege is proportionate.⁸² First, under this provision, no one can be convicted on the basis of inferences alone. Secondly, under this provision, there is no obligation to draw inferences. These limits on the power to draw inferences lead the Commission to conclude that the measure is proportionate.

(7) *Destruction of Samples and Records*

4.54 The important subject of the destruction of samples and records is governed by section 4 of the 1990 Act, which states:

“(1) Subject to *subsection (5)* of this section, every record identifying the person from whom a sample has been taken pursuant to *section 2* of this Act shall, if not previously destroyed, be destroyed as this section directs and every sample identified by such record shall be destroyed in like manner.

(2) Where proceedings for any offence in respect of which a person could be detained under section 30 of the Offences against the State Act, 1939, or section 4 of the Criminal Justice Act, 1984, are not instituted against the person from whom the sample was taken within six months⁸³ from the taking of the sample and the failure to institute the proceedings within that period is not due to the fact that he has absconded or cannot be found, the destruction of the record and the sample identified by such record shall be carried out on the expiration of that period unless an order has been made under *subsection (5)* of this section.

(3) Where proceedings have been so instituted and the person is acquitted or discharged or the proceedings are discontinued, the destruction of the record and the sample identified by such record shall be carried out on the

⁸² See paragraph 3.35.

⁸³ But see the proposal to extend the period to 12 months: Scheme of the *Criminal Justice Bill 2003* head 12. Available at: <http://www.justice.ie>.

expiration of twenty-one days after the acquittal, discharge or discontinuance unless an order has been made under *subsection (5)* of this section.

(4)(a) Where a person from whom a sample has been taken is the subject of an order under subsection (1) or (2) of section 1 of the Probation of Offenders Act, 1907, the destruction of the said sample and every record identifying such sample shall be carried out on the expiration of 3 years from the making of the order; provided that he has not been convicted of an offence to which section 4 of the Criminal Justice Act, 1984, applies during that period.

(b) *Paragraph (a)* of this subsection shall not apply to an order under section 1 (2) of the Probation of Offenders Act, 1907, discharged on the appeal of a person against conviction if on appeal his conviction is affirmed.”

This section has the effect of imposing an imperative against the retention of both records and samples relating to those individuals who for various reasons, as provided for in section 4, may be regarded as innocent of the offence for which the samples were taken in the first place. For example if the person who is the source of the comparator sample has been acquitted of the offence for which the sample was taken, records and samples must be destroyed within 21 days after the acquittal.

4.55 The most important part of section 4 is subsection (2), which permits the authorities to hold on to samples and records during the investigation of an offence. The current time limit is 6 months, but it is proposed in head 12 of the Scheme of the *Criminal Justice Bill 2003*, on the foot of a recommendation from the Leahy Group, that this be extended to 12 months. It was observed in the Leahy Report that:

“[t]here are balancing considerations to be taken into account here, principally the operational desirability of retention of samples set against what must be accepted as the principle that there can be no open-ended retention of identifiable samples from unconvicted suspects. On balance, we propose that the existing period of retention

should be extended to twelve months, with provision for further retention on judicial authorisation.”⁸⁴

Presumably this is intended to allow the Gardaí more time to investigate an offence and collect evidence against a suspect. Six months is not seen as an adequate time within which to investigate an offence. Maintaining the retention period at six months would therefore result in an excessive amount of requests for judicial authorisation to extend the period for which the sample may be retained, a power which is discussed below.

4.56 These provisions are analogous to the legislation governing the retention of photographs, fingerprints, and palmprints: in section 8 of the *Criminal Justice Act 1984*.⁸⁵ However, whereas section 8(5) gives the individual concerned (or their solicitor or someone authorised by them in writing) the right to witness the destruction, there is no equivalent provision in the 1990 Act. This could be as a result of the practical difficulties of destroying the sample and also because, the destruction in this instance, where work has been completed on the sample, is carried out by the Forensic Science Laboratory as opposed to the Gardaí. However, there does seem to be an anomaly in affording a lesser degree of protection to DNA than to fingerprints. DNA reveals significantly more personal information about an individual than a fingerprint.

4.57 By way of saver, section 4(5) of the 1990 Act provides that the court may, on application, authorise retention for a longer period than 6 months in the event of there being a good reason why the samples should not be destroyed. It is notable that this differs from the 1984 Act. Section 8(7) of the 1984 Act, dealing with fingerprints and photographs, limits such an extension to a further six months only. Again, this anomaly may be explained on the basis that during the Oireachtas debates concern was expressed that limiting the period to six months would deprive those from whom a sample was taken from authorising their records to be kept on file. The argument is that a known individual may wish to take this option in preference to being asked to provide fresh samples on a regular basis. This could

⁸⁴ *Report of the Expert Group Appointed to Consider Changes in the Criminal Law* (1998) at 41. Available at: <http://www.justice.ie>.

⁸⁵ This is discussed in further detail at paragraph 4.07.

be catered for by including a consent provision and by placing the profile of such a person on a volunteer database.⁸⁶

4.58 This is a matter that falls to be considered in the next chapter when recommending law in this field, but it is worth mentioning that the Council of Europe Committee of Ministers recommended that “[s]amples and other body tissues, or the information derived from them, may be stored for longer periods: (i) when the person concerned so requests ...”⁸⁷

4.59 Another concern which should be mentioned here is that at present there is scope to obtain samples outside the legislative framework.⁸⁸ The safeguards which attach to samples obtained under the legislative provisions do not apply to ‘volunteers’. These ‘volunteers’ may include not only ‘suspects’ but also those who provide prints to exclude themselves and assist the investigation. For example, the victim’s sexual partner in relation to a sexual assault case or a victim’s flatmate (or even friends who have visited) in a burglary case. The anomaly is that the safeguards that exist in the legislative framework do not apply to those donations.

4.60 Ensuring that the taking of bodily samples is solely governed by legislation would also offer clarification in respect of the status of the bodily samples. Once the bodily samples are obtained under the legislative framework, they become evidence or potential evidence in the criminal investigation as opposed to the property of the person from whom the sample was taken. Consequently, questions of ownership do not arise in this instance. The samples are merely part of the evidential process of solving crime.

4.61 *The Commission recommends that, as with fingerprints, the taking of bodily samples should be governed by legislation which should encompass all samples, even those taken on a voluntary basis.*

⁸⁶ See paragraphs 5.95-5.105.

⁸⁷ Council of Europe Committee of Ministers Recommendation No R (92) 1 on the use of deoxyribonucleic acid (DNA) within the framework of the criminal justice system at paragraph 8. Available at: <http://www.coe.int/cm>

⁸⁸ Doubt has been cast on the lawfulness of this by the decision of McMahon J in *The People (DPP) v Carroll* Circuit Criminal Court 24 February 2004 in respect of fingerprints.

CHAPTER 5 THE TAKING OF THE DNA SAMPLES AND THE RETENTION OF THE DNA PROFILES

Introduction

5.01 This chapter and Chapter 6 are at the very centre of this Paper. As explained, the essential steps in the use of DNA are the taking of the samples and its analysis to yield a profile. Thereafter, the question arises as to whether the profile and samples should both be retained or only the profile or neither. In the present chapter, we address the question of whether, and subject to what conditions, the sample may be taken and the profile both used and retained. We emphasise that this chapter concerns the retention and use of DNA profiles only. This is so even though much of the comparative legislation considered will refer to the retention or destruction of both samples and records. In the following chapter, we deal with the further question of whether the sample itself should be retained.

5.02 In this chapter, we adopt an essentially thematic approach and draw upon not only those general policy considerations set out in Chapter 2 and the legal principles discussed in Chapter 3, but also any relevant comparative material. As we have already observed, the composition of any database of DNA profiles is primarily dependant on whether the authorities may lawfully obtain a bodily sample from an individual from which a profile can be generated. As part of the examination of the present law in relation to carrying out forensic procedures (and obtaining photographs and prints), outlined in the previous chapter, we highlighted a number of anomalies that need to be addressed, some of which are included in the Scheme of the *Criminal Justice Bill 2003*. However, ancillary to the issue of whether the authorities may obtain a bodily sample in order to generate a profile, the composition of a DNA database also depends on whether the authorities are permitted to retain this profile for storage and search on a database. The present law, as indicated in the

previous chapter, is framed in such a way that retention is the default position. In other words while there are legislative provisions which direct (in certain widely drawn circumstances) that the profiles (and samples) must be destroyed, not all profiles and samples have been taken under statutory authority and in these cases, the samples may be retained. Indeed, convicted offenders (other than those dealt with under the *Probation of Offenders Act 1907*) and volunteers are in the same position in relation to both bodily samples and DNA profiles and prints and photographs, in that there is nothing directing that these should be destroyed. We have indicated that the present situation is less than satisfactory and our view is that no bodily samples and DNA profiles (and for that matter photographs and prints) should be outside the purview of legislation and the safeguards that come with regulation by statute.¹

5.03 As regards the presentation of this chapter, in Part A, we examine whether forensic DNA profiles can be retained at all in principle. In Part B, the underlying justifications for both sampling an individual and retaining the resulting DNA profile are outlined. In Parts C-E, we consider how these justifications might apply to the sampling of and retention of profiles obtained from suspects (including those subsequently convicted), those already convicted, and various categories of ‘volunteer’. In these Parts we survey what choices have been made in other jurisdictions and consider some of the key provisions which provide for sampling and retention and destruction of profiles. We also examine some of the important decisions of foreign courts in relation to the most crucial constitutional conundrums that face policy makers in this field. We consider whether a comprehensive database which would include the entire population should be established. Finally, we discuss the issue of retrospection. This entails examining whether the profiles obtained voluntarily outside the ambit of the 1990 Act and the profiles obtained under the 1990 Act, which have not yet been destroyed, may be retained under our proposed legislative framework.

¹ See paragraph 4.61. It should be noted that there is some uncertainty over the lawfulness of this method of obtaining samples. See paragraph 4.14.

A Retention of Forensic DNA Profiles in Principle

5.04 Before we turn to the specific issues of the sampling of various categories of persons and the retention of their DNA profiles and the justifications for this sampling and retention, it must be discussed whether DNA profiles should be retained at all in principle.

5.05 The distinction between the biological sample and the profile should be emphasised. This distinction is very important in determining whether the sample or the profile or both should be kept or destroyed. Accordingly, before considering the various options that may be taken in respect of each, it is appropriate to go into some detail about what a profile reveals about the source of the sample.

5.06 From the outset the same observation that was made above,² is equally applicable here: namely, the threat to privacy through the collection, use and storage of genetic information is only as great as the extent to which we are able to understand the information. This argument has been well made out by Redmayne in the context of a DNA database, as follows:

“[E]ven if we were given information about a person’s entire DNA sequence, there would be relatively little we could say for certain about him or his future. In the context of the privacy implications of the DNA database, an even more important point is that the database does not even contain the entire sequence. It only contains DNA profiles: information about the DNA at several loci (sites) on the genome. These loci form only a tiny portion of a person’s DNA. The extent to which the database is a threat to privacy, then, depends on whether these profiles contain important information about the lives of the donors of the profiles.”³

5.07 The discussion above on current profiling techniques and generally about DNA, indicated that it is the non-coding areas of the DNA molecule that are used in forensic work.⁴ We explained that the

² See paragraph 2.31.

³ Redmayne “The DNA Database: Civil Liberty and Evidentiary Issues” [1998] Crim L R 437 at 438.

⁴ See paragraphs 1.23-1.26.

reason for targeting non-coding rather than coding regions was because there is more variation between individuals in the non-coding areas and that these therefore provide a more suitable basis for identifying and differentiating between individuals. Genetic privacy did not feature in this as a specific issue. However, with the gradual realisation that non-coding regions may be more important and reveal much more than previously envisaged, genetic privacy has become a very serious concern. After all if the loci used in forensic profiling are truly non-coding then the storage on databases of DNA profiles represents no more of a threat to privacy than the storage of fingerprints and photographs. But, if the genetic information that cannot at present be interpreted were to become capable of interpretation in the future, then many of the concerns voiced in relation to the retention of samples may be equally applicable in respect of profiles.

5.08 The prospect that a forensic profile may be interpreted and that sensitive information may be derived about the source is not an entirely remote prospect. Although not used in forensic profiling, some STR loci which were thought to be non-coding may be linked to diseases, for example fragile X syndrome, myotonic dystrophy and Kennedy's disease.⁵ Even more worrying is the suggestion that one of the most commonly used loci in forensic profiling, THO1, may be associated with bi-polar illness.⁶ One commentator has suggested that if this association is confirmed then the use of THO1 in profiling should be discontinued in order to avoid inadvertent disclosure of what is obviously very sensitive genotype information. This association has not yet been shown to exist and there remains a large degree of conflict arising from differing scientific studies.⁷ All that can be said is that there are examples where STR loci originally thought to be 'non-coding' may be shown to reveal quite personal information about the source. These are compelling reasons for being extremely cautious in claiming that a forensic profile will never give rise to any privacy concerns. Consequently, the security,

⁵ Richards and Sutherland "Dynamic Mutations: A New Class of Mutations Causing Human Disease" (1992) 70 *Cell* 709.

⁶ d'Aloja "Ethical and Legal Issues of DNA Typing in Forensic Medicine: A Brief Survey on the Italian Situation" 88 (1997) *Forensic Science International* 75 at 77.

⁷ See *The Lancet* August 3 1996 336.

confidentiality and isolation of the forensic profile is a matter which should be approached with caution.

5.09 The threat to privacy through the retention of DNA profiles is not, however, restricted to the potential discoveries highlighted in the preceding paragraph, as there are more immediate ethical concerns. Whilst a profile reveals only a snippet of information about an individual's DNA at a number of loci along the vast DNA strand, the profile conclusively proves parentage and relatedness.⁸ By way of example, the remains of the Romanovs were identified using samples provided by the British Royal family and DNA testing in immigration disputes is now commonplace.⁹ Because a DNA profile reveals and confirms parentage and relatedness with such a high degree of certainty it is not difficult to envisage that the retention of a vast collection of profiles (particularly on a searchable electronic database) will give rise to some concerns about the privacy and confidentiality of information about a family, as it would be possible not only to confirm but also to disprove relatedness. Again the threat to what one may term 'familial privacy' is dependent on the relative inclusiveness of any database of profiles. If the database contained the entire population or even a substantial proportion of it, access to that database would enable someone to uncover potentially damaging information about families. Even with the most stringent security measures in operation the mere existence of a vast collection of profiles is a serious concern. Revelations that the man indicated as the father of a child on the birth certificate of that child is not in fact the biological father and also revelations that siblings are only half-siblings could cause unquantifiable distress.

5.10 However, if the database were to be made up of profiles taken from a relatively small and distinct group - for example those convicted or suspected of serious offences - then the threat would be correspondingly reduced. Some may argue that this is discriminatory, in the sense that such an approach would discriminate between those convicted or suspected of crimes and those who are not. This represents one of the crucial issues to be addressed in this Consultation Paper, but before this subject is tackled in full it is worth noting that, whilst arbitrary classifications and grouping is

⁸ See paragraph 1.30.

⁹ See paragraph 2.02.

objectionable, differences in treatment between different groups does not as such amount to discrimination, whether under the Constitution or the ECHR. The crucial issue is whether differentiation in treatment can be justified on some objective criteria, including the questions of reasonableness and proportionality. Indeed, the law currently ‘discriminates’ in relation to the long term storage of fingerprint records between offenders and those who have never come to the attention of the authorities. In any event, regardless of the nature of any database of profiles, which we consider later in this chapter, it is clear that access to and disclosure of profile information should be closely regulated and confined.

5.11 *The Commission is of the view that, at present, the secure storage of DNA profiles is not, in principle, objectionable.*

B Justifications for Sampling and Retention of Records

(1) General

5.12 At this point, it is useful to examine the underlying rationale and justifications for the sampling and retaining of DNA profiles. This will enable us to deduce the categories of persons, whose profiles should be retained on the database. In Chapter 2 we set out some general observations in relation to why investigatory authorities collect and retain certain information and evidence from all manner of individuals, but particularly those suspected of perpetrating crime.¹⁰ In this part it is appropriate to examine in more detail these underlying rationales since they purport to justify the interference with the rights to privacy and bodily integrity that the taking of samples and their retention necessarily entails.¹¹

(2) Evidential Significance Justification

5.13 At present, the justification for first obtaining a DNA profile under the *Criminal Justice (Forensic Evidence) Act 1990* is that it will “tend to prove or disprove involvement in an offence.”¹² In other words, the profile must have some ‘evidential significance justification’ in the investigation, for example because biological material thought to have emanated from the perpetrator has been

¹⁰ See paragraphs 2.11-2.14.

¹¹ See paragraphs 3.04 -3.28.

¹² Section 2(5)(b) of the 1990 Act. For further detail see paragraph 4.34.

found at the scene of crime. Comparator profiles are required not only to identify a potential suspect, but also to eliminate from further investigation as a prime suspect those who have been present innocently at the scene. Where a hair root sample (from which a profile may be generated) is found near the broken window of a house that has been burgled, it is essential to establish that the hair does not belong to anyone living in (or perhaps even those who have recently visited) the house. If the hair root sample is unaccounted for, in the sense that the source has not been identified as emanating from those innocently present, then perhaps in the absence of other evidence, this may provide a vital lead to the investigators. If an individual was observed close to the scene of the burglary, then a comparator sample would be required from that person in order to carry out a comparison with the supposed “crime stain” or hair root profile so as to determine whether that person or that person’s hair can be placed at the scene.

5.14 This justification, which is in the main applicable to *obtaining* samples, is particularly cogent in relation to the investigation of past and present crimes. This is because a profile may be compared to those profiles generated from biological material found at the scene of either the present crime or an historic crime.¹³ However, in relation to the investigation of a future crime, any evidential significance that the profile may have is speculative.

(3) *Intelligence Gathering or Database Justification*

5.15 Where the concern is with facilitating the detection of future crimes, the principal rationale is the intelligence gathering or database justification, which is more broadly applicable to *retaining* profiles than obtaining them. This argument is that retaining profiles, especially on a database in a searchable format, is not only a useful intelligence tool for investigating crimes which have been committed but also could have some deterrent value as regards the criminal activity of those whose profiles are stored on the database. The tool therefore has a dual function.

5.16 As regards the first function, the storage of profiles has two applications: first, where there is no match between the scene of crime stain profile and any of the database profiles, the investigatory authorities may exclude those individuals whose profiles are stored

¹³ See paragraph 2.11.

from further investigation;¹⁴ and secondly, where there is a match between a profile from a crime scene stain and a database profile, this provides useful intelligence¹⁵ to investigators, who may then seek to detain and question the individual concerned. This latter application may also be more broadly described as enabling the State to combat recidivism or ensure that those who repeatedly re-offend are apprehended quickly and dealt with appropriately.

5.17 Secondly, it is also possible that the storage on a database of profiles may have a deterrent effect on those contemplating criminal activity although in most cases this seems rather far-fetched (especially considering that proportionately a large number of offenders for which DNA evidence would be relevant would be sexual assaults).¹⁶ The effectiveness of profiling and the storage of profiles on a database are such that perpetrators are likely to be identified and linked to a crime even through the discovery of a single hair root sample at the scene. Although, it should also be noted that the countervailing argument is that criminals may become more adept at preventing their biological material being left at the scene of crime in the first place.

5.18 The difficulty is where one should draw the line: just because the storage of DNA profiles on a database may fulfil these two functions of detection and deterrence, can this justify retaining profiles across a broad spectrum of circumstances or for that matter justify the retention of everyone's DNA profile? This is as much a policy matter as it is a jurisprudential question and we pick up this thread when considering the substantive issues below.

¹⁴ It perhaps goes almost without saying that this is only when the authorities are near certain that the perpetrator is the source of the biological material.

¹⁵ We use the term intelligence here as opposed to *evidence* because it is the verification of the 'hit' by way of comparison with the profile generated from a second sample.

¹⁶ The other obvious shortfall in this is that any deterrent effect will only apply in relation to contemplated or premeditated crimes and will not include those crimes of a spontaneous nature. The dilemma is that those who commit so called 'crimes of passion' are perhaps more likely to leave biological material on their victims or at the scene inadvertently.

(4) ‘True Identity’ or Person Identification Justification

5.19 The final justification is in essence based upon the need to establish the true identity of the individual concerned. Apparently, in a significant number of cases those suspected of involvement in an offence when detained give a false name and details which are not always readily discoverable and then, once released on their own recognisance or on police bail, that individual may evade further action. Indeed, this was one of the main justifications provided by the Minister for Constitutional Affairs and Lord Chancellor, Lord Falconer, to the UK Parliament’s Joint Committee on Human Rights in explaining the proposals contained in the Government’s *Criminal Justice Bill* to further extend the power to take and retain fingerprints and samples.¹⁷

5.20 This argument has until now been primarily deployed in order to justify the carrying out of routine fingerprinting and photography and other traditional identification procedures on those arrested. An examination of US jurisprudence in relation to fingerprinting and other forms of ‘inventory’ would seem to suggest that in this context constitutional propriety is taken for granted. For example, in *Napolitano v United States*¹⁸ the 1st Circuit Court of Appeals stated that the “[t]aking of fingerprints [prior to bail] is universally standard procedure, and no violation of constitutional rights”. Also in *Smith v United States*¹⁹ the District Circuit Court of Appeals stated that “it is elementary that a person in lawful custody may be required to submit to photographing ... and fingerprinting ... as part of routine identification processes.”

¹⁷ Joint Committee on Human Rights *Eleventh Report of Session 2002-03 Criminal Justice Bill: Further Report* (9 June 2003 HL Paper 118 HC 724) at paragraph 48. These amendments propose to make sampling part of the ‘booking procedure’ that is carried out when someone is detained on suspicion of involvement in an offence.

¹⁸ 340 F2d 313, 314 (1st Cir 1965) cited in Kaye “The Constitutionality of DNA Sampling on Arrest” (2001) 10 *Cornell Journal of Law and Public Policy* 455, 486-487.

¹⁹ 324 F2d 879, 882 (DC Cir 1963) cited in Kaye “The Constitutionality of DNA Sampling on Arrest” (2001) 10 *Cornell Journal of Law and Public Policy* 455 at 487.

5.21 Moreover, in the particular context of DNA databasing, the 4th Circuit Court of Appeals in *Jones v Murray*²⁰ pointed to “universal approbation of ‘booking’ procedures that are followed for every suspect arrested for a felony, whether or not the proof of a particular suspect’s crime will involve the use of fingerprint identification”. The court also highlighted the state interests in “preserving a permanent identification record of convicted felons”. But as Kaye observes, the court, in concluding that the collection of DNA genotypes (like fingerprints) was justified to link an offender to a crime, “lost sight of the original rationale for fingerprinting and spoke only of ‘resolving past and future crimes’ in that “it is a well recognized aspect of criminal conduct that the perpetrator will take the usual steps to conceal not only his conduct, but also his identity.”²¹ Clearly, as Kaye implicitly says, the court in this case seems to be conflating both the (less embracing) evidential significance and database justifications, set out at (2) and (3) above, with the (more embracing) ‘true identity’ justification.

5.22 Despite this lack of specificity in analysis and in the application of the ‘true identity’ justification there remains some merit in its potential deployment in relation to the routine sampling of those individuals who have been arrested on suspicion of involvement in an offence.

5.23 However, the Commission concludes this section by noting that this justification is of future rather than present significance. At present the main sources of identification include documentation in the possession of the individual concerned, such as a driving licence, or fingerprint and photograph records held by the authorities. In relation to the latter sources, the Gardaí are the custodians of fingerprint and photograph databases and may relatively quickly take a suspect’s fingerprints and photograph him or her after which the databases may be interrogated – this can be done with increasing efficiency with the extended use of fingerprinting technology, such as Live Scan, coupled with the efforts of the Criminal Records Bureau to store both fingerprints and photographs on an integrated and

²⁰ Virginian Fourth Circuit 962 F2d 302 (4th Cir 1992) cited in Kaye “The Constitutionality of DNA Sampling on Arrest” (2001) 10 *Cornell Journal of Law and Public Policy* 455 at 487.

²¹ Kaye “The Constitutionality of DNA Sampling on Arrest” (2001) 10 *Cornell Journal of Law and Public Policy* 455 at 487-488.

searchable electronic database. If a suspect is photographed and fingerprinted as part of routine “booking” procedures, then their ability to avoid further prosecution by providing false information is significantly curtailed. Of course suspects may change their appearance or provide a false name and address, but short of self-mutilation it would be extremely difficult to conceal their fingerprints, which are unique – even in the case of identical twins.²² Thus, fingerprint records provide a practical and effective way of establishing the ‘true identity’ of an individual.

5.24 However, DNA profiling is a significantly more discriminating means of distinguishing between individuals than, for example, blood grouping.²³ But in order to be an effective method of establishing the ‘true identity’ of an individual, a DNA profile, at a practical level, must be readily obtainable and any database of profiles would also have to be readily accessible. The present technology is such that a profile takes rather a long time to generate – around 24 hours depending on the type of sample to be profiled and the workload of the laboratory,²⁴ whereas a fingerprint scan can be done in a matter of minutes. Equally, the technology is not at the stage whereby a profile can be generated – or for that matter a fingerprint scan can be obtained – using handheld devices. If and when this technology is developed then the true identity argument in favour of routine profiling (as well as fingerprinting) becomes more forceful. The rapid improvement in DNA techniques makes such advances imminent and forethought is required.

C Suspects

(1) Sampling

(a) Threshold

5.25 As discussed in the preceding chapter the current sampling threshold set by the 1990 Act is broadly that of an arrestable offence.²⁵ In the main the sampling powers conferred by the Act are applicable in respect of those detained for offences attracting a

²² See paragraph 1.10.

²³ See paragraph 1.14.

²⁴ See paragraph 1.40.

²⁵ See paragraphs 4.16-4.22.

potential sentence of five years (or more serious punishment), offences under the 1939 Act, as well as various drug trafficking offences. We consider here what thresholds have been set by other jurisdictions in relation to the obtaining of samples from suspects and in light of such practice whether the existing threshold should be reconsidered.

5.26 What appears to be usual international practice has been to concentrate on obtaining samples from those suspected of the most serious of offences. For example in Germany the authorities may, for the most part, only obtain samples from those suspected or arrested for an “offence of substantial significance.”²⁶ This term includes all serious offences plus a limited number of minor offences, which are themselves relatively serious. For an offence to fall within this second category, it must be attributable to a sphere of medium delinquency, it must disturb the public peace severely and it must be capable of substantially affecting the population’s feeling of legal security. Examples of minor offences falling within this provision include dangerous bodily injury and theft in a particularly serious case.

5.27 Also under the Canadian *Criminal Code* a warrant to obtain bodily samples may only be obtained if there are reasonable grounds to believe that a “designated offence” has been committed.²⁷ Designated offences, which fall into the two categories of primary and secondary, are enumerated in the *Criminal Code* and include the more serious crimes, such as facilitating terrorist activity, murder, manslaughter, sexual assault (which are primary), child pornography, indecent acts and assault (which are secondary).²⁸ The distinction between the two categories of offence is important in terms of whose profile may be retained and stored on the DNA database.

5.28 In New South Wales section 3 of the *Crimes (Forensic Procedures) Act 2000* provides that a DNA sample may only be obtained from individuals who are suspected of a “prescribed offence” or who have been convicted of a serious indictable offence. A prescribed offence is defined as an indictable offence or any other

²⁶ Pursuant to section 81g of the *German Code of Criminal Procedure*.

²⁷ Section 487.05 of the *Criminal Code*.

²⁸ Section 487.4 of the *Criminal Code*.

offence that the State has prescribed by regulation.²⁹ Although the scope of DNA sampling procedures may be widened by the State passing regulations designating offences, sampling is concentrated on the more serious offences. Indeed, the Parliament of New South Wales Legislative Standing Committee on Law and Justice in its Review of the *Crimes (Forensic Procedures) Act 2000* (“NSW Review”)³⁰ considered that less serious summary offences should not result in DNA sampling and recommended that no additional offences be prescribed for the purposes of section 3.³¹ The NSW Review also expressed concern about the use of secondary legislation to expand the range of offences that might result in a suspect being subjected to a forensic procedure and took the view that such public policy decisions should be made only after full parliamentary debate. Accordingly, the NSW Review recommended that the Attorney-General remove the enabling provision from section 3, thus ensuring that any further prescribed offences are added only after debate and by primary legislation.³²

5.29 Originally in England and Wales (which is from where the 1990 provisions were essentially derived) the *Police and Criminal Evidence Act 1984* (“PACE”), which governs the powers of the police, set the threshold at the level of a ‘serious arrestable offence’.³³

²⁹ This is an interesting feature, in that it allows for development in sampling policy without substantial legislative amendment.

³⁰ Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002).

³¹ *Ibid* at 79, recommendation 13.

³² *Ibid* at 78-79, recommendation 14.

³³ The definition of “serious arrestable offence” is set out in section 116 of the *Police and Criminal Evidence Act 1984*. This section divides these offences into two categories. The first category provides for the offences that are so serious that they will always constitute “serious arrestable offences”. These offences are set out in Schedule 5, Parts I and II of the Act. An example of such an offence is murder. Any other arrestable offence is serious only if its commission has led or is likely to lead to any of the consequences specified in subsection (6) – namely: (a) serious harm to the security of the State and public order; (b) serious interference with the administration of justice or with the investigation of offences; (c) the death of anyone; (d) serious injury to anyone; (e) substantial financial gain to anyone; and (f) serious financial loss to anyone in the sense that having regard to all the circumstances, it is serious for the person suffering loss.

This threshold has now been down-graded by subsequent amendment to a ‘recordable offence’.³⁴ A recordable offence is one which is potentially punishable with imprisonment of any length as well as certain other specified non-imprisonable crimes such as loitering or soliciting for the purposes of prostitution, possessing a weapon with a blade or a point in a public place, or tampering with a motor vehicle.³⁵ Following this first series of amendments to PACE, in the *Criminal Justice and Public Order Act 1994* (the second being through the *Criminal Justice and Police Act 2001*), the Home Office issued a Circular on the National DNA Database,³⁶ which stated as follows:

“The new PACE provisions allow CJ [comparator] samples to be taken in all recordable offences. Chief officers have agreed that all offenders committing recordable offences will be profiled but that, in the first instance, the police should only obtain samples from offenders in the categories:

- i) offences against the person;
- ii) sexual offences; and
- iii) burglaries.

This does not, however, preclude forces from obtaining CJ samples for other recordable offences for inclusion on the database nor does it compel forces to take samples in all the above categories or in all cases in selected categories. All forces should have a clearly stated policy for sampling.”³⁷

5.30 The result of this shift in the requisite level of seriousness of offences has been that the number of profiles stored on the database has increased exponentially since 1995. Indeed the number recently passed the 2 million mark and the Home Office circular issued in 1995 envisages that, in time, the database will hold up to approximately 5 million records.³⁸ As Lord Woolf CJ noted in *R (S and Marper) v Chief Constable of South Yorkshire* “[s]o far as the

³⁴ See section 62(2)(a) of the PACE Act 1984.

³⁵ See paragraph 2.15.

³⁶ Home Office Circular 16/95: National DNA Database (31 March 1995).

³⁷ *Ibid* at paragraph 40.

³⁸ Home Office Circular 16/95: National DNA Database (31 March 1995) at paragraph 22.

prevention and detection of crime is concerned, it is obvious the larger the databank of fingerprints and DNA samples available to the police, the greater the value of the databank will be in preventing crime and detecting those responsible for crime”.³⁹

5.31 It should, however, be emphasised that the law applicable in England and Wales is the exception rather than the rule and that the majority of States confine forensic sampling to the more serious offences. The position in the UK has in fact attracted considerable criticism. Indeed the Human Genetics Commission recently commented that “the emphasis in forensic profiling should primarily be on its use for serious criminal offences particularly those involving personal injury to another”.⁴⁰ They expressed concern that DNA samples could be compulsorily taken from those suspected of minor offences for example shoplifting and fraud. They encouraged a greater public dialogue on the issue and urged the UK Government to review their decision to increase the range of offences for which a sample may be taken.

5.32 As the Irish Council for Civil Liberties commented “Given the invasive nature of taking DNA samples, non-consensual testing should generally be strictly limited to persons convicted of serious offences”.⁴¹ This is the present position under the *Criminal Justice (Forensic Evidence) Act 1990*. The 1990 Act allows for the taking of samples from persons suspected of committing crimes under the *Offences Against the State Act 1939*, the *Criminal Justice Act 1984* and the *Criminal Justice (Drug Trafficking) Act 1996*. Broadly speaking the powers conferred by the 1990 Act are aimed at offences towards the higher end of the scale of seriousness.⁴² The penalty for the majority of these offences is imprisonment for a period of at least five years. As is evident from the Oireachtas debates, the intention of

³⁹ (2003) 1 Cr App R 16 247 at 255.

⁴⁰ Human Genetics Commission *Inside Information: Balancing Interests in the Use of Personal Genetic Data* (May 2002) at paragraph 9.18. Available online at: <http://www.hgc.gov.uk/insideinformation/index.htm#report>.

⁴¹ ICCL Position Paper on *Human Rights Compatibility of the Establishment of a DNA Database* October 2003 at 11. Available at: http://www.iccl.ie/criminalj/policy/03_dnapaper.pdf.

⁴² See paragraphs 4.20-4.22.

the legislature was always to confine these powers to serious offences.⁴³

5.33 It is suggested therefore that samples should only be obtained from those suspected of committing offences of a serious nature. Permitting the obtaining of samples from those suspected of very minor offences would constitute a disproportionate interference with their bodily integrity and privacy rights. Generally, individuals suspected of very minor offences⁴⁴ may not even be questioned under the present law. Allowing the compulsory taking of their DNA is a greater encroachment on their rights than questioning. Given the interference with the privacy and the bodily integrity rights of the suspect entailed by these provisions, they should be confined to, at the very least, relatively serious offences so as to meet the test of proportionality. In addition to this, on a practical note, it has recently been observed by one commentator that the expense of DNA profiling is not justified where it is expended merely to apprehend minor offences.⁴⁵

5.34 It has been suggested that the present provision, which outlines the offences for which it is permissible to take a bodily sample, could be replaced by a provision enabling samples to be extracted where a person is suspected of an “arrestable offence”. An “arrestable offence” is defined by the *Criminal Act 1997* as “an offence for which a person of full capacity and not previously convicted may, under or by virtue of any enactment, be punished by

⁴³ 462 *Dáil Debates* Col. 1383.

⁴⁴ A number of matters are examined by the courts when deciding whether an offence constitutes a minor offence or not for the purposes of Article 38.5 of the Constitution. These include the severity of the punishment, the moral quality of the act and the state of law and public opinion in 1937. See *Melling v Ó Mathghamhna* [1962] IR 1. For more detail on minor offences generally see the Law Reform Commission *Report on Penalties for Minor Offences* March 2003 (LRC 69-2003). For present purposes, we use “minor offence” in the context of an offence for which the maximum punishment is less than five years imprisonment, except for those offences with this penalty for which a person can be remanded in custody under the *Offences Against the Person Act 1939* and the *Criminal Justice (Drug Trafficking) Act 1996* – ie those offences for which it is possible to sample suspects under the 1990 Act.

⁴⁵ Goode “Some Observations on Evidence of DNA Frequency” (2002) 23 *Adelaide Law Review* 45 at 64.

imprisonment for a term of five years or by a more severe penalty and includes an attempt to commit any offence". The Commission however submits that the definition of "arrestable offence" does not cover a sufficiently broad spectrum of offences. Persons detained under section 2 of the *Criminal Justice (Drug Trafficking) Act 1996* may not be suspected of offences which meet the threshold of "arrestable offence" but nonetheless could be suspected of relatively serious offences, which the acquisition of DNA may be necessary to solve.⁴⁶ Given that persons suspected of committing these offences may be detained in custody, the objections to obtaining DNA samples from them seem unpersuasive. It would be arbitrary and irrational to preclude the obtaining of a DNA sample in these few cases.

5.35 The Commission concludes that there should be no alteration to the present situation in respect of the offences for which it is possible to obtain DNA samples from suspects. It should be possible to obtain bodily samples from a suspect when they are in custody under section 30 of the *Offences Against the State Act 1939*, section 4 of the *Criminal Justice Act 1984* or section 2 of the *Criminal Justice (Drug Trafficking) Act 1996*.

5.36 *The Commission does not recommend any amendment to the present position by which a person must (subject to limited exception) be suspected of an "arrestable offence", that is one carrying a penalty of at least five years imprisonment, to authorise the taking of a forensic sample.*

(2) Retention of Profiles in General

5.37 In examining what profiles should be retained on the database, one must discuss the two competing arguments that are made in this context. First, it has been argued that the storage of DNA profiles taken from citizens is unjustifiable.⁴⁷ It is argued that the right to privacy implies that citizens should be entitled to control

⁴⁶ For example, regulations enacted under section 5(1)(a) of the *Misuse of Drugs Act 1977* concerning the transportation of controlled drugs would not constitute 'arrestable offences' as is evident from the penalties that apply to these offences under section 27(10)(b) of this Act. However, under section 2 of the *Criminal Justice (Drug Trafficking) Act 1996*, DNA samples can be obtained from suspects of such offences.

⁴⁷ ICCL Position Paper on *Human Rights Compatibility of the Establishment of a DNA Database* October 2003 at 3. Available at: www.iccl.ie/criminalj/policy/03_dnapaper.pdf.

their own personal information and live life in privacy and not in a “total surveillance state”.⁴⁸

5.38 On the other hand, it has been argued that the retaining of the profiles of the entire population would significantly assist crime investigation and would consequently enhance citizens’ civil liberties.⁴⁹ This argument is discussed in greater detail later in this chapter.⁵⁰ Clearly a comprehensive (or inclusive) databank of fingerprints, palmprints, photographs, DNA profiles, retinal scans, and other biometric information, together with other details, such as names, addresses, employment history, and criminal records, would serve a number of purposes. These may include the detection of crime, benefit fraud, and illegal immigration.

5.39 This Paper aims to effect a compromise between these two opposing positions. Although both these competing positions have merit, it is suggested that neither can be pursued in isolation. While it is necessary for the interests of society in crime investigation to be safeguarded, it is also imperative that there should be no unjustified intrusion into and interference with an individual’s right to privacy and bodily integrity. Ultimately, this is, as the case law under the ECHR indicates, a question of proportionality and reasonableness.

5.40 The difficulty in determining the proportionality of a measure cannot be underestimated.⁵¹ For example, it is apparent that the retention of a violent offender’s DNA profile, which may be used to link them to future as well as past crimes (and perhaps deter them from committing further offences) on the basis of an amalgamation of the evidential significance and database justifications appears reasonably justifiable and proportionate. A more testing scenario is the retention of a profile from someone who has committed fraud or another non-violent ‘white-collar’ crime. It is, moreover, particularly

⁴⁸ See Bingham “It’s Not the Technology it is How it’s Used” (6 January 2001) available on Liberty’s website at: <http://www.liberty-human-rights.org.uk>.

⁴⁹ See the views of Professor David Mc Connell in *The Irish Times* 20 August 2003 at 15.

⁵⁰ See paragraphs 5.112-5.114.

⁵¹ See Hogan & Whyte *Kelly: The Irish Constitution* (4th ed Butterworths 2003) at 1270-1277 for a detailed description of the principles of proportionality as applied in an Irish context.

difficult to justify the retention of a profile from someone who has not been (and perhaps, therefore, is unlikely in the future to be) involved in criminal activity involving the transfer or abandonment of biological material. Although in the future such a profile could in fact be useful to ascertain the identity of the individual. One must also observe that our idea of what crimes may and may not require forensic examination to forage for biological material for DNA analysis is becoming increasingly blurred because of the lightning speed at which the technology is advancing. For example, even a fraud case *may* involve the inadvertent abandonment of biological material, such as by the fraudster licking the envelope, within which one of the crucial documents relating to the fraud was sent to the victim, and thereby leaving skin cells present in the saliva.

5.41 Moreover, the answer to the question of what is legitimate and necessary may change depending on the challenges of a given social and political climate. For example, the Omagh bombing of 1998 may have persuaded the Oireachtas to enact provisions in the *Offences Against the State Act 1998*, at which it might otherwise have balked. Similarly, the emergence of global terrorism has enabled the UK administration to propose and its legislature to enact laws that in a pre-9/11 context would be viewed as quite draconian, but are now regarded as both legitimate and necessary. The English High Court has also recently stated that use of the wide powers conferred by the *Terrorism Act 2003* to stop and search demonstrators at an international arms-fair in east London had been justified “in light of the threat of terrorism.”⁵²

(3) Retention of Profiles of Suspects

5.42 The 1990 Act is silent on what is to happen to the samples and profiles taken from those suspects who are convicted and not dealt with under the *Probation of Offenders Act 1907*.⁵³ However, section 4 of the 1990 Act does direct that, in respect of those

⁵² Allison “Police can use terror powers on protestors” *The Guardian* 1 November 2003.

⁵³ Section 4(a) of the 1990 Act sets out the position in respect of suspects who are convicted and dealt with under the *Probation of Offenders Act 1907*. In this instance, the sample and profile must be destroyed three years after the making of the order provided that the offender has not been convicted of an offence to which section 4 of the *Criminal Justice Act 1984* applies during the three year period.

individuals who are subjected to a forensic procedure such as the taking of a sample for DNA, as part of the investigation of an offence but who are not ultimately convicted of any offence, the bodily samples and records relating to those samples must be destroyed. It can therefore be inferred as a result of the rule that if a provision expressly covers one situation and does not mention another cognate case, it is to be taken not to embrace the related case (the *expressio unius est exclusio alterius* rule), that if these suspects are convicted, their profiles can be retained.⁵⁴ Consequently, there does not appear to be any prohibition in the legislation on the indefinite retention of the profiles of suspects who have been convicted but not dealt with under the *Probation of Offenders Act 1907*. In this section, we examine the situation in respect of suspects who are not subsequently convicted.

(4) Comparative Legislation

5.43 A brief survey of the options taken in other jurisdictions in relation to suspects not convicted is instructive. In New South Wales, section 88 of the *Crimes (Forensic Procedures) Act 2000* requires that forensic material taken under the Act must be destroyed if:

- “(i) An interim order is disallowed after the procedure is carried out;
- (ii) A serious indictable offender has his or her conviction quashed and the sample was taken after a court order;
- (iii) In the case of a suspect, *12 months* has elapsed since the forensic material was taken and proceedings have not been instituted against the suspect for the offence, or proceedings have been discontinued;
- (iv) In the case of a suspect for whom there is a warrant for arrest, the warrant expires or *12 months* has elapsed since the suspect was apprehended;
- (v) The suspect is convicted but no conviction is recorded.”

This particular legislation, as noted above, has recently been the subject of an extensive review. The NSW Review made a number of

⁵⁴ See Hogan & Whyte *Kelly: The Irish Constitution* (4th ed Butterworths 2003) at 33-36 for more detail on this rule.

recommendations on the destruction of profiles and samples, including that *both* the samples and profiles of those suspects who have been exonerated, acquitted or otherwise cleared should be destroyed and the Committee took the view that retention is not justified when an individual is no longer a suspect.⁵⁵

5.44 In New Zealand, the *Criminal Investigations (Bodily Samples) Act 1995* provides for the destruction of DNA samples and related records on acquittal, or on withdrawal of a charge.⁵⁶ Under section 60(f) a sample must be destroyed 12 months after it has been taken if within that period there has been no charge in relation to the investigation. Section 61 of the Act allows for the extension, on an application to the High Court, of the period within which a sample may be retained, where a person has not been charged with an offence within 12 months of the taking of the sample. In order to extend the period of retention, the High Court judge must be satisfied that there is still good cause to suspect that the person committed the offence, that there is good reason why he or she has not yet been charged, and that it is important to the investigation of the offence that the bodily sample and the profile be retained. This latter provision is somewhat analogous to section 4(5) of the Irish *Criminal Justice (Forensic Evidence) Act 1990* and ensures that the framework is not a straitjacket on the authorities investigating difficult and complex cases which may entail delays in bringing a prosecution.

5.45 At the more inclusive end of the spectrum, in England and Wales, the *Criminal Justice and Police Act 2001* (which amends the *Police and Criminal Evidence Act 1984* (“PACE”)) removes the prohibition on the retention of fingerprints or samples, including DNA samples, after the person from whom they have been taken has been acquitted, or a decision has been taken not to prosecute. The amended section 64(1A) of PACE also allows fingerprints or samples to be retained and used in the investigation of other unrelated offences. Under section 64(1B) of PACE, fingerprints and information derived from samples may be retained on a database and speculative searches carried out against them.

⁵⁵ Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) at paragraphs 6.42-6.60.

⁵⁶ See section 60(d).

5.46 These powers are the broadest granted in relation to the retention of samples and profiles and have led some to argue that they permit excessive intrusion on privacy rights. Indeed, a leading UK human rights organisation, Justice, in its response to the proposals when the 2001 Act was published as a Bill, stated as follows:

“[T]here are significant questions as to whether the indefinite retention of fingerprint and DNA samples ... would be considered to be a proportionate interference with privacy rights under Article 8 of the Convention. Although the Court and Commission of Human Rights have held that the retention of records, where there has been an acquittal or a decision not to prosecute, may be justified where the information is necessary for the investigation and prevention of terrorist offences, this has been stressed to be in the context of the serious threat to public safety posed by organised terrorism in the UK at that time. There are considerable doubts as to whether a similar principle would apply in relation to the investigation of the broad spectrum of criminal offences.”⁵⁷

5.47 Interestingly, although profiles obtained in Scotland are submitted to the UK National DNA Database, the law in England and Wales is not mirrored north of the border. In Scottish law, there still exists an obligation on the authorities to destroy samples and profiles taken from persons suspected of an offence, but who are subsequently acquitted or not prosecuted.⁵⁸ The Human Genetics Commission (“HGC”) in its report on the use of personal genetic information highlighted the compliance difficulties in relation to the destruction of those ‘Scottish profiles’ that are loaded on the UK database⁵⁹ – a

⁵⁷ Justice “Briefing on the Criminal Justice and Police Bill” (February 2001) available at: <http://www.justice.org.uk/publications/listofpublications/index.html>.

⁵⁸ See *Criminal Procedure (Scotland) Act 1995* sections 18-20 (as amended by section 47 of the *Crime and Punishment (Scotland) Act 1997* and section 117 of the *Crime and Disorder Act 1998*).

⁵⁹ Human Genetics Commission *Inside Information: Balancing Interests in the Use of Personal Genetic Data* (May 2002) at paragraph 9.15. Available online at <http://www.hgc.uk/insideinformation/index.htm#report>.

matter that we will address in the Irish context⁶⁰ when considering oversight and regulation.

5.48 However, while the Human Genetics Commission criticised the fact that the UK legislation allows for the retention of *samples* from suspects after they are acquitted or charges are dropped, they did not condemn the provision allowing the *profiles* of persons to be retained in these instances. The HGC recognised the importance of the distinction between the samples and the profiles. While a sample can potentially contain the whole of an individual's genetic make-up, the personal genetic information contained in a profile is at present extremely limited.⁶¹ As a result, the arguments in favour of the destruction of samples are considerably stronger than those in respect of the deletion of the profiles derived from them. The Commission recommends the destruction of all comparator samples after the conclusion of the trial for which they were obtained.⁶²

(5) *The Marper Case*

5.49 The issue of the retention of DNA profiles and samples lawfully taken from people who have been investigated but not convicted of any offence has recently been considered by the Court of Appeal of England and Wales in the light of the *Human Rights Act 1998* in the case of *R (S and Marper) v Chief Constable of South Yorkshire and Secretary of State for the Home Department* ("*Marper*").⁶³

5.50 The facts of these conjoined appeals were as follows. S, a 12 year old boy, with no previous convictions, was arrested on a charge of attempted robbery. He had his fingerprints and DNA sample taken but subsequently he was acquitted of the offence. In the other appeal, Marper had been arrested and charged with harassment of his partner. His fingerprints and DNA sample were also taken. Subsequently the CPS issued a notice of discontinuance. The legal representatives of S and Marper applied to the Chief Constable of South Yorkshire to have their fingerprint records and DNA samples and records destroyed. However, pursuant to section 64(1A) of

⁶⁰ See paragraphs 8.39-8.43.

⁶¹ See paragraphs 5.06-5.09.

⁶² See paragraph 6.25.

⁶³ (2003) 1 Cr App R 16 247.

Police and Criminal Evidence Act 1984 (as amended by the *Criminal Justice and Police Act 2001*), which retrospectively permitted the authorities to retain such records and samples, the Chief Constable refused to accede to these requests.

5.51 Counsel on behalf of the claimants argued that the retention of the samples breached Article 8 of the ECHR on the right to privacy and Article 14 of the ECHR on the right to non-discrimination.

5.52 All three judges in the Court of Appeal accepted that retention did interfere with Article 8 rights. Waller LJ was convinced by the submissions of Liberty that “there is a breach of Article 8(1) in the retention and use of samples independent from the original breach of that Article in the taking of the samples in the first place.”⁶⁴ For Lord Woolf CJ, whether there was any interference depended much upon the cultural traditions of a particular state and in view of these he concluded that “fingerprints and samples are material which is regarded as being personal to the individual from whom it is taken and so requires legal justification before it can be retained.”⁶⁵ In recognising that the retention of personal information represents a further and continuing invasion of the right to respect for one’s private life, Sedley LJ took into account “the strong cultural unease in the United Kingdom about the official collection and retention of information about individuals.”⁶⁶

5.53 It therefore fell to the court to determine whether the interference was justified by reference to Article 8(2).⁶⁷ The Court of Appeal accepted that the justifications advanced in Article 8(2) were in issue. By virtue of section 64(1A), the retained profiles may only be used for the purposes of the prevention or detection of crime, investigation of an offence or the conduct of an investigation. The

⁶⁴ *R (S and Marper) v Chief Constable of South Yorkshire and Secretary of State for the Home Department* (2003) 1 Cr App R 16 247 at paragraph 58.

⁶⁵ *Ibid* at paragraph 32.

⁶⁶ *Ibid* at paragraph 68.

⁶⁷ Article 8(2) provides that “There shall be no interference by a public authority with the exercise of this right except such as in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others”.

“prevention of disorder or crime” is specifically expressed in Article 8(2) to be a concern which justifies interference with the right to privacy. The Court of Appeal then went on to consider whether the interference with Article 8 was proportionate and held that it was. Lord Woolf CJ held that this was so because only the fingerprints and samples that were lawfully taken could be retained. He also stated that there was no less harmful means by which the objective could be achieved. The interference in question here did not go beyond what was necessary for the objective in question to be achieved. Both Waller LJ and Sedley LJ were influenced greatly in holding that the measure was proportionate by the fact that the profile could not be used for any purpose other than crime enforcement purposes. Liberty had submitted that science could in the future enable DNA analysis to prove an individual’s propensity to commit certain crime and the wording of the section was sufficiently broad to encompass the use of DNA for this purpose. They also alerted the court to the risk that the samples and profiles could be used in an unlawful manner. However, Waller LJ dismissed the first concern by holding that any change in the law or practice must comply with the Convention. He dismissed the concern about risk of unlawful use by refusing to assume any unlawfulness. He also held that the risks in question here were outweighed by the benefits in achieving the aim of preventing crime.

5.54 The potential infringement of section 64(1A) with Article 14 of the ECHR, which protects against discrimination, was also considered. The Court of Appeal unanimously decided that there was no breach of Article 14. There was no discrimination in the obtaining of the samples as it was necessary to obtain these samples for the investigation of the offence. The presumption of innocence did not preclude people from being investigated for offences so the fingerprints and samples were lawfully taken in the course of the investigation. Once these samples were lawfully obtained, there was an objective difference between citizens who had their samples or fingerprints taken and those who did not. What distinguishes them is the fact that the suspects have already had their fingerprints taken. The different treatment was deemed to be fully justified as unless the samples or fingerprints matched those alleged to be responsible for an offence, no harmful consequences would flow from the retention.

5.55 Implicit in the Court of Appeal’s decision in *Marper* is a measure of judicial respect for the legislature. Lord Woolf CJ observed that “it is important that the courts show appropriate

deference to the body whose decision has the advantage of being able to rely on unimpeachable democratic credentials”.⁶⁸

5.56 This approach is comparable to the “margin of appreciation” test in ECHR jurisprudence, which provides that “by reason of their direct and continuous contact with the vital forces of their countries, the national authorities are in principle better placed to evaluate the local needs and conditions”.⁶⁹ As Sir John Laws points out the margin of appreciation is not relevant in the domestic context.⁷⁰ As a result of the ECHR Act 2003, the ECHR will in the future be administered in Ireland by Irish judges. Consequently, the margin of appreciation will not be applicable in this context.

5.57 Nevertheless, a similar doctrine of domestic judicial deference has emerged in the UK case law on the *Human Rights Act 1998*. It seeks to maintain the distinction between appeal and review thus ensuring that the courts do not take over the role of primary policy and decision-maker. For example, areas that may require “judicial reticence”⁷¹ include social or economic policy⁷² and allocation of resources.⁷³ In the development of Irish constitutional law, the courts have adopted similar “rules of prudence”.⁷⁴

5.58 While expressing judicial deference in the specific context of *Marper*, a further feature of Lord Woolf CJ’s judgment is the explicit recognition that there is nothing in the ECHR setting a ‘ceiling’ on the level of respect which a jurisdiction is entitled to extend to personal rights. Accordingly, there may be situations where the standards of respect for the rights of the individual may be higher than those required by the ECHR.

⁶⁸ (2003) 1 Cr App R 16 247 at paragraphs 16-17.

⁶⁹ *Buckley v UK* (1996) EHRR 101 at 129.

⁷⁰ Laws “The Limitations of Human Rights” (1998) PL 254 at 258.

⁷¹ On which see Clarke and Mulcahy “Repackaging the Margin”, available at: <http://www.blackstoneschambers.co.uk>.

⁷² Lord Hope in *R v DPP, ex parte Kebilene* [1999] 3 WLR 972 at 994.

⁷³ *R v Chief Constable of Sussex, ex parte ITF* [1999] 1 ALL ER 129.

⁷⁴ The courts in Ireland apply a presumption of constitutionality when assessing whether a Statute is constitutional or not. For more discussion on this see Hogan & Whyte, *Kelly: The Irish Constitution* (4th ed Butterworths 2003) at 832-870.

(6) Conclusion

5.59 As discussed earlier,⁷⁵ the European Commission on Human Rights (“ECmHR”) confronted, in the case of *McVeigh*, the issue of retaining personal data taken from an individual, including photographs and fingerprints, where that individual was not convicted of any offence. In that case the ECmHR was satisfied that not only did the purpose of the retention pursue a legitimate aim, but that the measure permitting retention (for the time being) was proportionate in view of the threat posed by terrorism in the UK. One commentator has suggested that the ECmHR may also have been influenced by the fact that the personal data retained was used for identification purposes only and kept separately from criminal records.⁷⁶ In light of this case and considering that the Irish courts have a duty to take into account the jurisprudence of the Strasbourg institutions,⁷⁷ it is evident that it is permissible for profiles of persons who are suspected of terrorism to be retained on a database, even if charges are not subsequently brought.

5.60 At present, the ECtHR has yet to decide on the compatibility of measures allowing suspect’s profiles to be retained indefinitely on national databases with the ECHR. It has yet to decide whether concerns other than that of preventing terrorism can justify the retention of acquitted suspects’ fingerprints and DNA profiles indefinitely. The Court of Appeal in the UK has in *Marper* however affirmed the compatibility of measures allowing for the indefinite retention of suspects’ profiles with the ECHR.

5.61 On this important issue, the Commission favours the retention of the profiles of suspects indefinitely. We are of the opinion that this approach strikes a fair and proportionate balance between the rights of the individual citizen and the interests of society. In order for a measure to be a proportionate interference with an individual’s rights, it must not go beyond what is necessary for the objective in question to be achieved.⁷⁸ In this instance, this is the prevention and detection of crime. We consider that this

⁷⁵ See paragraphs 3.13-3.14.

⁷⁶ Taylor “Policing, Privacy and Proportionality” (2003) EHRLR Special Issue on Privacy 86 at 95-96.

⁷⁷ Section 4 of the *European Convention on Human Rights Act 2003*.

⁷⁸ See paragraphs 3.11-3.12.

recommendation constitutes a proportionate interference with the suspect's right to privacy in accordance with the principles detailed in chapter 3.⁷⁹ The three considerations which should be taken into account in applying the proportionality test are: the level of interference with the right, the relative seriousness of the corresponding need and the category of the applicant. The discussion in the next few paragraphs illustrates that these considerations demonstrate that our proposal is a proportionate interference with an individual's rights. There are a number of limiting elements to our recommendation, which ensure that the measure is indeed a proportionate interference with these rights.

5.62 First, we have recommended that samples may only be taken from those who are suspected of the commission of *serious* crimes. As observed in the previous paragraph, the category within which the individual falls is important in determining if the measure is proportionate. The Commission therefore does not suggest moving to the situation in the UK, where under the changes made in the 2001 Act, a sample can be taken from persons suspected of committing a "recordable offence". Some offences which constitute "recordable offences" are rather trivial.⁸⁰ Our proposal ensures that it is only those who are suspected of committing serious offences that are exposed to the retention of their profiles on the database.

5.63 Secondly, one of the grounds for the Court of Appeal's decision in *Marper* was that the profiles on the database could only be used for crime investigation purposes. The court observed that this demonstrated that the measure was proportionate. The level of interference with the right is an important factor to be taken into account in applying the proportionality test. The Commission proposes that the use of the profiles be confined to crime investigation purposes and the identification of deceased and severely injured people.⁸¹ The level of interference with the right to privacy is consequently quite limited. Any attempt to utilise these profiles for additional purposes, for example to reveal the individual's genetic characteristics, would be prohibited by these proposals. As is discussed below, the uses to which the database may be subjected

⁷⁹ See in particular paragraph 3.19.

⁸⁰ See paragraph 5.29.

⁸¹ See the discussion in paragraphs 7.21-7.39.

should be defined in precise terms.⁸² This will ensure that the permitted purposes outlined in the legislation will not be extended beyond those which are compatible with the ECHR because of ambiguity. Consequently, unless the suspect commits a further offence, he or she will not suffer any disadvantage from the retention of a profile on the database.

5.64 Any possibility of misuse, a concern which Liberty identified in its submission to the court in *Marper*, will be precluded in all but the most exceptional of cases, by virtue of the safeguards the Commission is proposing in Chapter 8. Misuse under these conditions designed to ensure security would be unlikely, easily detectable and would carry harsh consequences. The small risk involved should not outweigh the benefits attained by the retention of the profiles of suspects indefinitely.

5.65 The seriousness of the corresponding need is another important factor to be taken into account in applying the proportionality test. The significance of the objective to be achieved is evident here. Retaining the profiles of suspects on the national database would increase the number of profiles on the database and correspondingly the number of offenders likely to be detected. The need to reduce the incidence of serious crimes and to detect the offenders of those crimes committed is undoubtedly an important objective. Any less inclusive database may not be cost effective. Given the substantial safeguards recommended by the Commission to ensure the security of the database,⁸³ the cost of operating the database will prove extensive. In order for this substantial cost to be justified, the benefits afforded by the databank should justify the cost involved. Therefore, the databank must be composed of a significant number of profiles or it would simply not prove viable and the plan to establish a database might not be feasible.

5.66 Finally, it must be observed that the Commission is merely recommending the retention of the *profiles* of suspects. We suggest in the next chapter that in most cases the comparator samples should be destroyed after the conclusion of the trial for which they were obtained. This is in contrast to the decision of the Court of Appeal in *Marper* and most appropriately explains the trenchant criticism by

⁸² See paragraphs 7.35-7.39.

⁸³ See paragraphs 8.20, 8.29 and 8.38.

Justice, quoted above.⁸⁴ Retaining the profiles only, as opposed to the profiles and the samples, is a further limiting provision which assists in maintaining the proportionality of the measure.

5.67 *The Commission recommends that the DNA profiles obtained from individuals in custody under section 30 of the Offences Against the State Act 1939, section 4 of the Criminal Justice Act 1984 and section 2 of the Criminal Justice (Drug Trafficking) Act 1996 may be retained indefinitely on the national database.*

D Convicted Offenders

5.68 The advantages of sampling convicted people are twofold. First, the profiles obtained can be checked against profiles of past crime scene stains to see if the convicted person had some link with these offences. Secondly, the storing of the profiles on the database could in the future implicate a convicted person in a crime and could consequently, although arguably improbably, deter the convicted person from committing a crime. At present the taking of samples from convicted persons in prison is permitted under section 2(2) of the *Criminal Justice (Forensic Evidence) Act 1990*. Both the intelligence gathering or database justification and the true identity justification are embraced here.⁸⁵ It is proposed that in the event of suspects being convicted, their profiles may be retained. We intend to examine now whether the sampling and retention of profiles of convicted persons is justifiable, where their DNA profile has not been obtained as a suspect.

(1) Sampling

(a) Retrospectivity

5.69 A preliminary issue that must be addressed is whether the proposed scheme for sampling should be prospective. At present, the *Criminal Justice (Forensic Evidence) Act 1990* permits the retrospective sampling of convicted offenders.⁸⁶ This issue is relevant to both whether the convicted person can in this instance be made to give a sample and also whether, if the sample is taken, the profile extracted can be retained on the database. It is an important

⁸⁴ See paragraph 5.46.

⁸⁵ See paragraphs 5.15-5.24.

⁸⁶ Section 2(2) of the 1990 Act.

principle of the criminal law that no one should be subjected to a penalty that was not available at the time they were convicted. This principle is specifically provided for in Article 7 of the ECHR.⁸⁷ Also, Article 15.5 of the Constitution prohibits retroactive penal legislation. This Article is a prohibition on the enactment of retrospective laws declaring acts to be an infringement of the law, which were not unlawful previously. It is not a prohibition on the enactment of retrospective legislation generally. Article 15.5 is not therefore directly applicable here. Kelly comments however that a prohibition on the imposition of a penalty that was not available at the time the offence was committed is probably inherent in the right to be tried in due course of law under Article 38.1 of the Constitution.⁸⁸ This was affirmed recently by the judge in *Enright v Ireland*,⁸⁹ where it was accepted that there was a prohibition against a law, which increases the penalty after the date of the commission of an offence.

5.70 It is therefore important to examine whether the measure in question is a penalty here for the purposes of Article 7 of the ECHR and Article 38.1 of the Constitution. Justice Action put the argument this way in its submission to the NSW Review “it was not intended by the original magistrate, when those people were sent to gaol, that they would lose their right to bodily integrity and genetic privacy, and would be subject to DNA surveillance for the rest of their lives”.⁹⁰ It regarded the obligation to submit to a DNA test as an additional penalty to that imposed on conviction.⁹¹ However, if the sampling requirement is regarded as merely preventative rather than punitive, it will not constitute a ‘penalty’ within the meaning of Article 7. This is

⁸⁷ The second part of Article 7(1) of the ECHR provides that “[n]or shall a heavier penalty be imposed than the one that was applicable at the time the criminal offence was committed”.

⁸⁸ Hogan & Whyte Kelly: *The Irish Constitution* (4th ed Butterworths 2003) at 1053.

⁸⁹ High Court 18 December 2002.

⁹⁰ Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) at paragraph 4.40.

⁹¹ This view is also taken by Saul “Genetic Policing: Forensic Testing in New South Wales” at <http://www.geocities.com/ben-saul/DNATestingNSW.htm>.

evident from *Ibbotson v United Kingdom*⁹² where the EComHR held the registration requirements for the *Sex Offenders Act 1997* were preventative rather than punitive and therefore not a ‘penalty’. A similar argument could be made in respect of the sampling requirement which is imposed to deter the convicted person from committing further offences. The substance and severity of the measure must also be examined in order to determine whether it is a ‘penalty’.⁹³

5.71 On balance, the Commission does not regard the measure as a “penalty”. This is because the measure will only have punitive effects if the convicted offender has already committed offences or does so in the future. In addition to this, the taking of a sample is not enforceable by a term of imprisonment in default.⁹⁴ It is also compulsorily imposed upon suspects even though they have not been convicted of an offence. This illustrates that it is not intended to have a punitive effect. Rather, this is just a form of evidence, which has been collected using a more sophisticated device than was available at the time of the offence. It is evident therefore that Article 7 of the ECHR and Article 15.5 and Article 38.1 of the Constitution do not prohibit the taking of a sample from a person who is at present convicted of an offence.

(b) *Threshold*

5.72 One must examine whether the offences for which it is permissible to obtain samples from convicted people should be the same as those for which it is possible to take samples from suspects. It is easier to justify interference with a convicted person’s right to bodily integrity than a suspect’s right.⁹⁵ Consequently, while the threshold for obtaining samples from suspects is that of serious offences only, it may be justifiable to sample all convicted offenders who are in prison. This is the position adopted in South Australia

⁹² Application No 40146/98 21 October 1998; [1999] Crim LR 153.

⁹³ See Simor and Emmerson QC *Human Rights Practice* (Sweet & Maxwell 2003) at paragraph 7.010.

⁹⁴ In *Jamil v France* (1995) 21 EHRR 65 and *Welch v United Kingdom* (1995) 20 EHRR 247, the fact that a sentence of imprisonment could be imposed on the failure to submit to an order persuaded the ECtHR in holding that the measure was a penalty.

⁹⁵ See the discussion on this in paragraph 3.28.

under section 30(3)(a) of the *Criminal Law (Forensic Procedures) Act 1998*, which simply has the prerequisite that the convicted person is in prison at the time that it is sought to obtain the sample. The Commission agrees with this provision. It strikes an adequate balance between the convicted person's rights and the interests of a law-abiding society in crime investigation. We do not extend this recommendation to convicted offenders who are serving non-custodial sentences. To extend it to non-custodial and suspended sentences would constitute too great an infringement on the convicted person's rights. The fact that the convicted person has received a sentence of imprisonment illustrates that the offence is not so minor as to preclude compulsory sampling.

(c) *Safeguards*

5.73 At present, a sample can only be taken from a person in custody or in prison where they are suspected of having committed certain offences or if the sample would tend to confirm or disprove their involvement.⁹⁶ It could be argued that while these safeguards should remain in the case of samples taken from suspects, the situation is necessarily different in respect of convicted persons. In the latter instance, the purpose for which the samples are taken is different. In the case of suspects, samples are only taken if it is necessary to solve the offence which the person is suspected of committing, although once they are obtained, they may be retained for the purpose of detecting other crimes. In the case of convicted people, samples are taken not only to link them to any past crimes but also to enable the Gardaí to use the profile extracted to detect any future crimes the convicted person may commit.

5.74 This issue has recently been addressed in a number of cases in the USA. These cases concerned the obtaining of DNA samples from convicted persons irrespective of whether they are suspected of committing another offence and whether this intrusion breaches their Fourth Amendment rights. Two rationales have been used in the US cases to justify this interference. The first rationale is the reasonableness justification. In *Boling v Romer*⁹⁷ and *Shaffer v Saffle*,⁹⁸ it was held that the interest of society in the identification of

⁹⁶ See paragraphs 4.33-4.36.

⁹⁷ 101 F 3d 1336 (10th Cir 1996).

⁹⁸ 148 F 3d 1180 (10th Cir 1998).

those arrested in order to solve current as well as past and future crimes outweighed any claims to protection under the Fourth Amendment. Particular emphasis was placed on the fact that prison inmates forfeit some of their rights on being convicted and only minimal intrusion would be involved in the DNA sampling. The second rationale used is the “special needs exception”. This provides that a search may be reasonable even when it is predicated on less than probable or individualised suspicion where special needs, beyond the normal need for law enforcement, render those requirements impractical. These cases demonstrate that it is possible to justify the taking of compulsory samples from convicted people in this instance. However, it should also be noted in respect of the US position that recently the US Circuit Court of Appeals has ruled that the federal mandatory DNA testing statute is unconstitutional on the basis that individualised suspicion must be present for a measure to be reasonable and also that the “special needs exception” does not apply in this instance as the measure aims merely to detect ordinary criminal wrongdoing.⁹⁹ On balance, however, the position in the US seems to favour the obtaining of samples in this instance. The majority of US cases favour this position.

5.75 We agree with the reasoning of the earlier US cases. It is easier to justify interference with a convicted person’s right to bodily integrity than with a suspect’s right.¹⁰⁰ This is evident from Irish law, the case law of the ECtHR and the US case law outlined above. Therefore, while it may not be justifiable to take a suspect’s sample unless it may help to prove or disprove involvement in an offence, the taking of a convicted person’s sample is justifiable in wider circumstances. The fact that a person has been convicted increases the likelihood that they may have committed other offences and will commit further offences so it is justifiable to take a sample to detect either of these occurrences. A convicted person has also by unlawful conduct in effect waived the right to avoid having a DNA sample taken.

(d) *Non-Custodial Sentences*

5.76 One must examine whether the power to take samples from convicted people should extend beyond those currently in prison.

⁹⁹ *US v Kincade* 2003 US App LEXIS 20123 (9th Cir 2003).

¹⁰⁰ See paragraph 3.28.

Section 2(2) of the *Criminal Justice (Forensic Evidence) Act 1990* provides that only convicted offenders who are in prison may be subjected to the compulsory taking of samples. Attempts have been made in other jurisdictions to subject convicted persons who are not in prison to similar procedures. For example in the UK under section 27 of the *Police and Criminal Evidence Act 1984*, a person convicted of a recordable offence who is not in custody may be required to attend the police station to submit to fingerprinting. It is also possible to fingerprint individuals who have been given non-custodial sentences in this jurisdiction under section 28 of the *Criminal Justice Act 1984*. However, the Commission does not intend to recommend the enactment of a similar provision in respect of DNA samples. Such a measure would constitute a disproportionate interference with individuals' rights in that it would subject even people convicted of extremely minor offences to a routine invasion of their privacy and bodily integrity. It would not be justifiable under the principles in respect of privacy rights.¹⁰¹ It could also have a potential impact on an individual's liberty rights under Article 40.4 of the Irish Constitution and Article 5 of the ECHR and it could prove extremely difficult and costly to implement in practice.

5.77 *The Commission recommends that a person convicted of an offence, who is in prison, may be subject to DNA sampling without their consent. This sampling should be subject to the safeguards and rules set out in the Criminal Justice Act 1984 and the Scheme of the Criminal Justice Bill 2003. However there should be no need, in the case of convicted offenders in prison, to show that the taking of the sample was required to prove or disprove involvement in an offence nor to prove that it is suspected that the convicted person committed an offence in addition to the offence, which caused the incarceration.*

5.78 The NSW Review recently recommended that in the event of a convicted offender's conviction being quashed, the DNA profile should be erased.¹⁰² The Commission agrees with this sentiment in respect of profiles obtained after the conviction of the person. Where profiles are obtained while the person is a suspect, the quashing of their conviction should not result in the erasure of their profiles. This

¹⁰¹ See paragraphs 3.04-3.19.

¹⁰² Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) Recommendation 49 at 152.

is because the Commission recommends that the profiles of suspects should be retained indefinitely irrespective of whether they are convicted or not.¹⁰³ However, in the event of profiles being obtained while the person is convicted, they should be destroyed if the conviction is subsequently quashed. The justifications listed above collapse when it is discovered that the defendant is in fact not guilty of the crime of which he was convicted. The power to obtain samples from convicted persons is also considerably wider than that for suspects. It is therefore suggested that where an accused's conviction is quashed under section 2 of the *Criminal Procedure Act 1993* and the profile was obtained while he or she was convicted, the profile should be removed from the database.

5.79 *The Commission recommends that on the quashing of an accused's conviction, where the profile was obtained while they were in prison, the profile should be deleted from the database.*

(2) Retention

5.80 One must examine the length of time for which a profile obtained from a convicted person may be retained on the database. Should it be retained even after the convicted person has served their prison sentence? It is instructive to examine the comparative law in this regard. In Australia, there is no provision preventing the use of profiles obtained from convicted people for matching purposes after the convicted person has served their prison sentence.¹⁰⁴ In the UK, under section 64(3AA) of the *Police and Criminal Evidence Act 1984* there is no obligation to delete the profiles from the database at any stage even if the conviction has been spent. In New Zealand similarly, under the *Criminal Investigations (Bodily Samples) Act 1995*, there is no need to destroy profiles obtained from convicted people. The Commission is of the view that a similar approach should be followed in Ireland.

5.81 Again, as discussed above, it is easier to justify interference with a convicted person's rights than with a suspect's. It was accepted in *McVeigh, O'Neill and Evans v UK*,¹⁰⁵ that the category of applicant is an important factor to be taken into account when

¹⁰³ See paragraph 5.67.

¹⁰⁴ See for example section 88 of the *Crimes (Forensic Procedures) Act 2000*.

¹⁰⁵ (1983) 5 EHRR 71.

deciding whether a measure is proportionate. Retaining a convicted person's profile on a database indefinitely could have significant crime detection and prevention functions. It could allow the police to detect any future offences committed by the convicted person or could deter the person from committing any further offences. The benefits obtained by retaining this profile justify the interference with the convicted person's privacy rights.¹⁰⁶ Another important factor is the fact that the profile can only be used for the limited purpose of crime enforcement, as observed in *Marper*.¹⁰⁷

5.82 *The Commission recommends that a convicted offender's profile be retained indefinitely on a national database.*

E Volunteers

(1) Sampling

5.83 Taking samples from volunteers for crime investigation purposes is a widespread practice. It may be necessary to take samples from volunteers for a range of reasons. In any crime investigation where DNA is involved, it is imperative to take samples from the victim and from all other people who had contact with the scene but are not yet suspects in order to ensure that the DNA present at the scene does not originate from them. This is based on the evidential significance justification.¹⁰⁸ However, it has been recommended by the Commission that the taking of all samples should be exclusively governed by legislation and should encompass all samples, even those taken on a voluntary basis.¹⁰⁹ This was based on the concern that many samples are taken voluntarily and are thus unregulated by legislation. We outline here the circumstances in which such sampling may take place.

(2) Comparative Law

5.84 The comparative law indicates that provision is made in most international legislation for the sampling of volunteers. However, in these jurisdictions there are also a number of provisions

¹⁰⁶ See paragraph 3.18.

¹⁰⁷ (2003) 1 Cr App R 247.

¹⁰⁸ See paragraphs 5.13-5.14.

¹⁰⁹ See paragraph 4.61.

which require the consent of the volunteer before any sample can be taken. In the UK, under sections 63(1) and (2) of the *Police and Criminal Evidence Act 1984*, a sample may be taken from any person provided that the appropriate consent is given in writing. In New Zealand, the police may request a volunteer to give a sample under section 30(1) of the *Criminal Investigations (Bodily Samples) Act 1995*. However, in order for the consent to be a valid one, the police are obliged to provide the volunteer with a notice containing a number of statements. These must set out the purpose for which the sample is required, a statement that the person is under no obligation to consent to the taking of a sample, a statement that a person may consult a lawyer before consenting to the taking of the sample and a statement that the sample will be retained on the national databank and used for the investigation of offences. The consent must also be in writing, signed by the person, given orally and recorded on a videotape by virtue of section 34(1) of the Act.

5.85 In Australia under section 23XWR of the *Crimes Act 1914* as amended, a volunteer must be informed of a number of matters before they can give an informed consent to the forensic procedure. The constable must advise the person that they may consult a legal practitioner before giving consent, that the forensic procedure may produce evidence that can be used in a court of law and that the information may be retained on a database, on which there will be some discussion later. The consent must be given in the presence of an independent person. Similarly, Part 8 of the NSW *Crimes (Forensic Procedures) Act 2000* requires that the consent of a volunteer be informed and given in writing in the presence of an independent person.

(3) Conclusion

5.86 The Commission agrees with the thrust of these provisions. Taking a blood sample from someone who is not suspected of the commission of the crime without their informed consent could constitute an infringement of their right to bodily integrity.¹¹⁰ Therefore, safeguards akin to those in New Zealand or in Australia should be introduced to ensure that the consent of the volunteer is informed and real. In the event of a failure to follow these

¹¹⁰ See paragraph 3.28.

safeguards, any evidence obtained from the volunteer could be inadmissible in the absence of a subsequent informed consent and the profile would have to be destroyed. However, as part of the direction, the individual should also be informed of their moral, albeit not legal, duty to assist in solving the crime. The sample could be necessary to convict the perpetrator of the crime.

5.87 At present, where consent is required under the 1990 Act in respect of the taking of samples from individuals under the age of 17, section 2(10) provides that the consent of that person and their parents or guardian is necessary if that person has attained the age of 14. If the person is under 14, the consent of the parents or guardian is adequate. The definition of “appropriate consent” set out in section 2(10) should form the basis for the consent required from volunteers under the proposed scheme.

5.88 It is also important that samples are not taken unnecessarily from volunteers. Individuals should only be requested to provide bodily samples if their samples are likely to be useful for the investigation of an offence. Such an intrusive procedure should only be carried out if it is necessary. It is probable that volunteers may feel under pressure to provide a sample when they are requested to do so by the Gardaí. Consequently, such a request should not be made too readily.

5.89 It is also possible that a request to submit to giving a sample in this instance could constitute a breach of the individual’s privilege against self incrimination.¹¹¹ A failure to consent to DNA profiling could lead the Gardaí to suspect the individual of committing the crime even though they did not initially have such suspicions. This could result in the individual’s arrest and the compulsory taking of a sample under section 2 of the *Criminal Justice (Forensic Evidence) Act 1990*. While the breach of the individual’s privilege against self incrimination in this instance could be justified under the principles enunciated earlier,¹¹² this is only if the infringement is pursuing a legitimate aim. It could not be deemed to be pursuing a legitimate aim unless the request for the sample was likely to be necessary for the investigation of an offence. In order to minimise the breach to the individual’s privilege against self

¹¹¹ See paragraphs 3.33-3.35.

¹¹² See paragraph 3.35.

incrimination, failure to consent should also be precluded from constituting a reasonable ground for suspecting a person's involvement in an offence so as to justify the taking of a compulsory sample from them under section 2 of the 1990 Act and head 10 of the Scheme of the *Criminal Justice Bill 2003*. This provision would be similar to section 84 of the NSW *Crimes (Forensic Procedures) Act 2000*, which provides that evidence of a refusal or failure to consent or withdrawal of consent to a procedure is not admissible as evidence in court against the person. This would not preclude its use for investigative purposes.

5.90 *The Commission recommends that the taking of samples from volunteers should only occur under legislative cover and with the exception of the provision for the compulsory taking of samples below, only if they consent and the sample is likely to be useful for the investigation of a specific offence. Volunteers should be defined as persons from whom samples are taken who are not suspects or convicted offenders. In order for their consent to be valid, it must be informed, in writing and they should be given an opportunity to consult a legal practitioner before they agree to provide a sample. For it to be an informed consent, they should be notified of the purpose for which the sample is to be provided, the use that will be made of it and the fact that they are under no obligation to provide a sample. Failure to consent should also be precluded from constituting a reasonable ground for suspecting a person's involvement in an offence so as to justify the compulsory taking of a sample from them under section 2 of the 1990 Act and head 10 of the Scheme of the Criminal Justice Bill 2003.*

5.91 We now turn to the question of whether individuals who are not suspected of committing offences or have not been convicted of an offence may in any instance be *compelled* to provide profiles for the purpose of the investigation. Several circumstances can be contemplated whereby such profiles could become necessary. For example, it may be necessary to acquire samples from investigators or other people who were innocently present at the crime scene to ensure that the crime stains are not composed of their DNA. While in most instances, such individuals will willingly provide samples, they may sometimes refuse. This could considerably hamper the investigation. A question arises as to whether such individuals should be compelled to provide a sample in this situation.

5.92 The comparative law in general does not allow for such a power. In the UK, which is the jurisdiction with the most extensive powers in respect of the taking of samples, there is no provision authorising the compulsory collection of samples from non-suspects. In the Commission's view, a general provision allowing for the routine taking of samples from non-suspects would be incompatible with the individual's right to privacy and bodily integrity.¹¹³ We have identified three factors that should be taken into account in applying any proportionality test in deciding whether any interference with a person's right to privacy is justified.¹¹⁴ Firstly, the level of interference with the individual's rights must be considered. The level of interference is extensive here given the intimacy of the data involved. Secondly, the seriousness of the corresponding need must be considered. In this situation, the need in question is the apprehension of a criminal. While this is a serious need, the aim in question will generally be capable of being achieved without the level of interference involved here. Taking a sample from the suspect in most cases will be sufficient. However, on the other hand, it may be imperative to rule out that the profile from an ostensible crime stain in fact belongs to an innocent person who came on the scene or is from a member of the investigating team. Finally, the category of the prospective donee must be considered. In this case the donee is a non-suspect and therefore any interference with their rights must be strongly justified.

5.93 On the basis of these considerations, the Commission believes that it is only in exceptional cases that the Gardaí should be entitled to take a sample compulsorily from an unwilling non-suspect. The Gardaí should be required to obtain judicial authorisation before they can take a sample from such a non-suspect. The exceptional cases where the taking of a sample of a non-suspect would prove justifiable are those where the non-suspect is refusing to consent in order to obstruct the course of justice. It is only where the non-suspect is attempting to obstruct the course of justice that the coercive taking of a sample may justifiably be conducted. In such an instance, the non-suspect is unconcerned with the infringement of his or her individual rights and consequently, the interference with his or her individual rights cannot outweigh the legitimate aim of preventing

¹¹³ See paragraphs 3.04-3.28.

¹¹⁴ See paragraph 3.19.

and detecting crime. The Gardaí should be required to prove this desire to obstruct the course of justice on the balance of probabilities. The court, in determining whether the individual is seeking to obstruct the course of justice, should examine the reasons for the individual's refusal to consent. It should also assess the seriousness of the alleged crime for which the sample is necessary in order to decide whether the seriousness of the corresponding need justifies the compulsory taking of a sample from a non-suspect in this instance. It should examine whether the sample is truly necessary for the conduct of the investigation. If it is not so necessary, then it should not be obtained without consent, even if the individual is seeking to obstruct the course of justice. The DNA sample should also only be used for the purposes of the investigation in question and should be destroyed once it is no longer necessary for this investigation and any ensuing proceedings. It should not be retained on the national database.

5.94 *The Commission recommends that samples from persons other than suspects or convicted persons may only be taken without the consent of the person where a court order authorises the taking of the sample on the basis that the person is endeavouring to obstruct the course of justice in refusing to give the sample and the sample is necessary for the investigation of a serious offence.*

(4) Retention

(a) Retention of Profiles of Volunteers Generally

5.95 When a volunteer provides a sample, it should not automatically be assumed that such a sample may be inserted onto the national database. While an individual may consent to the taking of a sample where it will assist a particular investigation, this may not extend to allowing their profile to be placed on a database for an indefinite period. For example, while an assault victim will generally be receptive to providing a sample for the purposes of the recognition of the victim's own profile in the case against the alleged attacker, there is less likely to be consent to the use of this profile for unrelated purposes. In other words, while a person may accept the obtaining of this sample for the evidential significance justification, consent may not be forthcoming for its retention for the intelligence gathering justification. This is particularly so in the case of volunteers who provide samples in the course of mass screens. Such persons could in fact be strongly opposed to the use of their profile for insertion onto a national database. It is therefore important that before the volunteer's

profile is inserted onto the database that a full and informed consent is given to this retention and that full information is given about the implications of having the profile on the database, including its use for speculative searches.

5.96 *The Commission recommends that a volunteer's profile may only be retained on the national database, where an informed consent has been given for this. A volunteer should be advised of all the implications that this insertion will involve including the fact that it may be used for the purpose of future searches.*

5.97 Provision should also be made for volunteers who, though unconnected with any particular crime, wish their profiles to be inserted onto the national database to eliminate them from suspicion from any future crime. Such people believe that the retention of their profiles on the database effectively secures them from unjustified suspicion and in general, this retention enhances their overall confidence in the Gardaí and legal system.¹¹⁵ It is apparent that there can be no objection to enabling these individuals to submit their samples for retention on the database. No infringement of their individual rights is in issue here and allowing them to submit a profile may enhance their human rights and public security. Permitting the submission of a profile in these circumstances could be regarded as a form of freedom of expression under Article 40.6 of the Irish Constitution and Article 10 of the ECHR. Alternatively, it could be regarded as a protection of an individual's personal rights under Article 40.3 of the Constitution.

5.98 *The Commission recommends that any individual, even a person unconnected with a particular investigation, should be permitted to have their profile retained on the national database.*

(b) *Withdrawal of Consent*

5.99 In the UK, section 63A(1D) of the *Police and Criminal Evidence Act 1984* provides that a consent by a volunteer to the retention of their profile cannot be withdrawn. This provision is at variance with the situation in other common law jurisdictions. In New Zealand under section 36 of the *Criminal Investigations (Bodily Samples) Act 1995*, a person can withdraw their consent to the use of their sample at any stage after the sample has been obtained. Under

¹¹⁵ See the views of Professor David Mc Connell in *The Irish Times* 20 August 2003 at 15.

section 23XWT(2) of the Australian *Crimes Act 1914* as amended, a volunteer can withdraw their consent to the retention of the forensic material or the DNA profile.

5.100 There are clearly benefits to prohibiting the withdrawal of consent in the case of volunteers. It would lead to the detection of more crime because volunteers would be prevented from seeking the removal of their profiles from the database in the event of them committing or planning to commit any offence. However, this proposal, if implemented, would also have significant costs. It was observed by the Office of the Victorian Commissioner in a submission to the Australian Law Reform Commission that after a serious crime is committed, there is potential for the shock to induce volunteers to consent to the retention of their profiles when they would not otherwise do so.¹¹⁶ The Human Genetics Commission also noted the potential for coercion to be exercised in obtaining the initial consent.¹¹⁷ Individuals may believe that if they do not consent in these circumstances, the suspicions of the Gardaí will be aroused. While requiring an informed consent in this instance could considerably reduce the risk of such coercion, it could never be completely eliminated. Consequently, retaining the profiles of such innocent people after they have ceased to be willing entails a significant interference with their privacy and bodily integrity rights.

5.101 Such an intrusion cannot be regarded as a proportionate interference with their rights as these people are innocent and there is no reason to suspect that they will commit any crimes in the future. The category of the person involved is an important factor to be taken into account in applying the proportionality test.¹¹⁸ The slight increase in crime detection that this prohibition on withdrawal would involve could not justify the significant intrusion with the rights of these individuals. In any event, refusing to allow volunteers to withdraw their consent to the retention of their profiles could in fact

¹¹⁶ Submission of the Office of the Victorian Commissioner to the Australian Law Reform Commission and the Australian Health Ethics Committee *Report – Essentially Yours: The Protection of Human Genetic Information in Australia* (ALRC 96, 2003) at paragraphs 41.31–41.36.

¹¹⁷ Human Genetics Commission *Inside Information: Balancing Interests in the Use of Personal Genetic Data* (May 2002) at 9.24. Available online at: <http://www.hgc.gov.uk/insideinformation/index.htm#report>.

¹¹⁸ See paragraph 3.33.

reduce the number of profiles retained on the database. The prohibition on the withdrawal of consent could prove counter-productive as in practice it might deter people from initially consenting to the retention of their profiles on the database.

5.102 *The Commission recommends that volunteers be permitted to withdraw their consent to the retention of their profiles on the national database.*

(c) *The Volunteer's Index*

5.103 In Australia, volunteer's profiles may be inserted onto either an 'unlimited purposes' or a 'limited purposes' index.¹¹⁹ The 'limited purposes' index precludes the matching of profiles within this index against profiles in other indexes except with the informed consent of the volunteer. The 'unlimited purposes' index allows speculative searches to be conducted between the volunteer's index and all the other indexes. In Australia, the volunteer may submit to the addition of his profile to either index. However, this distinction between the two indexes has attracted criticism from a number of sources in Australia.¹²⁰

5.104 The Commission do not consider that there is any need for two separate indexes containing the profiles of volunteers. Instead, volunteers should be required simply either to consent to the retention of their profiles on the national database or not to consent to this. If they consent to the submission of their profile to the database, this consent will enable the profile to be used for any of the purposes detailed in the new legislation.¹²¹ If they are opposed to the use of their profile for any of these purposes, they should withhold their consent to its retention on any index. The provisions concerning informed consent suggested by the Commission would ensure that any consent was free and fully informed. Requiring the volunteer to decide between the retention of a profile on a 'limited purposes'

¹¹⁹ See for example Part 8 of the NSW *Crimes (Forensic Procedures) Act 2000*.

¹²⁰ See the submission of Justice Action to the Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) at 93.

¹²¹ See paragraphs 7.21-7.54 for a description of the purposes which we suggest the DNA database may be used for.

database, on an ‘unlimited purposes’ database or on no database at all is unnecessarily complex. This choice would on occasion confuse the volunteer and therefore result in mistaken decisions being made.

5.105 *The Commission recommends that if a volunteer consents to the retention of their profile on a national database then it may be utilised for any of the purposes permitted.*

(5) Mass Screens

5.106 The advantages and disadvantages of mass testing a population in an endeavour to find a suspect have been extensively discussed. A mass screen involves inviting individuals, sometimes only those of a specified sex and age, within a particular area to submit to DNA testing in an attempt to find the perpetrator of a crime. Those in favour of mass testing refer to the case of Colin Pitchfork, where Pitchfork’s evasion of giving his sample in such a mass screen eventually resulted in the discovery of his guilt.¹²² A friend of Pitchfork’s was overheard boasting that he had provided a sample in place of Pitchfork. This convinced the police to investigate Pitchfork. Without the mass screen here, perhaps Pitchfork’s guilt would never have emerged. The evidential significance justification supports the use of mass screens.¹²³ An example of a successful mass screen in this jurisdiction is the case of *The People (DPP) v David Lawlor*.¹²⁴ In this case a successful mass screen resulted in the identification of David Lawlor as the murderer of Marilyn Rynne. He was subsequently convicted. However, there are also cases where despite the taking of samples from huge numbers of people, the screen has been completely unsuccessful. For example, in the UK in the investigation of Sara Cameron’s murder, samples were taken from 4500 people in a mass screen. Despite this, no one has as yet been charged with the offence.¹²⁵ In Australia, criticism was directed at the sampling of a community of 500 people when it emerged subsequently that the offender was one of the suspects questioned

¹²² See paragraph 2.04.

¹²³ See paragraphs 5.13-5.14.

¹²⁴ See Willis “DNA in the Investigation of Crime” (March 2003) *Communiqué: An Garda Síochána Management Journal* 3 at 4.

¹²⁵ See the ICCL Position Paper on *Human Rights Compatibility of the Establishment of a DNA Database* October 2003 at 13. Available at: http://www.iccl.ie/criminalj/policy/03_dnapaper.pdf.

initially in the investigation.¹²⁶ This case caused the NSW Review to comment that “mass screenings should only be used as a last resort”.¹²⁷ The Review criticised the use of this procedure because traditional forms of investigation could be more useful and impinge less on police resources. They also recognised that those who failed to consent to the procedure on conscientious grounds could suffer abuse by the community and could also be the subject of suspicion from the police for this reason alone. This could induce people to submit to testing purely to avoid this criticism and suspicion. This would constitute a form of indirect compulsion. Obtaining samples from people in these circumstances could perhaps constitute an unjustifiable breach of their rights to privacy and bodily integrity.

5.107 The fact that a person’s refusal to consent to giving a sample could open them to suspicion suggests that the privilege against self incrimination could be infringed in such an instance.¹²⁸ Clearly, the privilege may justifiably be limited in certain cases.¹²⁹ However, while it may be justifiable for the privilege to be limited in cases where a person is suspected of a crime, the concern here is that mass screening could prompt self-incrimination even by non-suspects. Such compulsion at times might not constitute a proportionate interference with a person’s privilege against self-incrimination.

5.108 The Irish Council for Civil Liberties in its submission to the Commission on this topic also expressed concerns regarding mass testing.¹³⁰ Echoing the NSW Review, they suggested that mass testing was a waste of resources and that the money would be better spent on more traditional forms of investigation. They expressed the opinion that examples from other jurisdictions showed that there was no link between mass screening and the finding of the perpetrators.

¹²⁶ This case was criticised by the Parliament of New South Wales Legislative Standing Committee on Law and Justice in *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) at paragraphs 5.86–5.95.

¹²⁷ *Ibid* at paragraph 5.95.

¹²⁸ See paragraphs 3.33-3.34.

¹²⁹ See paragraph 3.35.

¹³⁰ ICCL Position Paper on *Human Rights Compatibility of the Establishment of a DNA Database* October 2003 at 12-13.

The Council favoured a system “whereby DNA evidence from a crime scene can be compared only to the DNA profiles of suspects in the crime and oppos[ed] any system of mass screening with no reasonable cause”.

5.109 The Commission accepts these concerns have validity. Mass screening is a ploy which should be used sparingly and after due consideration. However, given the potential for exceptional cases, the Commission considers that the necessity to resort to such screening is an operational decision for investigating Gardaí. The NSW Review suggested that before the police can engage in a mass screen, they should be required to acquire judicial authorisation.¹³¹ Such authorisation would only be granted in exceptional cases. While this approach would ensure that the necessity of conducting a mass screen was determined before it was proceeded with, we are of the opinion that the Garda Síochána are in a better position than the courts to evaluate the usefulness of conducting such a screen. Deciding whether the significant costs of mass testing are outweighed by the benefit likely to be achieved is a matter peculiarly within the knowledge of the Gardaí. The Commission considers that the conducting of a mass screen should be subject to the approval of a Garda Superintendent in the district where it is proposed to carry out the testing. The Superintendent should consider a number of factors in deciding whether to permit the testing to be carried out. In particular, permission for a mass screen should only be given if it is expedient to detect the perpetrator of the crime. Consideration should be given as to whether the same objective could, in practice, be achieved by less intrusive and costly means. Care should also be taken to ensure in sanctioning the mass test that the range of people who may be requested to provide a DNA sample is as narrowly defined as possible. The potential impact of the mass testing on a person’s rights to bodily integrity and privacy should also be a consideration in the decision. Given the expense which would be incurred in conducting a mass screen, it is evident that it is only in exceptional cases, where it is expedient, that mass testing should be undertaken.

¹³¹ Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) at 98.

5.110 The concerns regarding the potential breach of the non-suspect's privilege against self-incrimination in a mass screen should also be addressed.¹³² We have already suggested in respect of volunteers that a failure to consent to a forensic procedure should not be capable of constituting reasonable grounds for suspecting the involvement of a person in an offence so as to justify requiring them to give a sample under the 1990 Act and head 10 of the Scheme of the *Criminal Justice Bill 2003*.¹³³ This recommendation would also apply to those requested to provide a sample in a mass screen. This would guarantee that the interference with the individual's privilege against self incrimination is minimal.

5.111 *The Commission recommends that a Garda Superintendent or acting Superintendent be required to approve in writing a mass screen before it may be conducted. In addition to this, evidence of a person's failure to consent to testing during a mass screen should not be admissible in court.*

F A Comprehensive Database?

5.112 A number of commentators have argued for the establishment of a comprehensive database, that is a compulsory one involving every person in the State. It has been claimed that retaining the profiles of all individuals in the country could enhance rather than diminish the civil liberties of the individual.¹³⁴ This is because retaining the profiles of every individual on the database would eliminate any suggestion of discrimination in respect of a class of persons whose profiles are held. This would also help at times to ensure that the innocent were not subject to unjustified suspicion. It could avoid miscarriages of justice by helping to exclude possible suspects from connection with a crime stain.¹³⁵ The law-abiding

¹³² See paragraphs 3.33-3.35.

¹³³ See paragraph 5.89.

¹³⁴ See the views of Sir Alec Jeffreys in *The Telegraph* 19 February 2001. See also the views of Professor David McConnell in *The Irish Times* 20 August 2003 at 15.

¹³⁵ See Kaye and Imwinkelried "Forensic DNA Typing: Selected Legal Issues – A Report to the Working Group on Legal Issues, National Commission on the Future of DNA Evidence" 2 February 2000 at 29. Available at: <http://www.law.asu.edu/HomePages/Kaye/pubs/dna/ncfdna-report2-000202.htm>.

citizens would also have their civil liberties enhanced in that they could live in a safer and more secure society as such a database would ensure that an increased number of criminals would be likely to be apprehended. As a result of these concerns, Kaye and Inwinkelried have commented that “the balance of advantage seems to favor creating a comprehensive database”.¹³⁶

5.113 Sedley LJ recently observed by way of *obiter* comments in *Marper* that he “would certainly not assume that a comprehensive national DNA database or samples bank, if one were to be lawfully compiled, would constitute an unacceptable invasion of privacy”.¹³⁷ He suggested in this decision that the establishment of a comprehensive database could be compatible with the Articles in the Convention because such a database would help to ensure that only the guilty were convicted.

5.114 However, the Commission submits that such a measure could involve a disproportionate interference with the privacy and bodily integrity rights of innocent citizens. The proportionality test would not be satisfied in this instance.¹³⁸ Given that we are recommending the retention of the profiles of convicted offenders and those suspected of “arrestable offences” on the database indefinitely, mandating the creation of a comprehensive database would be difficult to justify as ‘necessary in a democratic society’. It is suggested that the advantages such a database would offer, which are detailed above, could not outweigh the significant intrusion into an individual’s personal rights. In order for a comprehensive database to be regarded as proportionate, the law enforcement gains to be achieved by the establishment of a comprehensive database, as opposed to a more limited one, would have to justify the significant intrusion on the rights of privacy and bodily integrity of innocent persons.

¹³⁶ See Kaye and Imwinkelried “Forensic DNA Typing: Selected Legal Issues – A Report to the Working Group on Legal Issues, National Commission on the Future of DNA Evidence” 2 February 2000 at 29. Available at: <http://www.law.asu.edu/HomePages/Kaye/pubs/dna/ncfdna-report2-000202.htm>.

¹³⁷ (2003) 1 Cr App R 16 247 at 273.

¹³⁸ See paragraphs 3.11-3.12 for an account of the proportionality test.

5.115 The three considerations involved in determining proportionality weigh heavily against the establishment of such a database.¹³⁹ Firstly, the level of interference with the individual's rights is considerable. The corresponding need is not very serious given that it is unlikely that most of these citizens will commit further offences. Finally, it is persons that have never committed nor were ever suspected of committing offences that are affected here. If any individual wants to be exculpated from a crime, then the individual can submit a sample for this purpose of having their profile obtained and excluded from a match with a crime stain. The profile need not be retained on the database for potential miscarriages of justice to be avoided. Consequently, we believe that a comprehensive database is a disproportionate interference with the rights of innocent individuals. Maintaining a database of the profiles of convicted offenders and suspects would suffice for law enforcement purposes.

5.116 In addition to this, the cost of creating and maintaining such an extensive database is prohibitively expensive. Taking samples from almost 4 million people and deriving profiles from these samples would be a very expensive process. The benefits received from such an expenditure would have to be substantial for this expenditure to be justified. It is submitted that they are not. As observed above, it is unlikely that the majority of these individuals will commit further offences. Consequently, obtaining and retaining the DNA profiles of the entire population is unjustifiable.

5.117 *The Commission does not recommend the establishment of a comprehensive DNA database because its establishment would weigh disproportionately against individual rights and be excessively expensive and its benefits would not be significant in terms of crime prevention.*

G Retrospectivity

5.118 Many DNA samples have already been obtained and stored by the Gardaí and the Forensic Science Laboratory. They will be hoping to insert these profiles onto any national database. Potential problems arise here. The majority of these samples and profiles were in fact obtained voluntarily outside the 1990 Act. In the event that the profiles were obtained under the 1990 Act, their destruction would

¹³⁹ See paragraph 3.19.

have been mandatory after six months under section 4. Some doubt has been cast on the lawfulness of this voluntary method of obtaining samples but to date it has been accepted as a lawful practice.¹⁴⁰ If it were to be seen as unlawful in the future, these samples could not be used as evidence in court. If the obtaining of these samples is accepted as lawful, whether these voluntary samples can be retained depends on whether at the time the individuals proffered them they were given an indication that their profiles would be retained indefinitely and perhaps inserted onto a database. If a person consented to the retention of their profile indefinitely, the profile could be retained. If however they implicitly consented merely to the use of their profile for the purposes of the investigation in issue, then the profile should have been destroyed on the conclusion of the investigation. At present the Forensic Science Laboratory possesses in excess of 700 DNA profiles, which include crime scene profiles.

5.119 In practice, it is probably impossible and certainly impractical in the majority of cases to determine what conditions the volunteer consented to. It is therefore suggested in respect of these profiles that they be retained subject to the right of the volunteer to withdraw consent if they wish the profile to be destroyed. As these profiles were obtained on a voluntary basis, they should also be destroyed if so desired. This would ensure that the intentions of those responsible for submitting the profiles are fulfilled. It would also not hamper the crime investigation functions of the Gardaí unnecessarily.

5.120 In respect of the profiles other than those of convicted offenders that were obtained under the 1990 Act but have not been destroyed as the six month period for which they may be retained has not expired, it is necessary to examine whether any new legislation should be retrospective in application and therefore apply to these profiles. It should be observed that Article 15.5 of the Constitution does not contain any general prohibition on the enactment of retrospective legislation.¹⁴¹ However, the profiles obtained other than those of convicted offenders under section 2 of the 1990 Act were

¹⁴⁰ Such a practice in respect of fingerprints was held to be unlawful by McMahon J in the Circuit Criminal Court in *The People (DPP) v Carroll* 24 February 2004 but the position in respect of DNA samples could be different.

¹⁴¹ For more detail see Hogan & Whyte *Kelly: The Irish Constitution* (4th ed Butterworths 2003) at 276-284.

given on the basis that they would be destroyed after six months in the absence of a court order. This is the position irrespective of whether they were obtained with or without consent. As a result, there is no justification for their continued retention beyond this period. In respect of the compulsory taking of samples, this power to take a sample was subject to the condition under the 1990 Act, which required the destruction of the samples after six months. Samples could only be taken under this Act for the purpose of the specific investigation. There was no provision in the Act for their use to detect other offences for which the suspect was responsible. These individuals had a legitimate expectation that the profiles would be destroyed after six months in the absence of a court order. To alter these provisions retrospectively would constitute an unjustifiable interference with the privacy rights of each individual.

5.121 The Commission recommends that the profiles obtained voluntarily outside the ambit of the 1990 Act may be retained indefinitely unless the volunteer withdraws consent to their retention. In respect of the profiles obtained under the 1990 Act, these should be destroyed within the period specified by the Act.

CHAPTER 6 THE BIOLOGICAL SAMPLES – RETENTION OR DESTRUCTION?

Introduction

6.01 In Chapter 5, we considered the issue of retaining DNA profiles and we will now discuss whether the samples themselves should be retained or destroyed. The important distinction between the samples and the profiles has already been discussed.¹ A further distinction that is made is in respect of the two categories of biological samples that primarily feature in this field, namely a scene of crime stain and a comparator sample. Although, both potentially could contain much or all the genetic information about the source of the sample,² the purpose and therefore the position of each in a criminal investigation is strikingly different. As will be emphasised throughout this chapter, a scene of crime stain has usually been left or discarded, whereas a comparator sample is provided (not always consensually) for the purpose of exculpating or implicating the source of the sample in some way or otherwise assisting the investigation. It should perhaps be noted that although this distinction may not be clear-cut especially when an unidentified sample is subsequently attributed to the source, the Commission's view is that each sample may legitimately be treated differently. Moreover, even though this distinction may give rise to difficulties in both presentation and evaluation, we consider it preferable to simply dealing with the two categories of sample together.

6.02 This chapter is divided into two Parts. In Part A, we examine whether the scene of crime stains should be retained after a profile has been created from them. In Part B, we discuss whether the

¹ See paragraphs 5.05-5.09.

² However, as will be examined at paragraph 9.08 the quality of a scene of crime stain may vary and accordingly may not enable a complete profile to be produced.

comparator samples should be retained after the conclusion of the trial for which they were obtained.

A Retention of Scene of Crime Stains

6.03 Clearly, the physical evidence from a crime scene must be retained whilst the investigation continues and is not closed. The basis upon which biological samples found at the scene are initially retained is essentially the same as with other physical evidence (such as clothing, weapons, and non-biological stains), namely in order to allow examination and test analysis to be carried out, either at the behest of the defendant or at the request of the prosecuting authority in the hope that with improved technology, a conclusive outcome may be obtained. The careful retention of the stains recovered from a scene of crime may also facilitate the defendant and enable a retained sample to be independently tested so that the result of the further test is available for the trial or perhaps for a subsequent appeal against any conviction founded on such evidence. In this regard Murphy J, in *McGrath v DPP*,³ stated:

“It must be remembered that it is a commonplace in criminal trials for a defendant to rely on ‘holes’ in the prosecution case, for example, a failure to take fingerprints or a failure to submit evidential material to forensic examination. If in such a case, there is sufficient credible evidence, apart from the missing evidence, which, if believed, would justify a safe conviction, then a trial should proceed, leaving the defendant to seek to persuade the jury or justices not to convict because evidence which might otherwise have been available was not before the court through no fault of his. Often the absence of a video film or fingerprints or DNA material is likely to hamper the prosecution as much as the defence.”⁴

6.04 There is a long line of authority that imposes a legal duty on the investigatory authorities to preserve material evidence. In *Dillon v O'Brien and Davis*⁵ Palles CB stated that: “the interest of the State

³ Murphy J (High Court 20 December 2001).

⁴ *Ibid* at 6.

⁵ (1887) 20 LR IR 300.

in the person charged being brought to trial in due course necessarily extends as well to the preservation of material evidence of his guilt or innocence as to his custody for the purpose of trial.”⁶ Also in *The Queen v Lushington, ex parte Otto*⁷ Wright J stated:

“[I]t is undoubted law that it is within the power of, and is the duty of, constables to retain for use in Court things which may be evidence of crime, and which have come into the possession of constables without wrong on their part. I think it is also undoubted law that when articles have once been produced in Court by witnesses it is right and necessary for the Court, or the constable in whose charge they are placed (as is generally the case), to preserve and retain them, so that they may be always available for the purposes of justice until the trial is concluded.”⁸

In *Murphy v DPP*⁹ Lynch J approved of these authorities, stating that they “established that evidence relevant to guilt or innocence must *so far as is necessary and practicable* be kept until the conclusion of the trial.”¹⁰

6.05 More recently, the Supreme Court considered this issue. In *Braddish v DPP*¹¹ the accused was charged with robbery and arrested on the basis of CCTV footage which purportedly identified him. He requested a copy, but was told that it had been returned to the owners because the prosecution did not intend to rely on it. The Supreme Court restrained the further prosecution of the accused on the basis that he was entitled to see the video, as it might exculpate him. In explaining the duty on the Gardaí to seek out and preserve all evidence that had a bearing on guilt and innocence, Hardiman J stated:

“It is a well-established principle that evidence relevant to guilt or innocence must, *so far as necessary and*

⁶ (1887) 20 LR IR 300 at 317.

⁷ [1894] 1 QB 420.

⁸ *Ibid* at 423.

⁹ [1989] ILRM 71.

¹⁰ *Ibid* at 76 (Emphasis added).

¹¹ [2002] 1 ILRM 151.

practicable, be kept until the conclusion of a trial. This principle also applies to the preservation of articles which may give rise to the reasonable possibility of securing relevant evidence.”¹²

6.06 This case law concerns the retention of evidence up to the end of the trial (and by necessary implication any appeals process), but we should also address whether the scene of crime stains should be retained in other situations, such as where the crime has been solved and the perpetrator convicted or, rather more controversially, when the person who is the source of the sample is acquitted or not prosecuted.¹³ The Council of Europe Committee of Ministers to Member States on the use of analysis of DNA within the framework of the criminal justice system recommended that “[s]amples and other body tissues, or the information derived from them, may be stored for longer periods: ... (ii) when the sample cannot be attributable to an individual, for example when it is found at a scene of an offence.”¹⁴ In practice, samples taken from the scene of a crime are usually kept and current attitudes appear to be inclined towards long-term storage. Indeed, this would aid the Court of Criminal Appeal in reviewing alleged miscarriages of justice following the invocation of the procedure set out in the *Criminal Procedure Act 1993*. The Commission’s initial view is that there is nothing objectionable in this option, so long as the samples are stored in appropriately secure conditions and the sources are not readily identifiable.

6.07 *The Commission is of the view that where biological samples are found at the scene of a crime they should be retained, principally as a safeguard in the event that an individual convicted of the offence to which the sample relates alleges that a miscarriage of justice has occurred and wishes to challenge the veracity of the original evidence.*

¹² [2002] 1 ILRM 151at 155 (Emphasis added).

¹³ The issue of the security and storage of the samples is discussed in paragraphs 8.04-8.20 and 8.30-8.33.

¹⁴ Council of Europe Committee of Ministers Recommendation No R (92) 1 on the use of deoxyribonucleic acid (DNA) within the framework of the criminal justice system at paragraph 8. Available at: <http://www.coe.int/cm>

B Retention of Comparator Samples

6.08 When retained, comparator samples are preserved, labelled and stored in a deep freeze facility. These samples could be accessed or disclosed in the future – perhaps by reason of changed attitudes – and subjected to the type of testing that would in accordance with present attitudes impermissibly violate the privacy of the source of the sample by revealing deeply sensitive information.

6.09 In view of this danger in respect of future usage, comparator samples obtained under the *Criminal Justice (Forensic Evidence) Act 1990* are governed by section 4. Section 4(1) safeguards against the retention of not only the comparator sample and record identifying the person from whom the sample was taken, but also “every sample identified by such record”.¹⁵ For example, under section 4(3), if the person from whom the sample is taken is acquitted, then “the destruction of the record and the sample identified by such record shall be carried out on the expiration of twenty-one days after the acquittal ...”.¹⁶

6.10 Section 4 gives rise to a potential conflict with the views we have already expressed: namely that biological samples taken from the scene should be retained on a long-term basis.¹⁷ Section 4(1) refers to “every sample identified by such record”, which would include a scene of crime stain attributable to, for example, someone acquitted of the offence for which the comparator sample relates. Whilst it may be perfectly proper for the authorities to be precluded from retaining comparator samples taken from a number of suspects who are not convicted of any offence, biological material taken from a scene of crime may form part of vital evidence in the case. If there are, for example, three different samples found at the scene of a murder, one being attributable to the victim and the remaining two being from unknown sources: one, two or none may have committed the offence, but it is simply not known until they can be found and investigations can be made in relation to their presence at the scene.

¹⁵ See paragraphs 4.54-4.58.

¹⁶ However, section 4(5) provides that the court may, on application, authorise the retention of these samples for a longer period if there is a good reason why these samples should not be destroyed.

¹⁷ See paragraph 6.06.

Say two suspects are found and comparator samples are taken and a match is confirmed with the samples found at the scene. Following questioning (and perhaps other evidence in the case, such as an eye-witness account) suspect ‘A’ is charged and convicted, whereas suspect ‘B’ is not proceeded against, perhaps because there is a perfectly innocent explanation for suspect B’s presence at the scene. Under the present law, suspect A’s comparator sample, the records relating to that sample, and any scene of crime stain attributed to suspect A may be retained. However, under section 4(2) suspect B’s records, comparator sample, and the scene of crime stain attributable to him – which will no doubt be identified by records reporting the match – must be destroyed. Should suspect A wish to challenge his conviction on the basis of the scientific evidence, maybe on the basis of analysis with new technology or it is simply that he wishes to point the blame at someone else who was there (such as suspect B), then he will be seriously disadvantaged if the original evidence taken from the scene of crime is destroyed. For these reasons, we have recommended above that the scene of crime stains should be retained.

6.11 As regards comparator samples, where section 4 does not direct the authorities to destroy the records or samples, such as in the case of where a person is convicted of the crime, it would appear that the default position is that the records and samples may be retained indefinitely. There is a clear distinction in the treatment of those convicted and those who are only ever suspected of an offence – a feature that accords with our scrutiny of ECHR jurisprudence in Chapter 3.¹⁸ There is nothing in the current law to preclude the authorities from collating profiles derived from samples taken from those convicted and then storing them in a searchable database. Indeed, Walsh made the following comment on the 1990 legislation:

“The availability of a police power to take bodily samples in the course of criminal investigations [the subject of Chapter 4] could result in the establishment of a databank of the most personal information on people who have come to the notice of the police. While this might appear attractive to those engaged in the prevention and detection of crime, it clearly has the potential to inflict enormous damage on the extent to which the personal rights of the citizen are protected. The 1990 Act has struck a balance between

¹⁸ See paragraph 3.19.

competing interests by making provision for the destruction of bodily samples, and the results obtained from those samples, in a wide range of situations.”¹⁹

Despite the current legislative framework, which was enacted at a time when our understanding of DNA was only developing, the Commission must consider in this Paper all the options that could be taken: including, whether in principle the samples of even those convicted of an offence should be retained at all.

6.12 Fears concerning genetic privacy have prompted many commentators to suggest that not only should analysis of DNA be confined to discovering information that is socially insignificant²⁰ but that the samples themselves should be destroyed once the DNA profile has been generated and the trial has concluded (any by implication any appeals process). Indeed, even in 1992, the Council of Europe Committee of Ministers recommended that:

“Samples or other body tissues taken from individuals for DNA analysis should not be kept after rendering of the final decision in the case for which they were used, unless it is necessary for purposes directly linked to those for which they were collected.”²¹

6.13 In the US there is a variable policy regarding retention of samples: some State laboratories retain them where others destroy them.²² In Belgium, Germany, Norway, and Switzerland various provisions exist requiring samples to be destroyed. This may be once a profile has been generated and entered on to the database or a defined period of time after entry or as soon as the sample is no

¹⁹ Walsh *Criminal Procedure* (Thomson Round Hall 2002) at 348.

²⁰ As we recommend at paragraph 7.20 below.

²¹ Council of Europe Committee of Ministers Recommendation No R (92) 1 on the use of deoxyribonucleic acid (DNA) within the framework of the criminal justice system at paragraph 8. Available at: <http://www.coe.int/cm>.

²² See Human Genetics Commission *Inside Information: Balancing Interests in the use of Personal Genetic Data* (May 2002) chapter 9: Forensic uses of Personal Genetic Information at 155. Available at: <http://www.hgc.gov.uk/insideinformation/index.htm#report>.

longer needed for comparison.²³ In the UK there is no difference in treatment between the biological sample and the DNA profile as both are retained.²⁴

6.14 Waller LJ in the *Marper* case²⁵ expressed the principal aims of retaining DNA samples after the conclusion of the trial, as follows:

“[T]he retention of samples permits (a) the checking of the integrity and future utility of the DNA database system; (b) a re-analysis for the up-grading of DNA profiles where new technology can improve the discriminating power of the DNA matching process; (c) re-analysis and thus an ability to extract other DNA markers and thus offer benefits in terms of speed, sensitivity and cost of searches of the database; (d) further analysis so as to be able to identify any analytical or process errors.”²⁶

The Court of Appeal found the aims of retention to be persuasive and, accordingly, went on to consider the retention of samples together with that of profiles. The Court of Appeal’s rulings on the issue of whether the authorities could indefinitely retain the samples and profiles of suspects have already been addressed in detail.²⁷ However, the UK Human Genetics Commission (“HGC”) in its report on the use of personal genetic information also highlighted the principal reasons why samples are retained, as follows:

- (i) for Quality Assurance purposes, that is so as to be able to monitor the performance of the profile supplier;
- (ii) in the event of a database match to check the veracity of the match using the original sample;
- (iii) to retest the sample with newer and more discriminating methods;

²³ See further the European Network of Forensic Science Institutes (“ENFSI”) *Working Group on DNA Survey on ENFSI Member Forensic DNA Database Laws* (2003).

²⁴ In Austria, France and Holland the biological samples are also retained along with the profiles.

²⁵ (2003) 1 Cr App R 247.

²⁶ *Ibid* 266.

²⁷ See paragraphs 5.51-5.56.

(iv) to investigate challenges to or errors in the original profile.²⁸

But the HGC found these reasons unconvincing. The HGC suggested how these aims could be achieved without the need to retain all biological samples (and with them the inherent risks identified previously in this Paper).²⁹

6.15 As regards (i) the HGC felt that quality assurance could be conducted adequately on a smaller scale or with samples made anonymous. In relation to (ii) and (iv), confirming matches and correcting errors could be achieved by taking new comparator samples. Any person convicted on the basis of DNA evidence who wishes to challenge the veracity of the profile would no doubt be more than willing to provide a fresh sample in order to generate a new (and presumably correct) profile. In any case, the sampling process is such that when a ‘hit’ is obtained on a database profile a second comparator sample is always taken (from which a profile is generated) to verify the ‘hit’. This has the effect of safeguarding against spurious results, any mishandling or erroneous labelling of samples, or any error in loading profiles onto the database. Another reason for always taking a second sample is that the match will ultimately need to be presented at the trial of the accused in the event that there is a ‘not guilty’ plea. Revealing that the match was obtained through a database hit may be potentially prejudicial and should be avoided.³⁰

6.16 The main practical objection – (iii) – to the destruction of comparator samples once a profile has been generated and loaded onto a database, is that the profiles from both the scene of crime stain and the comparator sample are both products of current technology and they may become obsolete in the event of further technological advancement in profiling. This appears, on the face of it, to be a legitimate concern in response to any proposals that insist on the destruction of comparator samples, especially when one considers that DNA profiling technology has developed so rapidly within a relatively short period. However, because of this development the

²⁸ Human Genetics Commission *Inside Information: Balancing Interests in the use of Personal Genetic Data* (May 2002) at 154.

²⁹ See paragraphs 2.26-2.29.

³⁰ See paragraph 9.49.

technology is such that it is arguable that there is no need to seek advancement, especially when one considers that current methods of profiling produce match probabilities of 1 in several billions.³¹ Would a more discriminating method really be worthwhile? Moreover, new samples could be taken at this stage with the advantage being that the samples will be taken in the context of improved understanding. There should be a procedure in place to enable new samples to be taken if such a concern arose. A further and more immediate point for the Government is that, whilst taking a new sample at a later date may be inconvenient and perhaps costly, so too, no doubt, is the storage and organisation of a large number of samples in appropriate conditions. But, what is clear to the Commission is that any cost-benefit analysis of this nature must factor in the compelling issues of privacy and public trust and confidence in DNA profiling.

6.17 A logical corollary to the practice of obtaining a second comparator sample is that the original sample plays a relatively nominal role in the whole process after the profile has been generated.³² Indeed one cannot readily infer a legitimate purpose for retaining every single comparator sample. The only purpose of retaining all comparator samples following the final disposition of the case would be either to put that sample to some future secondary use or as a safeguard against loss of data (the profile information).

(1) Retention or Destruction?

6.18 We have explained the distinction between the comparator sample and the profile that is generated from the sample, particularly what each reveals about the source of the sample at present and in terms of potential revelations.³³ It is apparent from this discussion that the concerns described earlier,³⁴ at present, resonate in particular with the sample to a far greater extent than with the profile. The sample may be subjected to further testing in the future, but once

³¹ See the discussion on the statistical probabilities of a DNA match in paragraphs 9.34-9.40.

³² See paragraph 6.15.

³³ See paragraphs 5.05-5.10.

³⁴ See paragraphs 2.25-2.29.

generated the profile can only be further interpreted in light of contemporaneous knowledge. The Commission therefore concludes that it is the biological sample itself which is a major cause of concern, particularly in terms of safeguarding privacy.

6.19 Paradoxically, it is the need to protect the privacy of the source of the sample that may, on one view, militate in favour of the retention of comparator samples: if it is subsequently discovered that a forensic profile reveals much more personal information about the source, then a different technique, that does not reveal so much, will need to be developed to replace the existing profiling technology. The retention of samples, although carrying inherent risks to privacy, would facilitate the transition from an objectionable technique to a new and acceptable method, without necessarily rendering nugatory all the previous investment in the collection of samples.

6.20 This suggestion may be implausible, but as has been shown earlier it is not outside the realm of possibility, particularly when one considers that our understanding of the ‘junk’ DNA is fairly primitive. However, this scenario of retention is also predicated on the assumption that the entire profiling technique must be abandoned according to the dictates of privacy which then would favour a newer, less revealing method. What is perhaps more likely is that one or perhaps two of the current forensic loci are subsequently found to reveal or be linked to a disease, disorder or disposition, for example, of a particularly sensitive nature. In this latter scenario three potential options are available:

- (i) wholesale replacement of the technique with a newer method, as above;
- (ii) deletion of the information on and discontinuing use of the one or two loci, but preservation of the other *loci* (so that there will be a reduction from 10 to 9 or 8). Then target new *loci* that will not reveal sensitive information and yet will maintain the discriminatory value of the technique. Any matches on retained *loci* will lead to a second sample being taken and a new (full) profile will be generated;
- (iii) encryption, de-identification or non-disclosure of the information.

Only option (i) would call for retention, whereas (ii) and (iii) would not. Option (iii) would provide relatively little protection as much

would depend upon the effectiveness of regulation and trust in the custodians of any database of profiles.

6.21 Although the discussion here is speculative and therefore dependent on future events, which may not eventuate, it appears to the Commission that option (ii) is preferable – at least in the short to medium term. Not only will this option not require the retention of samples, but deleting part of the profile and targeting different loci will ensure that sensitive and private information is not retained or disclosed. Moreover, continuing to use the permissible loci means that the profile (and incidentally the investment in the technology) is not completely lost.

6.22 It is useful to note that as a result of the development of profiling techniques a number of profiles that have been held on the UK's database are representative of older methods, such as the SGM profiling system, which targeted only 6 loci instead of the 10 loci which are now targeted using the SGM Plus method.³⁵ Matches have occurred on these older profiles, some of which have been spurious,³⁶ others not, but they have either been confirmed or disproved following profiling of a second comparator sample. Moreover, because a second sample is taken the evidentiary significance of the match is not denigrated in any way. But should all current forensic loci be compromised in some way or the basis upon which profiling is currently conducted change (such as by a move away from STRs to SNPs)³⁷ then it would be a fair assessment to conclude that option (ii) together with destruction may not be desirable.

³⁵ See paragraphs 1.38-1.44.

³⁶ For example, in the UK a profile was generated from a stain found at the scene of a burglary in Bolton. This was used in a search on the database and it 'matched' (or hit) a stored profile. The hit, which had a 'match probability' of 1 in 37 million, linked Mr Raymond Easton to the burglary. Mr Easton lived 200 miles away, suffered from advanced Parkinson's disease, was unable to drive and had an alibi. Despite these factors and the lack of corroborating evidence Mr Easton was charged with the burglary in August 1999. However, the CPS requested a more advanced profile to be produced using 10 loci and the charges were dropped. See Parliament of New South Wales Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) at 48-49.

³⁷ See paragraphs 1.27-1.29 and 1.50.

6.23 A further consideration in relation to the concern that there may be a new basis for profiling is that the UK (with whom there will inevitably be cross-jurisdictional investigations involving DNA evidence) are unlikely to change wholesale from STR SGM Plus profiling to, for example, SNPs profiling, particularly when one considers that this will entail re-profiling of the in excess of 2 million samples which are currently retained by the FSS.

(2) Conclusion on Sample Retention in Principle.

6.24 In considering this subject the Commission is acutely aware that the prospect of governmental organisations having the power to collect, analyse, and retain (perhaps for future analysis) an individual's genetic material may to most people be particularly unpalatable. The indefinite retention of samples could discourage people from volunteering a sample in order to help with an investigation (or for that matter consenting to a forensic procedure). It is necessary for the sample to be retained until the conclusion of the trial in order for it to be presented as an exhibit in court. However, after the trial, it should be destroyed. Destroying the comparator sample after a profile has been generated and verified and a final decision in the particular case has been rendered would go a long way in allaying concerns about misuse and possible future analysis, as well as inspiring public confidence in DNA profiling and the establishment of a profile database.

6.25 *The Commission is, in principle, inclined towards destruction of comparator samples once a profile has been generated, verified and stored and the trial in respect of which the sample was obtained has concluded. Limited and anonymised samples should be retained for longer periods of time, but not indefinitely, in order to ensure that the profiling methods are accurate, for quality assurance purposes and to assist in the regulation and accreditation of providers of forensic profiles and the custodian of any database.*

CHAPTER 7 THE PERMISSIBLE USES OF THE DNA SAMPLES AND PROFILES

7.01 We will now examine the permissible purposes for which both the biological samples and the profiles may be used. While the Commission is recommending, subject to limited exception, the destruction of the comparator samples after the conclusion of the trial for which they were obtained, in this chapter we intend examining the analysis that may be conducted of these samples prior to their destruction. This chapter is extremely important as the use to which the samples and profiles can be put indicates the persons from whom the samples may be taken and the length of time for which the samples may appropriately be retained. This chapter is concerned with the analysis that may be conducted on the DNA samples and the uses to which the database may be put. As is evident from the discussion in Chapter 5, the purposes for which a DNA database may be used is an important factor to be taken into account in assessing the proportionality of any measure providing for the taking of samples from individuals.¹ If the purposes for which the samples and database may be subjected are limited, it follows that the range of persons from whom samples may be obtained is wider. This is also implicit in the reasoning of *R (S and Marper) v Chief Constable of South Yorkshire*.² Consequently, this analysis is important in underlining our reasoning in Chapter 5 and Chapter 6.

7.02 This chapter is composed of two Parts. In Part A, we examine the analysis of the DNA samples that may be undertaken. In Part B, we discuss the uses to which the DNA database may be put.

¹ See paragraphs 5.63-5.64.

² (2003) 1 Cr App R 16 247. See the discussion on the *Marper* case in paragraphs 5.49-5.58.

A Permissible Analysis of Biological Samples

(1) Scene of Crime Stain

7.03 We consider first what type of forensic analysis is permissible in respect of biological material left at a scene of crime. We note that DNA found at a scene of crime may be from a person who was not the perpetrator of the offence, but happened to be present for some innocent purpose. This factor is also crucial when determining the evidential significance of finding an individual's DNA at the scene.³ As a caveat to what is suggested in the following paragraphs, any further analysis of a scene of crime stain beyond the generation of a profile should only be contemplated in the most exceptional cases and where it is believed that the scene of crime stain comes from the perpetrator of the offence. In other words, where the authorities are at a loss as to how the investigation may be directed and, perhaps, as a precursor to an intelligence (mass) screen.⁴

7.04 In the future it could become straightforward to subject a scene of crime stain to analysis which will identify common characteristics, such as ethnicity, skin, hair and eye colour, stature, weight, age and facial characteristics. This could create a 'genetic photo-fit'. Being able to find out that the person whose DNA was left at the scene of crime may have certain physical characteristics would undoubtedly be useful intelligence in the investigation of an offence, particularly when the investigating authorities have not found other evidence to lead them to the perpetrator.

7.05 The UK Forensic Science Service ("FSS") has already conducted research into ethnic inference, as well as other commonplace characteristic markers. There have been two pilot studies by the FSS into ethnicity prediction: one in the West Midlands and the other in South Yorkshire.⁵ In the first, ethnic predictions were made for 176 solved cases submitted to the FSS by the police. These were processed 'blind', in that the FSS did not know the

³ See paragraphs 9.10-9.11

⁴ See paragraphs 5.106-5.111.

⁵ See further Werrett and Sullivan "The National DNA Database: 'Crime Reduction, New Innovation, Where to Next?'" Paper delivered at the First International Conference on Forensic Human Identification in the Millennium held in London on 23-26 October 1999.

ethnicity of the offenders until afterwards. The results were categorised as follows:

- (i) Those where a major ethnic group was indicated as being the origin of the DNA – 27%;
- (ii) Those where an ethnic group could be excluded as being the origin of the profile – 35%;
- (iii) Those where no significant inference could be made – 38%.

Of the 109 profiles that were ethnically predictable, categories (i) and (ii), four were incorrect, which is unsurprising in view of the fact that the method of prediction is based on probabilities and those individuals of ‘mixed race’ will produce anomalous results.

7.06 In the second study 110 cases were taken, some of which were ongoing and some were solved. The result was that, in 52% of the cases, ethnicity could be inferred and was considered useful in the investigation.

7.07 As a result of this research the FSS run an ethnic inference service as well as a red hair prediction service, the latter being over 80% accurate. The ethnic inference test is based on DNA sequences associated with the gene pool of a population, such as British Afro-Caribbeans who display a greater number of distinctive characteristics. Using DNA sequences, the probability of a person’s ethnicity can be calculated by comparing their SGMplus profile with the relevant population database. The prediction is generated using a FSS software package known as ALFIE (allele frequency for the inference of ethnicity). The frequency of an SGMplus profile in each of the five British ethnic groups – white-European, Afro-Caribbean, Indian Subcontinent, South East Asian and Middle Eastern – is calculated.⁶ The red hair prediction test, on the other hand, is based on the difference in the DNA of the MC1R gene (melanocortin 1 receptor) that determines hair pigmentation. A mini-sequencing technique detects variations in the *coding* sequence of this gene. It is anticipated that, together with the research being conducted by the Human Genome Project, other genes may be identified that determine

⁶ FSS Fact Sheet on commonplace characteristics. Available at: http://www.forensic.gov.uk/forensic/foi/foi_docs/43L_Commonplace_characteristics.pdf.

other human features, such as eye colour, skin colour, and perhaps even facial structure.⁷

7.08 The question that arises is: when it appears from genetic markers that the source of the scene of crime stain is likely to belong to a person from a particular ethnic group would the constitutional right to be held equal before the law in Article 40.1 prohibit the Gardaí from using this information as an investigatory lead enabling them to focus enquiries on members of that particular group? US jurisprudence in relation to the Fourteenth Amendment is of help here, where the validity of using ethnicity as an identifying feature in a criminal investigation appears always to have been presumed.⁸ Kaye and Imwinkelried note that if the police were unable to use physical evidence of ethnicity they:

“could not rely on an eyewitness’s report that a person fleeing the scene of a crime was Hispanic, on a victim’s report that a rapist was white, or on a linguist’s analysis of accent or word choice in a recorded death threat that suggested that the caller was African-American”.⁹

7.09 Evidently ethnicity is a legitimate consideration in deciding whom to approach as a suspect when descriptions of the perpetrator of an offence include ethnicity.¹⁰ What would probably be unconstitutional and repugnant would be using information about ethnicity in a way that targets or discriminates against people.

⁷ FSS Fact Sheet on commonplace characteristics. Available at: http://www.forensic.gov.uk/forensic/foi/foi_docs/43L_Commonplace_characteristics.pdf.

⁸ See Kaye and Imwinkelried “Forensic DNA Typing: Selected Legal Issues – A Report to the Working Group on Legal Issues, National Commission on the Future of DNA Evidence” 2 February 2000. Available at: <http://www.law.asu.edu/HomePages/Kaye/pubs/dna/ncfdna-report2-000202.htm>.

⁹ *Ibid* at 10.

¹⁰ See for example *Waldron v United States* 206 F 3d 597 at 604 (6th Circuit 2000) where it was held that an investigative stop of a bank robber that was based in part on the witness’ description of his race was not illegal “racial targeting” as “common sense dictates that, when determining whom to approach as a suspect of criminal wrongdoing, a police officer may legitimately consider race as a factor if descriptions of the perpetrator known to the officer include race”.

However, research conducted into the variation of particular alleles or genetic markers across ethnic groups and the use of this information in improving forensic detection methods would appear to be constitutionally permissible. The reason is that inferences as to ethnicity should not lead to the targeting of minorities or disadvantaged groups because an investigation should essentially be an objective exercise. Indeed, genetic photo-fit profiling may rectify any tendency to pursue one or other ethnic group unfairly or disproportionately.

7.10 This type of forensic analysis presents few constitutional conundrums, as any potential violation of the unidentified individual's privacy is likely to be outweighed by the greater societal good in investigating and solving the crime: especially when the scene of crime stain is from a particularly serious or heinous offence. Moreover, the category of genetic information, which is in the main phenotype, being observable characteristics, is not of a particularly sensitive nature.

7.11 A more difficult question is where to draw the line between the permissible analysis that furthers the criminal investigation and impermissible analysis. For example, the analysis of DNA to identify physical characteristics of perpetrators may represent the thin end of the wedge and analysis may 'creep' towards identifying genetic disorders and personality and behavioural traits. This goes beyond physical characteristics, such as for instance ethnicity and racial features.¹¹ The danger is that advances in our understanding of genetics, whilst having beneficial implications in respect of the treatment of genetic disorders might also have potential ramifications conducive to discrimination and stigmatisation.¹²

7.12 One view is that this type of analysis provides essential information in solving crime. However, there exists much public sensitivity concerning genetic privacy, which would demand compelling justifications for conducting any further analysis beyond inferring physical characteristics, which one may categorise as non-sensitive phenotype information.¹³ Owing to the fact that the relevant field of science is at an early stage of development it is not possible to

¹¹ Ethnicity has been considered in paragraphs 7.05-7.09.

¹² See paragraphs 2.25-2.29.

¹³ See paragraph 2.23.

be categorical about the advisability of this form of intelligence gathering. However, there is a view that the analysis of a scene of crime stain should only be conducted for the purpose of detecting, investigating and preventing crime, so as to aid the authorities to catch a perpetrator or improve profiling techniques and statistical frequency databases. Accordingly, the Commission submits that the authorities for the present should be precluded from conducting any kind of medical/behavioural research using the samples; but this should not prevent further forensic analysis for the legitimate purpose of furthering the investigation and prevention of crime and improving forensic techniques.

7.13 One further aspect to the analysis of DNA left at or associated with a scene of crime concerns the dissemination of the results of testing (that is over and beyond the profile itself), particularly as the information may be of different levels of sensitivity. As a policy matter, the Commission feels that the results should not be disseminated further than is necessary for the investigation and prosecution of the offence. This follows from the fact that the justification for this intrusion on the right to privacy is that it is necessary to solve crime. So, for example, if the investigatory authorities were to subject a scene of crime stain to testing that revealed the source to have a particular genetic disorder or contagious disease, which could form the basis of an investigatory lead, the authorities would have to be extremely careful as regards the disclosure of this sensitive type of information.¹⁴ This is immediately apparent when one considers that a victim's or an innocent third party's DNA may be mixed with the perpetrator's DNA. Although that is not to say that perpetrators have no right to privacy. Results obtained from further testing should therefore only be revealed to and by the investigatory authorities where the results relate to the potential perpetrator and are useful for the purpose of investigating the offence.

¹⁴ This is not to say that the authorities should be precluded from informing the general public if it is discovered from the analysis of the scene of crime stain that there may be a public health emergency, as required by relevant public health legislation. Although, one may speculate that the action required to be taken is more likely to arise under occupational safety and health legislation through contraction of the disease or virus by someone who worked on the sample or who has been in contact with the source, rather than as a direct disclosure that the source of the sample has a contagious disease.

7.14 *The Commission is of the view that the analysis of biological samples taken from a scene of crime should be limited to purposes that further the criminal investigation and that the results of any analysis should be kept under the most careful custody. Analysis of coding regions should be allowed to determine non-sensitive phenotype information in respect of common characteristics, such as eye colour and skin colour.*

(2) Comparator Samples

7.15 In contrast to samples provided with the informed consent of the donor in the context of medical, scientific and biotechnological research or for that matter biological material discarded or at least found at a scene of crime, samples provided in the context of a criminal investigation are not always given consensually.¹⁵ These comparator samples¹⁶ are provided for a specific purpose, namely for comparison with a biological sample left at a scene of crime. As we have already observed,¹⁷ the objective is either to exculpate or to point towards presence at the scene, and even, inferentially, guilt. This comparator sample has not been abandoned in the way that a scene of crime stain has been discarded. A comparator sample that is taken from a suspect or volunteer is in an entirely different category, as a sample of blood or the cells on a mouth swab or rather more specifically the genetic information contained within these samples, is uniquely attributable to one individual. Consequently, there is a sound view that because of the nature of the material and what may be derived from it different considerations should be contemplated.

¹⁵ See paragraphs 4.43-4.47.

¹⁶ We have already observed that section 2(11) of the *Criminal Justice (Forensic Evidence) Act 1990* provides that the powers to take bodily samples under the Act are conferred “without prejudice to any other powers exercisable by a member of the Garda Síochána”. Thus, bodily samples it seems may be taken on either a voluntary basis or under the common law and in these circumstances are unregulated. Although it should be noted that the practice of obtaining fingerprints by such a voluntary method has recently been held to be unlawful in the Circuit Criminal Court – see paragraphs 4.13-4.14. We have recommended at paragraph 4.61 that in future, all samples be taken under a proposed legislative framework.

¹⁷ See paragraph 1.32.

7.16 Whilst current profiling techniques examine only the non-coding parts of the DNA molecule, advances in forensic science suggest that the non-coding areas may contain information relevant to health or diseases or other characteristics.¹⁸ The Australian Law Reform Commission has expressed its concern about the potential extension of forensic analysis of comparator samples to physical and behavioural characteristics.¹⁹ The Human Genetics Commission also commented on this issue, as follows:

“It appears to us that there is a clear distinction between using DNA for comparison or identification purposes (which the public broadly accepts) and using it to predict the characteristics of a person. We take the view that the public might have concerns about such uses and that it should be subject to wider debate”.²⁰

7.17 There would be little use in determining the colour of the hair or ethnic origin of the donor where this is already known. This phenotype information or information regarding observable characteristics would only be useful to discover from and through testing the source of a sample left at a scene, but once a suspect is found this information is apparent. It is only the genotype information that is not discoverable through visual examination and it is this information that is arguably the most sensitive.²¹ Accordingly, an individual should have the right to keep this private and the authorities should be precluded from gaining access to this data. Therefore, unlike the scene of crime stain, which may legitimately be subjected to further testing in the interests of furthering a criminal investigation in exceptional circumstances, a comparator sample should not be subject to analysis beyond that which is necessary to establish the likelihood that the donor of the comparator sample is the source of the scene of crime stain. After all, the knowledge that ‘suspect X’ has a particular genetic disorder does little or nothing to

¹⁸ See paragraph 5.08 below.

¹⁹ Australian Law Reform Commission and the Australian Health Ethics Committee *Report – Essentially Yours: The Protection of Human Genetic Information in Australia* (ALRC 96, 2003) at paragraphs 41.108-41.111.

²⁰ Human Genetics Commission *Inside Information: Balancing Interests in the use of Personal Genetic Data* (May 2002) at 156-157. Available at: <http://www.hgc.gov.uk/insideinformation/index.htm#report>.

²¹ See paragraph 2.24.

show whether he or she was at the scene, let alone whether he or she is in actual fact guilty of the particular offence being investigated.

7.18 This safeguard against the unnecessary diminution of the right to privacy, or more specifically reduced control over one's personal genetic information, is not controversial. Indeed this type of protection exists in the laws of other jurisdictions, such as Germany.²² German law precludes the analysis of DNA to draw conclusions as to personality traits, dispositions or diseases.²³

7.19 However, German law does not explicitly restrict analysis to the non-coding DNA regions. This is so as to avoid limiting or precluding future scientific development. At present it is the non-coding regions that are of particular use for analysis because they contain the most variation.²⁴ The coding regions contain substantially less genetic variation between individuals and are not especially useful when attempting to distinguish between possible sources of a scene of crime stain. However, should it be discovered in the future that the non-coding regions and in particular the loci used in forensic profiling are not truly 'non-coding', then it may become necessary to discontinue the use of these areas.²⁵

7.20 *The Commission recommends that any legislation providing for the analysis of DNA samples for comparison with biological samples left at the scene of a crime should exclude testing which might reveal information about genetic disorders, personality and behavioural traits and predispositions. The Commission does not recommend that analysis of these DNA samples should be restricted explicitly to the non-coding regions.*

B Permitted Uses of the DNA Database

(1) General

7.21 It is imperative that the permitted uses of the DNA database be clearly defined to avoid the possibility of 'function creep'.

²² Although it should perhaps be noted that under Article 2.1 of the German Constitution the right of informational self-determination is guaranteed.

²³ See *Bundesverfassungsgericht* 2 BvR 1741/99 of 14 December 2000 paragraph 48. Available at <http://www.bverfg.de>.

²⁴ See paragraphs 1.24-1.26.

²⁵ This prospect is discussed at paragraphs 6.19-6.22.

‘Function creep’ in essence refers to “a situation where the permissible uses of a DNA profile gradually expand”.²⁶ Widespread concern has been expressed over the possibility of ‘function creep’. As observed by the Irish Council for Civil Liberties “[i]n order to be human rights compliant, any system of DNA retention particularly in the area of criminal justice, must be strictly limited in its purpose and must not be allowed to fall victim of the phenomenon of “function creep”.²⁷ In particular, there is concern that the information on the database will be disseminated to both public and private organisations. At present the information which can be derived from the profile is quite limited.²⁸ However, there is concern that research may show that these profiles reveal more about an individual than was previously realised. It has been suggested that some STR loci which were thought to be non-coding may be linked to diseases, for example Kennedy’s disease.²⁹ As well as this, whilst a profile reveals very little information about an individual’s DNA, the profile does conclusively prove parentage and relatedness.³⁰ The misuse of the information on the database is a very real concern and not just a theoretical argument. Indeed in Iceland and Tonga, the Governments actually sold genetic information to multinational corporations without the consent of those who gave samples.³¹ The safeguards that should be put in place and adopted to ensure that the profiles are used

²⁶ Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) at 137.

²⁷ ICCL Position Paper on *Human Rights Compatibility of the Establishment of a DNA Database* October 2003 at 3. Available at: http://www.iccl.ie/criminalj/policy/03_dnapaper.pdf.

²⁸ The uses to which the profiles can be put at present are described at paragraphs 1.24-1.26.

²⁹ Richards and Sutherland “Dynamic Mutations: A New Class of Mutations Causing Human Disease” (1992) 70 *Cell* 709.

³⁰ This is discussed at paragraph 5.09.

³¹ As observed by a Submission by Justice Action to the Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) at 138.

solely for the purposes permitted by the legislation are discussed later.³²

7.22 In order to avoid this possibility of “function creep”, the purposes for which the database may be used should be clearly defined in legislation. In particular, the dissemination of the information on the database to public or private bodies for purposes beyond those stipulated should be expressly prohibited. The crime enforcement purposes for which the database may be utilised are discussed later in the chapter.³³ Before we examine these uses, we discuss whether the profiles derived from samples may be used for the identification of deceased and severely injured persons.

(2) Identification of Deceased Persons

7.23 DNA identification is increasingly used as a means of ascertaining or confirming the identity of unknown deceased persons.³⁴ The DNA of the deceased person can be matched with DNA from their personal articles or from their close personal relatives to determine their identification. In the event however of a mass disaster and in certain other circumstances, it could prove useful to match the profiles from the deceased persons with the profiles on the database. This will only be possible if the body is not too degraded for nuclear DNA analysis. If the body is too degraded for nuclear DNA analysis, it may be possible to identify the person through mitochondrial DNA (“mtDNA”) analysis. However, a profile generated from mtDNA is not comparable with an STR profile so in this instance it will not be possible to search the profile of the deceased person against the profiles on the database.³⁵ Even if nuclear DNA analysis is possible, given that the national database will only contain a portion of the profiles of the population of the country, this mechanism often may not solve the mystery of the identity. However, if the profile of the deceased person is in fact

³² See paragraphs 8.04-8.20, 8.24-8.29 and 8.34-8.38.

³³ See paragraphs 7.33-7.39.

³⁴ Two examples of where DNA was very useful for the identification of deceased people are in the aftermath of the terrorist attack on the New York World Trade Centre on the 11th September 2001 and in the aftermath of the 2002 Bali bombing.

³⁵ See paragraphs 1.46-1.47.

retained on the database, it constitutes a rapid, non-invasive and efficient mechanism for identifying the deceased person.

7.24 In Australia, an index has been established which contains the profiles of missing individuals and their relatives and of unknown deceased persons. Part 1D of the *Crimes Act 1914* as amended allows for unrestricted matching between profiles contained in the ‘missing persons’ index and all other indexes of the DNA database system.³⁶

7.25 The Commission accepts that the profiles of the unidentified deceased should be matched against the convicted offenders’, suspects’ and volunteers’ indexes of the database. While the outcome of these speculative searches is varied, given the limited number of individuals whose profiles will be retained on the national database, there are no countervailing disadvantageous factors which outweigh the benefits that this attempted matching of profiles may achieve. The privacy and bodily integrity intrusions entailed by this measure are minimal. The individuals whose profiles may be utilised for this purpose are deceased.

7.26 It is imperative however that permitting the use of the DNA database for the identification of deceased people does not enable it to be used for other purposes, such as, for example, the determination of the paternity of the child of a deceased person. Using the database for the purpose of determining relatedness and parentage in this instance could cause severe distress to the family of the deceased person and could constitute an unjustifiable infringement of their right to privacy. Instead, the database should be used for the purpose only of identifying the deceased person and no other information concerning this person should be released.

7.27 *The Commission recommends that the profiles of deceased’s persons may be matched against the convicted offenders’, suspects’ and volunteers’ indexes of the database for the purpose only of identifying these persons and not for any other purpose such as paternity determination.*

(3) DNA Profiling of Deceased Persons

7.28 The Commission also recommends that it should be possible to make a court application seeking the searching of a deceased’s profile against the profiles on the crime scene index. This

³⁶ Section 23YDAF(1) of the *Crimes Act 1914* as amended.

recommendation encompasses both known and unknown deceased persons. In the UK under PACE, it is possible to take a sample from a dead body if there is reasonable suspicion that the deceased person may have committed the offence.³⁷ In Ireland, the court should be authorised to make an order allowing for the use of the database for this purpose in appropriate cases. There is a public interest in the resolution of outstanding offences. Discovering that a deceased person's profile matches a crime scene profile may enable the Gardaí to resolve and close the case and prevent resources being wasted. It is also in the victim's interest.

7.29 There should however be a requirement to show that there is a reasonable suspicion that the deceased committed the offence before a court order is made. In addition to this, given that such an order may naturally cause distress to the relatives of the deceased and impinge on the traditional respect for the dignity of the dead, the judge should be given discretion in deciding whether or not it is an appropriate case in which to make such an order. It is only where the public interest in the resolution of the outstanding offence outweighs these considerations that the court should allow a sample to be taken and the deceased's profile to be searched against the crime scene profiles on the database. The deceased's profile should not be retained on the database beyond the time that it is necessary to deduce whether there is a match or not.

7.30 *The Commission recommends that the profile of a deceased's person may be matched against the crime scene index where a court authorises this on the basis that there are reasonable grounds for suspicion that the deceased was responsible for the crime and it is an appropriate order to make having regard to all the circumstances of the case.*

(4) Identification of Severely Injured Persons

7.31 There will also be rare instances where a person is so severely injured that they are unable to identify themselves. Where this arises, determining their identity will probably be desirable. In most cases, it is likely that the injured individual would wish for their

³⁷ Human Genetics Commission Inside Information: Balancing Interests in the Use of Personal Genetic Data (May 2002) at paragraph 9.10. Available online at: [http://www.hgc.gov.uk/insideinformation/index.htm#report 147](http://www.hgc.gov.uk/insideinformation/index.htm#report%20147).

identity to be disclosed. However, there may be cases where this is not so. In the event of the individual being in a position to consent or to refuse to consent to the discovery and disclosure of their identity, no problems will arise as their wish can be respected. In the majority of cases where DNA matching is required to ascertain the identity of the injured person, the person will be incapable of giving an informed consent to the disclosure. The Commission suggests that in this situation a person with a proper interest in the matter should be entitled to make a court application seeking the identification of the person from the database. A court order could then be granted allowing for the searching of the database for the identity of the person where the court deems it appropriate. Of course as with the identification of deceased persons, it is unlikely that a match would be attained from the database. However, allowing for the searching of the severely injured person's profile against the profiles on the database could prove useful in certain circumstances. This would ensure that an appropriate balance is maintained between the right of the injured person to consent to the disclosure of their identity and the need for the identity of this individual to be revealed in certain circumstances.

7.32 The Commission recommends that in the event of a person being so severely injured as to be unable to indicate their identity, a person with a proper interest in the matter should be entitled to make a High Court application seeking the identification of the person from the DNA database.

(5) Crime Investigation Purposes

7.33 Apart from the identification of deceased and severely injured persons, it is suggested that the database be confined to use for crime investigation purposes. This is because only crime investigation purposes could justify the significant infringement on an individual's privacy and bodily integrity rights and their privilege against self incrimination that the taking of samples and retaining of profiles involves. Using the profiles for crime investigation purposes advances the legitimate aim of safeguarding the interests of society and the victims of crime. These interests justify the limited infringement on the individual's rights involved. In the event of a constitutional right to paternity determination being recognised, it is suggested that this DNA database may not be used for the purpose of determining the identity of a person's parents.

7.34 The database's primary function in the criminal investigation system is to enable 'speculative searches' to be conducted. This essentially involves searching for matches between the profiles on the crime scene index and those on the other indexes. The attainment of a match in these circumstances is referred to as a 'cold hit'. It allows a person to be connected to a crime about which there was no previous suspicion of the person's involvement.

7.35 The database may also need to be accessed for other reasons ancillary to this primary function. In order to avoid any uncertainty, each individual purpose for which it is necessary to have access to the database should be specified in the legislation. Section 92 of the *NSW Crimes (Forensic Procedures) Act 2000* provides a commendable example of such an approach. This section sets out unambiguously and concisely the purposes for which the database may be accessed. The suggested permitted purposes, in the Irish context, which might justify the accessing of the database by the custodian are:

1. To conduct forensic matches or speculative searches (as described above).
2. To make the information available to the subject to whom the information relates.
3. To establish and administer the DNA database system.
4. To examine a contention that any conviction is a miscarriage of justice under section 2 of the *Criminal Procedure Act 1993* or that a conviction should be overturned on appeal.
5. To investigate a complaint by the overseeing body of the database.
6. To compile statistics for the overseeing body on the operation of the database.
7. To exchange the profiles between jurisdictions as sanctioned by the legislation.
8. To identify unknown deceased persons.
9. To identify severely injured persons where the court sanctions it.
10. Or any other related purpose.

7.36 This approach however can be criticised for being unduly restrictive in that it does not enable the database to be utilised for any additional purposes apart from those related to the present purposes which are discovered to be useful on the operation of the database.

Indeed in NSW itself, section 93 of the 2000 Act enables regulations to prescribe additional purposes for the database. There is no restriction on the additional purposes which can be prescribed in this regard. However, the Commission disagrees with this approach. Any additional useful purposes that become evident with time should be prescribed by primary legislation. While normally a topic may not command legislative attention with any frequency, with DNA we do not think it is right to be governed by this practice and make guesses in a rapidly evolving area. Indeed, any attempt to enact a provision mirroring that in NSW could in fact be unconstitutional. Article 15.2.1° of the Constitution limits the power of the Oireachtas to delegate law-making functions to Ministers or other bodies. This is evident from the decision of *City View Press Ltd v AnCO*,³⁸ where the Supreme Court held that the test for determining whether delegated legislation is an unconstitutional delegation of parliamentary power is whether it does more than merely give effect to the principles and policies contained within the legislation itself. If it does, then it is an unconstitutional delegation of power. It is therefore apparent that if a provision similar to that adopted in Australia were enacted in Ireland, it could be unconstitutional.

7.37 In the UK, the legislation provides that the samples can be utilised for “purposes related to the prevention or detection of crime, the investigation of an offence or the conduct of an investigation”.³⁹ No further definition is given in the legislation as to the precise purposes for which the database can be accessed. In the *Marper* case⁴⁰ Liberty submitted that this section was broad enough to enable in the future information in relation to an individual’s propensity to commit crime to be obtained from the sample and to be used in a criminal trial. Waller LJ answered these concerns by observing that any change in the practice of the police force, for example by deriving information in respect of an individual’s propensity to commit crime from the samples, would have to comply with the ECHR. He also observed that unlawfulness should not be assumed. Given that it is recommended by the Commission that the samples should not be retained beyond the conclusion of the trial, the fears of Liberty are

³⁸ [1980] IR 381.

³⁹ Section 64(1A) of the *Police and Criminal Evidence Act 1984*.

⁴⁰ (2003) 1 Cr App R 16 247.

less likely to arise in Ireland.⁴¹ At present, very little information can be derived from the profile itself.⁴² However, there is the potential for the discovery that the profile contains more information than is currently recognised. It is suggested therefore that the purposes for which the information on the database may be utilised should be clearly defined. The “any other related purpose” proviso suggested above would ensure that the definition of the permitted purposes is not so constrained that the functioning of the database would be impaired.

7.38 Kaye and Inwinkelried also believe that permitting the database to be utilised for “crime investigation purposes” could be interpreted to allow the database to be used for research purposes relevant to crime detection and prevention.⁴³ While the profiles are likely to be of less use for research purposes than the samples, they could still be informative. Whether any meaningful research can be conducted on the profiles should be reviewed by an expert group set up for this purpose. The advantages and disadvantages of utilising the database for these purposes are dependant on the value of the scientific research that could be conducted on the profiles and this is beyond the scope of this Paper. However, the Commission does not, in principle, have any objection to the use of anonymous profiles for research purposes related to criminal investigation, where this is deemed useful. If it is intended to use the profiles for this purpose, this should be specifically addressed in the legislation. At present, the Commission intends to confine its recommendations to the criminal investigation and identification purposes of the database.

7.39 *The Commission recommends that the database should only be used for crime investigation purposes and the identification of deceased and severely injured people. The specific purposes for which the database may be used should be detailed in legislation.*

⁴¹ See paragraph 6.23.

⁴² This is discussed at paragraphs 5.08-5.09.

⁴³ See Kaye and Imwinkelried “Forensic DNA Typing: Selected Legal Issues – A Report to the Working Group on Legal Issues, National Commission on the Future of DNA Evidence” 2 February 2000 at 23. Available at: <http://www.law.asu.edu/HomePages/Kaye/pubs/dna/ncfdna-report2-000202.htm>.

(6) Familial DNA Trawling

7.40 It has been suggested that DNA from a family member could alert the Gardaí to the identity of the actual offender. This is a consequence of the similar genetic make up of relatives. As a result, the Gardaí may wish to perform a forensic procedure on a close relative of a suspect, where the suspect is not available for testing. For example, the murderer of Pauline Floyd, Geraldine Hughes and Sandra Newton was recently detected through his family.⁴⁴

7.41 Permitting the acquisition of a sample from a suspect's close relatives, whether on a voluntary or compulsory basis, could enable the Gardaí to circumvent the safeguards in the *Criminal Justice (Forensic Evidence) Act 1990* and the Scheme of the *Criminal Justice Bill 2003*. This near match could create a reasonable suspicion that one or other of the family members was responsible for the commission of the offence. The near match could then be utilised to subject the actual suspect to compulsory sampling.⁴⁵ This evading of the safeguards in the legislation is apparent irrespective of whether the sampling is voluntary or compulsory.

7.42 The compulsory taking of a sample could also impact considerably on the family member's privacy and bodily integrity rights, although it is mostly in respect of the voluntary giving of samples that these concerns would arise. This is because the taking of samples compulsorily from family members would generally prove unnecessary as in such cases a sample could be taken from the suspect. The only situation where this might arise is if the suspect is

⁴⁴ See the Forensic Science Service *The National DNA Database Annual Report 2002-2003* at 25 at <http://www.forensic.gov.uk/forensic/entry.htm> for a description of this case. Pauline Floyd, Geraldine Hughes and Sandra Newton were raped and strangled in South Wales in 1973. The DNA database was searched for anyone with a DNA profile, which might suggest that they were related to the murderer. Less than 100 names were attained and these names, combined with the evidence already collected in the case, led to Joseph Kappen being identified as the main suspect. As he was deceased, a proxy DNA profile was created with the assistance of samples from family members. This DNA profile matched the crime scene profile. His body was exhumed and his DNA profile matched the crime scene profile.

⁴⁵ A sample may only be compulsorily obtained under section 2(5) of the 1990 Act where the Gardaí have reasonable grounds to suspect the involvement of the person from whom the sample is taken in the offence.

located outside the jurisdiction. In any event, the compulsory taking of samples would generally be prohibited as a result of the recommended provisions in respect of persons who are not suspects or convicted offenders. The exceptional circumstances where a non-suspect could be subjected to compulsory sampling would not be implicated here, unless the relative was endeavouring to pervert the course of justice.⁴⁶ The Commission does not believe that an exception should be made for the rare cases where the compulsory taking of a sample of a relative is necessary to implicate an individual in a crime.

7.43 We suggest however that a sample obtained voluntarily from a perpetrator's relative may be used to implicate the perpetrator in a crime because this would not involve an infringement of the suspect's privacy rights. Rather, information is obtained from another person and this is used to trigger an investigation. In this instance, the information attained would merely be used to take a sample from the individual without their consent under the 1990 Act. Of course the situation would be different if the partial match was admitted into court as evidence. This could constitute an unjustifiable breach of the suspect's privacy rights. But in the absence of the partial match's admission into court, the use of it to further the investigation cannot be regarded as objectionable. Using information obtained from another individual to further the investigation cannot *per se* be regarded as objectionable. An analogy can be drawn here with identification evidence. A victim may be shown photographs of convicted offenders. The victim may assert that the photograph resembles their attacker but that they were younger than the person in the photograph. There can be no objection to pursuing the convicted offender's younger brother in this instance.

7.44 *The Commission recommends that a sample obtained voluntarily from a perpetrator's relative may be used to implicate the perpetrator in the crime but that no compulsory power should be introduced to the effect that such a relation may be compelled to give a sample.*

7.45 A related situation is that a database search may implicate an offender's relatives rather than the actual accused. This arose in

⁴⁶ See paragraph 5.94.

the US in *Flowers v State*.⁴⁷ In this case, the crime scene profile did not match the DNA profile of a suspected rapist but ultimately the similarity between the suspect's DNA and the DNA of the trace evidence alerted the police to the original suspect's brother and the brother's DNA profile did match. In this situation, it has been argued that the investigation is a disproportionate interference with the individual's rights on the basis that their privacy rights have been intruded on without proof of the commission of any act by them which justifies this intrusion.⁴⁸ Kaye and Inwinkleried however disagree with these comments. They assert that "relatives, like other individuals, have no right to be free from legitimate investigation just because suspicion is triggered by information obtained from another person".⁴⁹ The Commission accepts these observations and does not regard the use of a partial match as a breach of an individual's privacy rights. In any event, any limited breach of the individual's privacy would be justified on the basis that this is necessary for the investigation of a crime.

7.46 If this situation were to arise in Ireland, the "partial match" would be used as grounds for requiring the relative to give a sample on the basis that the near match gave rise to a reasonable suspicion that he was responsible for the commission of the offence.⁵⁰ In this situation, the safeguards of the 1990 Act are not evaded as they are in the instance discussed above. The evidence has not been obtained in a manner which endeavoured to avoid the safeguards of the 1990 Act. Rather, the evidence was obtained lawfully and then used to further the investigation. Consequently, we see no objection to the use of the evidence for this purpose.

7.47 *The Commission recommends that it be permissible to use a DNA "partial match" from a relative to justify implicating a suspect.*

⁴⁷ 654 NE 2d 1124 (Ind 1995).

⁴⁸ See Michelle Hibbert DNA Databanks: Law Enforcement's Greatest Surveillance Tool? 34 (1999) *Wake Forest L Rev* 767.

⁴⁹ See Kaye and Imwinkelried "Forensic DNA Typing: Selected Legal Issues – A Report to the Working Group on Legal Issues, National Commission on the Future of DNA Evidence" 2 February 2000 at 22. Available at: <http://www.law.asu.edu/HomePages/Kaye/pubs/dna/ncfdna-report2-000202.htm>.

⁵⁰ See section 2(5) of the 1990 Act.

(7) Information Sharing and the International Dimension

7.48 In 1997, the EU Council of Ministers Resolution stated that “exchanging DNA analysis results may be a way of making a significant contribution to crime”.⁵¹ It is important for this objective to be achieved that the national databases are compatible with each other. This involves ensuring that countries all use the same fixed set of loci for the purpose of formulating a DNA profile. Otherwise, the DNA profiles would not be interchangeable. At present, this is the situation across Europe. However, it is important to emphasise that compatible systems are a precondition before any international cooperation in respect of DNA can occur in practical reality.

7.49 The Commission will now consider whether the profiles on the database may permissibly be given to other jurisdictions or to a European or international body for insertion onto a database. Whether the national database may be composed of profiles obtained from other jurisdictions must also be considered. Both Europol and Interpol encourage the exchange of profiles between jurisdictions.

7.50 At present, Interpol are considering the establishment of an Interpol DNA Database. Under this database, Member States would submit profiles to the database and these profiles would then be compared with those already on the database to detect a match.⁵² The conditions which will have to be met before profiles may be inserted on to such a database have not yet been established. Similarly, while Europol have not as yet established a European DNA database, there is a clear intention to establish one in the near future. This is apparent from the EU Council Resolution of the 9 June 1997 on the Exchange of DNA Analysis Results.⁵³ This Resolution specifically addresses the establishment of a European database. It states that such a database should be established after the conditions for the exchange of the DNA analysis are realised. It also encourages the creation of a

⁵¹ Council Resolution of 9 June 1997 on the Exchange of DNA Analysis Results. Official Journal C 193, 24/06/1997 p. 0002 – 0003. Available at: <http://ue.eu.int/>.

⁵² As discussed in the Interpol Handbook on *DNA Data Exchange and Practice*. Available at: <http://www.interpol.int/Public/Forensic/dna/handbook.asp>.

⁵³ Council Resolution of 9 June 1997 on the Exchange of DNA Analysis Results. Official Journal C 193, 24/06/1997 p. 0002 – 0003.

system of information sharing whereby DNA profiles would be exchanged. The Council of Europe recommendation however clearly provides that the samples and profiles derived from them can only be retained where a person has been convicted of an offence. Except in cases of terrorism, any samples and profiles obtained during the investigation of an offence should be destroyed in the event of the person not being charged with an offence or being acquitted of the offence.⁵⁴ Under the Resolution, it is only where the jurisdiction in question satisfies these conditions that its profiles may be inserted onto a European database, if such a database is created. If this Resolution is complied with, despite the fact that it is not legally binding, Ireland will be ineligible to place its profiles derived from suspect's samples on the database being used for the exchange of information, if the Commission's recommendations are followed. Also in order for a jurisdiction to match a DNA profile with that of a profile in another jurisdiction, both jurisdictions should under the Resolution satisfy the above conditions.

7.51 In the event of Ireland signing up to any arrangement to establish a European or international database, it must ensure that the transfer and searching of the DNA data processes are in compliance with its law. It may be possible to limit its access to profiles on the database to certain countries and to exclude the profiles from other Member States. Also in exchanging profiles with other jurisdictions, it must be ensured that the profiles obtained were acquired in a manner that is lawful under Irish law. For example, if the UK obtains and retains profiles from persons suspected of committing minor crimes and Ireland does not, how can it be lawful for Ireland to rely on profiles obtained by the UK from these suspects? The Commission recognises that there are advantages to utilising a wider database for the purpose of matching crime stains with profiles. It should lead to the apprehension of a greater number of criminals than would otherwise be detained. The UK database is composed of 2.1 million profiles and given the proximity of the UK to Ireland, it is likely that some of these criminals are operating within Ireland. Depriving Ireland of the advantages of such a database could therefore hamper crime investigation.

⁵⁴ Council of Europe Committee of Ministers Recommendation No R (92) 1 on the use of deoxyribonucleic (DNA) within the framework of the criminal justice system at paragraph 8. Available at: <http://www.coe.int/cm>.

7.52 Despite this, the Commission does not believe that it should be permissible to use the profiles obtained from another database when these profiles could not be legally retained on a national database here. The crime investigation benefits have already been considered in deciding on the profiles that can be retained on our database. If this were allowed, individuals whose profiles are retained on international databases would be more susceptible to criminal charges than persons whose profiles were obtained in Ireland. This is arguably a breach of Article 40.1 of the Constitution and potentially breaches the privacy or bodily integrity rights of the persons involved as it affords a lesser degree of protection to individuals whose profiles are inserted onto an international database or obtained from another jurisdiction. As there can be no objection to the using of profiles obtained in the UK that comply with Irish legal standards, the Commission does not suggest that the UK database may never be used to obtain profiles. Rather, we submit that it is only those profiles that are obtained in compliance with Irish law that may be used. This addresses the question of the profiles obtained from other jurisdictions that can be retained on our national database.

7.53 In addition to that, we must examine whether Irish profiles can be imparted to other jurisdictions. There are potential problems with this course of action. In offering Irish profiles to other jurisdictions, it must be ensured that the safeguards adopted in respect of the security and permitted uses of the profiles are also implemented in the receiving jurisdiction. The Australian Law Reform Commission has recently recommended that in the event that information stored on a DNA database system is disclosed to Interpol or any foreign agency, the Commonwealth must take reasonable steps to ensure that the information transferred will not be held, used or disclosed by the recipient inconsistently with the national minimum standards.⁵⁵ The Commission agrees with this recommendation. Implementing this recommendation would ensure that the profiles exchanged were handled in a manner compatible with Irish law.

7.54 *The Commission recommends that the State should only obtain profiles from other jurisdictions, where these profiles have been collected and retained in a manner compatible with Irish law.*

⁵⁵ Australian Law Reform Commission and the Australian Health Ethics Committee Report – *Essentially Yours: The Protection of Human Genetic Information in Australia* (ALRC 96, 2003) at 1070.

It also recommends that the State should accede to an international database if the profiles present on the database may be lawfully used for these purposes under Irish law. In the event of any profiles being submitted to an international database or exchanged with another jurisdiction, reasonable steps should be taken to ensure that the information disclosed is not used in a manner which infringes Irish law

CHAPTER 8 OVERSIGHT, REGULATION, QUALITY CONTROL AND ACCREDITATION

Introduction

8.01 The Commission’s recommendations in the previous three chapters have been premised on the security of the samples and the database. The most persuasive argument against the establishment of a national database is that the information on it may be open to misuse. As observed by the Irish Council for Civil Liberties “[o]ne of the key dangers posed by the extension of the use of DNA technology beyond the area of identification is that genetic information could be used by public or private agencies to discriminate against certain persons or groups”.¹ However, if the database is securely protected and ring fenced electronically, the arguments against the retaining of a relatively large amount of profiles are refuted and met and law-abiding citizens should have nothing to fear from its creation and maintenance as a vital protection against and tool in the detection of crime. In this chapter, we will examine the manner in which the database and the samples may be kept secure. It is only if the database is secure that our recommendations regarding the categories of persons whose profiles may be retained can be regarded as a proportionate interference with the rights of an individual.

8.02 The evidential concerns that impact on the reliability of a DNA match are discussed in Chapter 9. This chapter is also concerned with minimising the risk of concerns about reliability arising. Ensuring that the samples and the profiles are managed in an independent and competent manner will mean that the validity of a DNA match will rarely be in doubt. This will enhance the public’s confidence in DNA for crime investigation purposes and make the

¹ ICCL Position Paper on *Human Rights Compatibility of the Establishment of a DNA Database* October 2003 at 11. Available at: http://www.iccl.ie/criminalj/policy/03_dnapaper.pdf.

case for a database of convicted offenders and suspects more compelling.

8.03 In Part A of this chapter we address the important issue of who will act as custodian over the DNA database and samples and to what external oversight this body should be subject. In Part B, we discuss the roles and responsibilities of the custodian of the database and samples. The most important of these functions is to ensure that the database and samples are secure. In Part C, we appraise the quality control and quality assurance procedures the Forensic Science Laboratory at present follows. Finally, in Part D the procedures which should be followed in conducting a crime scene examination are reviewed.

A Oversight and Regulation of the DNA Samples and Database

8.04 In setting up a national database, the body who will act as custodian over the database and the samples must be named in the legislation. This body will have the vital function of ensuring the security of the database and also of guaranteeing the accuracy of the results on it. It will manage the destruction of the profiles where appropriate. It will be required to ensure that the DNA samples are protected from interference and destroyed where this is deemed necessary. It is therefore crucial that this custodian be independent and competent and that the public have confidence in its ability to carry out this task. This body must also be subject to impartial scrutiny to ensure that it is carrying out its functions competently. Legislative arrangements for an independent and objective monitoring of the entire DNA database will be necessary to inspire and ensure public confidence in its operation, security and capacity for efficiency, integrity and confidentiality.

(1) The Present Irish Position

8.05 In Ireland, the Forensic Science Laboratory (“FSL”) is an associated office of the Department of Justice, Equality and Law Reform.² It is independent from the Gardaí and consequently not subject to direction from the Gardaí. The FSL has shown itself to be competent, efficient and in practice independent from the Gardaí.

² It is currently located in a building in the grounds of the Garda Síochána Headquarters in Dublin.

There is, for example, an internationally recognised accreditation system in use at the laboratory.³ If the FSL both analysed the samples and acted as custodian of the database, the costs of maintaining such a database would be significantly reduced as there would be no need to establish a new body to act as custodian of the samples or a separate body responsible solely for the custody of the database.

8.06 However, it is crucial that the public has confidence in the operation of the DNA database. DNA profiling is conducted not just for the prosecution but also to exonerate people from suspicion in certain instances. Given the necessary cooperation and close coordination that exists between the Gardaí and the FSL, the FSL may not be perceived publicly as being distinct from and independent of the Garda Síochána. Indeed, the Minister for Justice has also recently spoken about the close partnership between the FSL and the Gardaí.⁴ Before discussing the manner in which public perceptions could be addressed, we will examine the position that has been adopted in other jurisdictions.

(2) Comparative Law

8.07 In the US, the Federal Bureau of Investigation (“FBI”) operates the national Combined DNA Index Systems (“CODIS”) database with an external public advisory committee that consists of experts in ethics and a Supreme Court judge. The operation of CODIS is also subject to external monitoring and auditing by the Department of Justice Office of the Inspector General. Such an audit was conducted in 2001 and contained criticisms regarding the FBI’s oversight of CODIS-participating laboratories.⁵ A similar approach is followed in Canada. There the Royal Canadian Mounted Police operates the national database with an advisory committee and a

³ See paragraphs 8.46-8.50.

⁴ See the Minister for Justice, Equality and Law Reform’s comments on the 10 June 2003 on the presentation of a certificate of accreditation to ISO 17025 to the Forensic Science Laboratory where he observed “[i] am aware that the Forensic Science Laboratory works in close consort with the Garda Technical Bureau. Indeed, both offices are housed in the same building. This partnership approach helps to fully integrate the forensic testing of evidence into the criminal investigation process”.

⁵ Federal Bureau of Investigation *National DNA Index System* United States 1 March 2003 at www.fbi.gov/hq/lab/codis/national.htm.

representative of the Privacy Commissioner of Canada. The database is also subject to external oversight from the Privacy Commissioner.

8.08 In Australia, there are two databases for law enforcement purposes. These are the Australian Federal Police database and the National Criminal Investigation DNA database (“NCIDD system”). The Australian Federal Police database is the Police’s own database.⁶ The NCIDD system aims to encourage inter-jurisdictional matching of DNA profiles. CrimTrac is the executive agency responsible for operating the NCIDD system. The Australasian Police Minister’s Council defines CrimTrac’s policies and appoints members to its board of management. CrimTrac’s operation of the NCIDD system is overseen by the CrimTrac User Advisory Group (“UAG”). UAG is composed mainly of police representatives and forensic scientists. This is a body which has in reality no institutional independence from the police force. Complaints against CrimTrac can be made to the State’s Privacy Commissioner under the *Privacy Act 1988*⁷ or to the State Ombudsman. However, these officials can only investigate complaints regarding activities within that State and have no jurisdiction to deal with complaints that cross State borders. The Australian Law Reform Commission (“ALRC”) has accepted that the oversight afforded by the Privacy Commissioner and the State Ombudsman is insufficient.⁸ As a result of this, the ALRC has

⁶ The Commission does not intend to consider the Australian Federal Police database here as it does not shed much additional light on the problems with the Australian system, which are apparent from the NCIDD system.

⁷ There is some doubt over whether the *Privacy Act 1988* actually applies to DNA profiles as such profiles may not currently fall within the definition of ‘personal information’ as defined in the Act - see the Australian Law Reform Commission *Report - Essentially Yours: The Protection of Human Genetic Information in Australia* (ALRC 96, 2003) at paragraph 43.5. However, the ALRC suggests that the profile probably falls within this definition as a DNA profile is capable, when combined with information held by the laboratory, of identifying the individual from whom the profile was obtained. Where the Act applies, the collection, use, storage and disclosure of the profiles would be subject to the Information Privacy Principles within this Act. These principles set out several safeguards, which persons must observe in collecting, storing, using and disclosing personal information.

⁸ Australian Law Reform Commission and the Australian Health Genetics Committee *Report - Essentially Yours: The Protection of Human Genetic Information in Australia* (ALRC 96, 2003) at paragraphs 43.69 – 43.76.

recommended that CrimTrac's board of management should include independent members, such as nominees of the Office of the Federal Privacy Commissioner and the Commonwealth Ombudsman. It was also suggested that an audit should be conducted periodically by an independent body of all the DNA database systems. In respect of the retention of DNA samples, at present in Australia the laboratories, which are responsible for conducting the forensic analysis, retain the DNA samples.⁹ In respect of the retention of the DNA samples, the ALRC suggested that an independent body should be responsible for the custody of the samples rather than the laboratories which at present actually conduct the forensic analysis.¹⁰

8.09 In the UK, the national database is controlled by the Forensic Science Service under a Memorandum of Understanding with the Association of Chief Police Officers ("ACPO") and with the support of the Home Office. The Forensic Science Service ("FSS") also supplies profiles for the DNA database. The impartiality and operation of the database is overseen by the National DNA Database Board. This is chaired jointly by the FSS Chief Executive and the ACPO DNA representative.

8.10 The fact that the FSS acts as both user and custodian of the DNA database has been extensively criticised. Recently, the House of Lords Select Committee on Science and Technology recommended that "the Government should establish an independent body, including lay membership, to oversee the working of the National DNA Database, to put beyond doubt that individuals' data are properly used and protected".¹¹

8.11 A similar recommendation has been made by the Human Genetics Commission ("HGC").¹² The HGC criticised the present arrangements because the only bodies that are involved in the

⁹ Australian Law Reform Commission and the Australian Health Genetics Committee *Report - Essentially Yours: The Protection of Human Genetic Information in Australia* (ALRC 96, 2003) at paragraphs 41.112-41.149.

¹⁰ *Ibid.*

¹¹ House of Lords Select Committee on Science and Technology *Human Genetic Databases: Challenges and Opportunities* (HL Paper 57 20 March 2001) at paragraph 7.66.

¹² Human Genetics Commission *Inside Information: Balancing Interests in the Use of Personal Genetic Data* (May 2002) at paragraph 9.32. Available online at: <http://www.hgc.gov.uk/insideinformation/index.htm#report>.

oversight of the database are the FSS, the relevant Home Office policy section and ACPO, who are all responsible to the Home Secretary. Within this arrangement, there is no provision for any real external oversight. The HGC accepted that the FSS provided a secure and efficient profiling and database service to the police force. However, due to the potential conflict of interests, the HGC made four recommendations. First, that membership of the National DNA Database Board should be expanded and should encompass lay members. Secondly, the creation of a new independent advisory body, including lay representation, with oversight of the whole process from the taking of samples and the production of profiles to the operation of the database. This body could report to the National DNA Database Board. Thirdly, that the operation of the National DNA Database and the role of the custodian should be made independent of the FSS. The custodian should have to report to an enhanced management board rather than the FSS Chief Executive. Significantly, their fourth recommendation advocated the creation of a new independent body to operate a single databank of samples with strictly controlled access. Finally, the HGC recommended that “at the very least, the Home Office and ACPO establish an independent body, which would include lay membership, to have oversight over the work of the National DNA Database custodian and the profile suppliers”.¹³

8.12 As a result of this Report, membership of the National DNA Database Board has been extended to include representatives of the Home Office and the HGC. While this is a welcome development, it does not go nearly as far as the recommendations of the HGC.

8.13 In respect of the DNA samples specifically, the HGC also referred with approval to the UK Government’s undertaking during the passage of the *Criminal Justice and Police Act 2001* to give consideration to the creation of an independent body to hold the samples.¹⁴

¹³ Human Genetics Commission *Inside Information: Balancing Interests in the Use of Personal Genetic Data* (May 2002) at paragraph 9.32. Available online at: <http://www.hgc.gov.uk/insideinformation/index.htm#report>.

¹⁴ *Ibid* at paragraph 9.31.

(3) *The Custodian of the Database and DNA Samples*

8.14 It is arguable because of the public perception of close coordination between the FSL and the Gardaí that an independent agency should be established which would act as custodian of the database. The UK HGC observed that allowing the one body both to supply the profiles and to act as custodian of the database could lead to a potential conflict of interests.¹⁵ This concern would be less likely to arise if an independent agency acted as custodian of the database, while the FSL continued to profile the samples. This agency could have sole responsibility to manage the database and give either a ‘match’ or a ‘no match’ response to a request for hits. Such an approach would entail the FSL submitting profiles to the agency and the agency then entering the profiles onto the database. However, this approach would still not alleviate the perception regarding the manner in which the creation of the profiles is carried out. The FSL could still be perceived to be closely associated with the Garda Síochána. The FSL would still be intricately connected to the independent agency in submitting to it profiles on a regular basis. There is also a need for the security of the samples to be reviewed by a third party, whoever is the custodian of the database.

8.15 Consequently, the Commission suggests that an independent statutory body be established, which would incorporate the FSL and also a department responsible for the custody of the database. This body should be known as the Forensic Science Agency. Establishing such a body would ensure that both the obtaining and matching of the profiles is carried out by a body perceived publicly as independent. Moreover, the Gardaí would then be required to pay the independent laboratory directly for their services. This would ensure that the Gardaí only seek tests from the Forensic Science Agency where it is necessary to do so.¹⁶ It is imperative that any matches attained on the database are communicated to the Gardaí by virtue of a secure

¹⁵ Human Genetics Commission *Inside Information: Balancing Interests in the Use of Personal Genetic Data* (May 2002) at paragraph 9.27. Available online at: <http://www.hgc.gov.uk/insideinformation/index.htm#report>.

¹⁶ See Creaton “DNA Profiling and the Law: A Critique of the Royal Commission’s Recommendations” (1994) *Criminal Justice in Crisis* 209 at 221 for an assessment of the policy of direct charging of the police force by the Forensic Science Service in the UK.

compatible computerised system.¹⁷ They should be communicated by this means to the Forensic Liaison Office, which can then communicate the result to the relevant Gardaí. If an independent body was established with the functions of both supplying the profiles and acting as custodian of the database, there would be no conflict of interests entailed by the performance of the body of both these functions. The importance of having an independent body to perform these functions was, as we have noted, also recognised both by the House of Lords Select Committee on Science and Technology and the HGC, as detailed above.

8.16 The proposal would involve the creation of a state sponsored body along the lines of for example, the Environmental Protection Agency or the Irish Medicine Board.¹⁸ Broadly speaking, the term ‘state sponsored body’ denotes an authority which discharges specialised, central functions, yet which is set at a distance from the Government and Ministers. They enjoy an arm’s length relationship with the Minister. Typically, the relevant Minister defines the body’s policy objectives but it is left free from interference in its day to day matters. In respect of the independent body recommended here, the legislation establishing the body could outline its roles and responsibilities.

8.17 The Forensic Science Agency should be governed by a Board composed of individuals who are chosen to give the benefit of their expertise and independence. For example, this Board should include an employee of a reputable human rights organisation, a person who has experience in forensics but who is independent of the present Forensic Science Laboratory and the Government and a person who has expertise in the area of data protection. The post of Chief Executive Officer of the Forensic Science Agency should be occupied by the Director of the Forensic Science Laboratory. The Chief Executive Officer should not be a member of the Board. However, they should be in attendance at all Board meetings.

¹⁷ An example of an appropriate system is that of the Revenue On-Line Service. The Revenue On-Line Service is the Irish Revenue’s interactive internet facility, which enables business customers to conduct their business electronically with the Revenue. It is encoded in such a manner that it offers maximum security.

¹⁸ See generally Hogan & Morgan *Administrative Law in Ireland* (Sweet & Maxwell 1998) at chapter 4.

8.18 However, it is also necessary for the functions that this independent body would perform to be overseen by a supervisory person. An external review could be conducted on a regular basis – perhaps yearly – which would examine the operation of the database and make recommendations for any changes that should be implemented. This review could be carried out by the Office of the Data Protection Commissioner or other oversight Commissioner as occurs under the *Interception of Postal Packets and Telecommunications Messages (Regulation) Act 1993*. The Data Protection Commissioner recently observed that he was supportive of measures that are demonstrably necessary to protect against crime and terrorism but such measures must be proportionate and have regard to the human right to privacy.¹⁹ This Commissioner may therefore be the appropriate independent officer for this position. The Commission considers it desirable that an independent officer be given responsibility for conducting external reviews of the functions of the custodian of the DNA database. This would ensure that the security and integrity of the database was maintained. This is also a similar approach to that which has been adopted in the US and Canada and to the approach which it is suggested the Australian legislature should adopt. It also meets the criticisms directed by the Human Genetics Commission at the UK approach.

8.19 In addition to this, it is imperative that the work of the laboratory in profiling and storing the samples be overseen by an external body. The laboratory, which would be responsible for the storage of these samples, would be accredited under the ISO 17025 standard,²⁰ as outlined below.²¹ It would therefore be subject to reviews by the Irish National Accreditation Board (“INAB”)²² as to the quality control mechanisms in existence. The proposed authority

¹⁹ Data Protection Commissioner *Annual Report 2002* at 3. Available at: http://www.dataprivacy.ie/images/annual_report_2002.pdf.

²⁰ ISO/IEC DIS 17025: General Requirements for the Competence of Testing and Calibration Laboratories.

²¹ See paragraphs 8.47-8.49

²² INAB is the national accreditation body. It is a division of Forfás, the national board responsible for providing policy advice to the Government on enterprise, trade, science, technology and innovation. At present, INAB is responsible for the accreditation of the Forensic Science Laboratory in accordance with the international standards. For more detail see paragraph 8.49.

would be responsible for ensuring that the samples are maintained in appropriate conditions. They could also review the security of the storage of the samples and the procedures regarding their destruction when assessing whether the laboratory should continue to be accredited.

8.20 *The Commission recommends the enactment of legislation under which the Forensic Science Laboratory would be incorporated into an independent statutory body called the Forensic Science Agency. It should be governed by a Board composed of a number of individuals with relevant and varied expertise but who are independent of the Government. This body would be responsible for both the profiling and storage of the crime scene and comparator samples. Its functions in this regard would be subject to reviews by the Irish National Accreditation Board. A department of the Forensic Science Agency would be in charge of custody of the database. Matches obtained through this database should be communicated to the Gardaí by virtue of a secure computerised system. The body's function of managing the database would be subject to external oversight from an oversight commissioner.*

8.21 At present, there are no private laboratories conducting forensic analysis for crime investigation purposes operating within this jurisdiction. In the UK, there are several laboratories fulfilling this function. It is possible that a private laboratory or a number of such laboratories may seek to conduct forensic analysis in Ireland in the future. This will become more probable in the future when the cost of DNA profiling has decreased. As a result, the appropriate legislative framework must be in place to guard against incompetence or abuse by these organisations. While the emergence of private forensic laboratories is to be encouraged in that the competitiveness could enhance service, the private laboratories should be subject to similar controls to the independent body described above. The safeguards which we recommend should be adopted in the remainder of this chapter are equally applicable to private laboratories to the extent that they are relevant to their functions.

8.22 The private laboratories will not be in need of the same regulation as the proposed independent body as their functions will not be as broad as those of the independent body. The private forensic laboratories will merely be responsible for generating a profile from the samples. Once the profile has been generated, it

should be forwarded to the custodian of the database. Records of it may be retained until the conclusion of the trial in respect of which the profiling was carried out. The crime scene and comparator samples should also be dispatched to the independent body for appropriate storage or destruction, depending on the case in hand, after their functions in respect of them have been completed. The Irish National Accreditation Board would be responsible for reviewing the relevant standards for private laboratories in terms of quality assurance to the ISO 17025 standard, while the external commissioner recommended for the State body to subsume the FSL would monitor other relevant elements, including ensuring general public confidence in a private testing laboratory.

8.23 *In the event of any private forensic laboratory establishing itself in this jurisdiction, it should also be subject to oversight, in respect of its limited functions, from the Irish National Accreditation Board and the external oversight Commissioner, which the Commission has recommended oversee the workings of the new independent body.*

B Roles and Responsibilities of the Custodian

(I) Security of the Database

8.24 In the case of *Whalen v Roe*,²³ the US Supreme Court rejected an attack on the constitutionality of storing information on a database that was “personal in character and potentially embarrassing or harmful”.²⁴ The database in this case was an electronic record of prescriptions for dangerous drugs, together with a record of the medical information and names and addresses of the patients for whom such drugs had been prescribed. The purpose of the database was to aid the authorities in investigating overuse and abuse of drugs by patients. The court deemed that the privacy of the patients was sufficiently protected by:

- (i) The statutory and regulatory duty to avoid unwarranted disclosures;
- (ii) The physical measures to ensure the security of the data; and

²³ (1977) 429 US 589.

²⁴ *Ibid* at 605.

(iii) The fact that there had been no marked breaches of confidentiality.

We shall discuss in the next few paragraphs how it can be ensured that points (i) and (ii) are satisfied in respect of the DNA database. Kaye and Imwinkelried argue that such security safeguards as restricted access and the duty of non-disclosure represent the constitutional minimum that must be provided and that storing DNA samples (and for that matter profiles) for law enforcement purposes should be constitutional in these circumstances.²⁵ This demonstrates that in order for the retention of a profile on a database to be a justifiable interference with an individual's privacy rights,²⁶ the security of that profile must be guaranteed.

8.25 The custodian will have the important function of guaranteeing the security of the database. This will involve ensuring that the profiles on the database are not used for any purposes other than the uses permitted by the legislation.²⁷ If profiles were used for purposes other than for those permitted by legislation, for example genetic testing for predisposition to illness or for insurance purposes, then this would amount to a disproportionate interference with an individual's privacy rights under Article 40.3 of the Constitution.²⁸ At present, a DNA profile consists only of the non-coding regions of DNA,²⁹ which reveal very little about an individual.³⁰ However, there is concern that research may show that these profiles reveal more about an individual than was previously envisaged.³¹ Security

²⁵ See Kaye and Imwinkelried "Forensic DNA Typing: Selected Legal Issues – A Report to the Working Group on Legal Issues, National Commission on the Future of DNA Evidence" 2 February 2000 at 25. Available at: <http://www.law.asu.edu/HomePages/Kaye/pubs/dna/ncfdna-report2-000202.htm>.

²⁶ See paragraphs 3.11-3.19.

²⁷ The uses which we suggest should be permitted are described at paragraphs 7.21-7.39.

²⁸ See paragraph 3.19.

²⁹ This is discussed in paragraphs 1.24-1.26.

³⁰ See paragraph 5.08.

³¹ See paragraphs 5.07-5.10.

measures are therefore imperative to avoid the release of this information.

8.26 It is useful to examine at this point whether the information contained on any DNA database need comply with the *Data Protection Act 1988* (“1988 Act”) and the *Data Protection (Amendment) Act 2003* (“2003 Act”). It is evident that the definition of “data” includes the information contained on a DNA database. Section 2(a)(ii) of the 2003 Act defines “data” as including “automated and manual data”. “Automated data” means, by virtue of section 2(a)(i), information that “is being processed by means of equipment operating automatically in response to instructions given for that purpose” or is “recorded with the intention that it should be processed by means of such equipment”. It is also clear that the information contained on a DNA database is “personal data” within the meaning of section 2(a)(iv). This provides that “personal data means data relating to a living individual who is or can be identified either from the data or from the data in conjunction with other information that is in, or is likely to come into, the possession of the data controller”. This encompasses the data contained on a DNA database. In fact this data could constitute “sensitive personal data” under section 2(i)(a) as it could contain information regarding the racial or ethnic origin of the individual concerned.

8.27 Consequently, in creating any DNA database, there must be compliance with the requirements of the *Data Protection Acts*. Section 2A(c)(i) of the *Data Protection Act 1988*, as inserted in by the *Data Protection (Amendment) Act 2003*, allows processing to take place where it is necessary for the administration of justice. The processing of the information on a DNA database would fall within this provision. However, the 1988 Act states that the data may only be kept for one or more specified and lawful purposes and should not be used or disclosed in a manner incompatible with those purposes. It also holds that the data should be adequate, relevant and not excessive in relation to the purposes for which it is provided and should not be kept any longer than is necessary for that purpose.³² It also specifically provides that “appropriate security measures shall be taken against unauthorised access to, or alteration, disclosure or destruction of, the data and against their accidental loss or

³² See section 2(c) of the *Data Protection Act 1988*.

destruction”.³³ However, section 5(1)(a) of the 1988 Act provides that a person shall not have the right to access personal information regarding himself or herself if it is kept for the purposes of preventing, detecting or investigating offences. All the records created by the Gardai and the Forensic Science Laboratory in the course of carrying out their duties in respect of the DNA samples and profiles would be protected by these data protection provisions. The *Data Protection Acts* also offer some protection to the security of the information contained on the database.

8.28 While the protection afforded by the *Data Protection Acts* is welcome, it is submitted that the provisions contained in these Acts do not sufficiently guarantee the security of the information on the database as they do not specify the security measures that should be adopted for this purpose. In this regard, the Commission does not intend to specify the precise measures which should be adopted for this purpose. Instead expert advice should be obtained with a view to acquiring information on the most secure mechanism for safeguarding the integrity of the database. Nonetheless, the Commission proposes to make some suggestions as to the form these security mechanisms should take. It is crucial that only a limited number of people have access to the database. It is also important that the database is securely protected to ensure intruders do not gain access to the database. It should be kept separately from the Laboratory. A special magnetic strip card should be devised to ensure that only those authorised to do so may enter. This card would be accompanied by a code to ensure that where the card is lost, it is not possible for an unauthorised user to gain access to the database. In the future, the development of methods such as fingerprint scanning and perhaps even iris scanning could be used to provide heightened security. Passwords would be provided for those authorised to use the database. It is suggested that only a limited number of people should be given access to this database. One of these would include the oversight commissioner. Others would be individuals appointed by the independent body who would have no other position in the agency. Members of the Board of the Forensic Science Agency should also be able to inspect the database. It is suggested that two of these authorised users should be required to submit their passwords before the database can be accessed. The profiles should be retained

³³ Section 2(d) of the 1988 Act.

on the database in an anonymous form. The database could also be established as a stand alone network. Physical security systems could be set up to trace all the use of the database. The database with the stored profiles should be electronically isolated so that it is immune from hackers or any other unauthorised intrusion.

8.29 *The Commission recommends that strong security measures should be implemented to ensure that the information on the database is used only for the permitted purposes set out in the legislation. In setting up a database, provision should be made for adequate resources for the responsible Board to engage expert advice to ensure proper safeguards are used.*

(2) Security of the Samples

8.30 While it is essential that the database be protected from unauthorised access, it is perhaps even more important that the crime scene and comparator samples be securely guarded against intrusion. Firstly, failure to provide adequate security may result in tampering with the samples, thereby leading to the implication of an innocent person in a crime or the exculpation of the perpetrator. It is easier to interfere with a sample than with a profile on a database. Interfering with a profile requires a detailed forensic knowledge, whilst tampering with DNA samples does not. Secondly, the sample could be used for purposes other than the purpose for which the sample was given. The Council of Europe Committee of Ministers 1992 Recommendation noted that '[s]amples collected for DNA analysis and the information derived from such analysis for the purpose of the investigation and prosecution of criminal offences must not be used for other purposes'.³⁴ The main concern here is that access could be gained to the sample by unauthorised agencies and they could subject the sample to further testing, thereby infringing the individual's privacy rights.³⁵ While at present a profile consists only of the non-coding regions of a person's DNA and therefore reveals very little personal information about an individual, the sample contains the whole of the individual's DNA and could potentially contain a large

³⁴ Council of Europe Committee of Ministers Recommendation No R (92) 1 on the use of deoxyribonucleic acid (DNA) within the framework of the criminal justice system at paragraph 2. Available at: <http://www.coe.int/cm>.

³⁵ See paragraph 7.21.

amount of very personal information concerning an individual. As a result of these concerns, in its submission to the Australian Law Reform Commission Inquiry, the Human Genetics Society of Australasia commented that the “[s]torage of genetic information requires stringent oversight and management, supported by clear guidelines, mechanisms of enforcement, transparent practices and enforceable penalties for breaches.”³⁶

8.31 The ALRC in its Report on genetic privacy sets out a number of ways in which the security of the samples can be guaranteed.³⁷ Firstly, the most reliable method of ensuring that the sample is not interfered with is to destroy it. On the sample’s destruction, the possibility of misuse of the sample is eliminated. We have already discussed the merits of destroying crime scene samples and comparator samples after the conclusion of the trial and have recommended that the crime scene sample be retained.³⁸ This is in accordance with a strong line of authority which requires that all physical evidence from a crime scene must be retained up to the end of the trial.³⁹ We believe that this principle should also apply in respect of the retaining of DNA evidence. It should also be preserved after trial as further developments in DNA technology could provide a basis on which a convicted person could challenge his conviction. However, while the Commission recommends the retention of the crime scene sample in this instance, it has also suggested that comparator samples should be destroyed after the conclusion of the trial for which they were obtained.⁴⁰ The implementation of this recommendation would ensure that the opportunities for misuse of the comparator sample are significantly reduced.

8.32 As suggested above, all samples should be retained by an independent body prior to their destruction. These samples should be retained in secure and appropriate accommodation within the laboratory of the independent agency. At present, the samples in the

³⁶ See Australian Law Reform Commission and the Australian Health Ethics Committee *Report: Essentially Yours: The Protection of Human Genetic Information in Australia* at paragraph 36.83.

³⁷ *Ibid* at paragraphs 41.128-41.141.

³⁸ See paragraph 6.07.

³⁹ *Murphy v DPP* [1989] ILRM 71, *Braddish v DPP* [2002] 1 ILRM 151.

⁴⁰ See paragraph 6.25.

Forensic Science Laboratory are retained in locked freezers. However, the Commission believe that more stringent mechanisms should be in existence to safeguard the integrity of these samples. As with the security of the database, the Commission does not intend to make specific recommendations as to the precise security mechanisms that should be adopted to guarantee the security of the samples. Instead it is suggested that expert advice be obtained in this regard. We merely offer, by way of illustration, some suggestions as to the form the security measures could take. The samples should be identified by virtue of an identification code rather than a person's name. In addition, they should be stored in a room that is accessible only by a magnetic strip card and a PIN. Within the room of their storage, they should be retained within locked freezers, as is currently the situation. Electronic access to these compartments should be given to a limited number of individuals with positions of responsibility within the agency. Electronic access with varying levels of security and combinations should be required to access the samples. On each occasion in which an authorised person enters the laboratory, they should be required to enter the purpose of their visit in a log book provided for that purpose. A CCTV camera or digital equivalent within the laboratory would record all the activity within it. A supervisor would be responsible for accounting for all the actions within the laboratory and investigating any suspicious behaviour.

8.33 *The Commission recommends that stringent and effective safeguards be put in place to ensure that all biological samples are stored under appropriately secure conditions. Expert advice should be sought regarding the precise form that these measures should take.*

(3) Criminal Liability

8.34 Laboratory staff must also be deterred from using information derived from either the DNA sample or profile for purposes other than the purposes permitted by the legislation. Unauthorised disclosure of this personal information should be made a criminal offence. An analogy can be drawn here with the *Data Protection Acts 1988-2003*, which provide that the unlawful disclosure of information is a criminal offence. A specific offence in respect of DNA should be created. An offence of unlawfully disclosing information from a DNA database exists in Australia. Section 23YO(1) of the *Crimes Act 1914* prohibits a person from

accessing information held on a DNA database system 'or any other information revealed by a forensic procedure' performed on a suspect, offender or volunteer and intentionally or recklessly causing the disclosure of the information for purposes other than those allowed for by the section.

8.35 An alternative to the Australian approach is the creation of a strict liability offence regarding the disclosure of information from the DNA samples or that contained on the database. The individual responsible for the disclosure of the information could be deemed liable for the disclosure even if intention or recklessness is not proved. Alternatively, the custodian of the national database could be held automatically liable for the disclosure of information even if it is not proved exactly who was responsible for the leak. It should however be observed that at present it is only in exceptional cases that there is resort to strict liability. It is generally confined to situations where strong policy justifications make the imposition of strict liability imperative.⁴¹ These situations include environmental, occupational safety and consumer protection laws. Strong policy considerations are embraced in respect of the disclosure of personal information from a national database or the DNA samples. An individual's rights to privacy are in issue and it is apparent that the disclosure of the personal information contained on the database could have severe consequences. It is therefore imperative that effective measures are taken to prevent this occurring. Strict liability in this instance could have a deterrent effect and thus ensure that all measures are implemented to prevent the improper release of information.

8.36 However, the Commission does not consider that a strict liability regime is required as strict security measures should be implemented even in the absence of strict liability. The supplementary measure of strict liability would not deter the party to a greater extent than an offence requiring intention or recklessness to be proved would. An alternative approach is to hold the individual or the laboratory strictly liable in the absence of proof that all reasonable measures were taken to prevent the release of information. This casts the onus of proof on the accused. This is the approach taken in the *Safety, Health and Welfare at Work Act 1989*. In this Act, the duties

⁴¹ See Chapter 7 of McAuley and McCutcheon *Criminal Liability* (Round Hall Sweet & Maxwell 2000).

of the employers to employees are expressed in terms of doing what is “reasonably practicable” and taking “reasonable care”.⁴² The Commission however does not accept that this approach should be adopted in respect of the unlawful disclosure of information from the samples or the database. It is probable in this situation that the organisation or individual would be deemed to have recklessly caused the disclosure of the information in any event. Failure to take reasonable measures to prevent the release of information is likely to constitute recklessness. Even if it does not, strict liability is unlikely to result in a greater compliance with the safeguards, which will be in place. Prohibiting the intentional or reckless disclosure of the information would be sufficient in this regard. It would be unjust in this instance to subject individuals or the Laboratory to the possibility of incurring a criminal conviction without any fault on their part. Implementing a form of strict liability in this instance could operate in an excessively onerous manner without any real corresponding benefit.

8.37 The Commission has therefore concluded that an offence of intentionally or recklessly causing the disclosure of the personal information derived from the samples or the information on the database should be created. This offence would give rise to summary proceedings for which a fine or imprisonment could be imposed on conviction. This would operate as a strong deterrent thus safeguarding the information contained on the database.

8.38 *The Commission recommends that an offence of intentionally or recklessly causing the disclosure of the information derived from the samples or the information contained on the database for purposes other than those provided for by legislation should be enacted into law.*

(4) Destruction Reports

8.39 The Commission has already recommended that certain categories of profiles should be deleted after a certain amount of time and that comparator samples be destroyed after the conclusion of the

⁴² For example see section 6(1) of the *Safety, Health and Welfare at Work Act 1989* which provides that “it shall be the duty of every employer to ensure, so far as is reasonably practicable, the safety, health and welfare at work of all his employees”.

trial for which they were obtained.⁴³ We discuss here the need for a system to ensure that these profiles and samples are destroyed when so required by the legislation.⁴⁴

8.40 In Australia, suspects' profiles are entered on to the database system with a default destruction date of 12 months from the date at which the sample was obtained. Two months before the destruction date, the computer reminds the laboratory of the need to destroy the profile and sample. The laboratory must then contact the police investigators involved to check as to the status of the case. If no extension has been granted under the relevant provision, the sample must be destroyed. This is a workable approach which would not be excessively time consuming. The Australian Law Reform Commission also recommended that in the event that a person has been eliminated from suspicion or the police have decided not to proceed with the prosecution of a person, the police investigators should inform the laboratory of this and the profile should be destroyed.⁴⁵ This ensures that the profile is not kept for any longer than absolutely necessary. In respect of the samples it similarly suggested that a computerised system be implemented which would record anonymously the samples that are retained by the laboratory. Such a system could be operated from the laboratory which stored the samples. This system could alert the laboratory to the need to destroy the samples after a specified period.

8.41 There is also a requirement for some form of external oversight to ensure that the profiles and samples are destroyed within the period that will be mandated by the legislation. The oversight Board would be responsible for overseeing the destruction of the profiles in this jurisdiction. In relation to the samples, this oversight could be carried out by the Irish National Accreditation Board ("INAB") in deciding whether it should continue to be accredited. INAB would have the expertise and independence necessary to ensure

⁴³ See paragraph 6.25.

⁴⁴ See Chapters 5 and 6 for more detail on the situations in which the Commission is recommending the destruction of the DNA profiles and samples.

⁴⁵ Australian Law Reform Commission and the Australian Health Ethics Committee Report *Essentially Yours: The Protection of Human Genetic Information in Australia* (ALRC 96, 2003) at paragraph 41.170.

that the samples are destroyed when necessary and that they are completely and not just partially destroyed.

8.42 Ensuring the destruction of the profiles and samples when required by law avoids the situation that arose in *Attorney General's Reference (No. 3 of 1999)*.⁴⁶ Here the prosecution sought to rely on a match obtained through a profile on the database which should have been deleted but was not in fact deleted. It was accepted that the sample, which ought to have been destroyed, could not be used in evidence against the person because of section 64(3B)(a) of the *Police and Criminal Evidence Act 1984*. However, the House of Lords did not agree that a similar result followed where the profile that ought to have been destroyed was the basis of further investigation. The House of Lords held that the court had discretion in deciding whether this evidence was admissible. The Commission does not agree with this approach because it appears to reward the police force for breaching the rules laid down in the legislation. One commentator has observed that this decision in fact encourages the police to hold DNA unlawfully.⁴⁷ It also results in a lack of equality between people whose profiles are retained unlawfully on the database and those whose profiles are lawfully removed. The former are subject to the risk of prosecution on the basis of a DNA match while the latter are not. In the event of our proposals in this section being implemented, such a case would be very unlikely to arise in Ireland.

8.43 *The Commission recommends that reminders as to destruction dates should be installed on computers to ensure that the profiles and samples are destroyed as provided for by legislation.*

C Laboratory Performance

8.44 As observed by one commentator, due to the high statistical probabilities of DNA evidence,⁴⁸ more challenges are likely to be directed at the chain of evidence “such as the collection of the sample, the handling of the relevant samples, the procedures which safeguard the integrity of the process at the laboratory and the computer

⁴⁶ *Attorney General's Reference (No 3 of 1999)* (2000) 2 WLR 56, [2001] 2 AC 91. See paragraph 9.29 for more discussion on this case.

⁴⁷ Zander *The Police and Criminal Evidence Act 1984* (Sweet & Maxwell 2003) at 220.

⁴⁸ As examined in paragraphs 9.35-9.38.

processes which will govern the matching of the samples within the databases”.⁴⁹ It is therefore imperative to ensure that procedures are in operation that both guarantee and demonstrate the veracity of the DNA analysis. Indeed in both *People v Castro*⁵⁰ and *Minnesota v Schwartz*⁵¹ it was the failure to follow the appropriate laboratory procedures that resulted in the exclusion of the evidence.

8.45 The accuracy of a DNA analysis depends on the quality control and quality assurance procedures in the forensic laboratory. Quality control refers to measures to help ensure that each DNA analysis result meets a required standard of quality. Quality assurance refers to monitoring, verifying and documenting laboratory performance. As expressed by the Council of Europe Committee of Ministers “DNA analysis is a sophisticated scientific procedure which should only be performed by laboratories possessing the appropriate facilities and experience”.⁵² The Forensic Science Laboratory in Ireland adopts a clear quality policy statement. Its quality manual states clearly “[i]t is the policy of the Forensic Science Laboratory to achieve and maintain a high standard of quality and to carry out and report the results of its work in an objective manner using good professional practice”.⁵³ The clearly defined objectives of this quality control system are the prevention of errors by formalising the quality management system to ensure quality management is applied to work, the creation of a mechanism by which, if errors do occur, the errors can be tracked and the modifications can be made to the system to reduce the possibility of recurrence and the continuous monitoring of the system to create a mechanism for the improvement of the quality of the work produced by the laboratory. These three objectives ensure the main tasks of any quality control system are defined.

⁴⁹ Goode “Some Observations on Evidence of DNA Frequency” (2002) 23 *Adelaide Law Review* 45 at 61.

⁵⁰ (1989) 545 NYS 2d 985 (New York Supreme Court).

⁵¹ (1989) 447 NW 2d 422 (Minnesota Supreme Court).

⁵² Council of Europe Committee of Ministers Recommendation No R (92) 1 on the use of deoxyribonucleic acid (DNA) within the framework of the criminal justice system at paragraph 2. Available at: <http://www.coe.int/cm>.

⁵³ Forensic Science Laboratory *Quality Manual*. Copy on file with the Law Reform Commission.

8.46 Laboratory accreditation programmes are a useful technique for ensuring quality control and assurance in the DNA analysis process. Indeed, at the Tenth International Symposium on Human Identification in Florida, it was stated that “accreditation is the one and only way to assure quality control”.⁵⁴ These programmes set high standards and procedures and ensure that there is external oversight of compliance with them. The Council of Europe’s 1992 Recommendation states that any accredited laboratory which controls DNA analysis should satisfy the following criteria:

- high professional knowledge and skill, coupled with appropriate quality control procedures,
- scientific integrity,
- adequate security of the installations and of the substances under investigation,
- adequate safeguards to ensure absolute confidentiality in respect of the identification of the person to whom the result of the DNA analysis relates,
- guarantee that the conditions laid down by this Recommendation are followed.⁵⁵

Finally, the Recommendation provides that the member states should have a mechanism in operation for the oversight of the accredited laboratories.

8.47 The FSL has obtained ISO 17025 accreditation⁵⁶ in relation to the work practices and procedures in the processing of cases involving DNA.⁵⁷ Consequently, the work of the FSL must comply

⁵⁴ As quoted by Hageman, Prevett and Murray in *DNA Handbook* (Butterworths Canada Ltd 2002) at 104.

⁵⁵ *Ibid* 50.

⁵⁶ This is the accreditation programme of the International Organization for Standardization (“ISO”). The ISO is a network of national standards institutes from 148 countries working in partnership with international organisations, governments, industry, business and customer representatives.

⁵⁷ It should be observed that the new ISO 17025 is also followed by laboratories in the UK. In Europe, ENFSI has developed a DNA Quality Assurance Program that outlines all of the requirements to be addressed for compliance with ISO Guide 17025.

with the minimum standards set by this programme in analysing DNA. This accreditation programme involves establishing and inspecting protocols and procedures for matters such as documentation, security, methodology, laboratory equipment calibration, evidence management, reporting, validation methods and training. A quality manual is provided to all members of the FSL outlining the clauses of ISO 17025. Each member of the FSL must comply with these procedures.

8.48 Approximately five cases are processed by the FSL per week. These cases consist of approximately sixty samples. A procedure for the storage of casework obtained is clearly set out in the documentation of the FSL. For DNA cases, exhibits are stored in sealed tamper evident bags in the DNA central store until the DNA scientist examines them. Blood samples and other biological material are stored in freezers or fridges depending on the appropriateness of each of these for the sample involved. There is also a necessity for case-file compiling and retention to ensure that all documents can be identified as coming from a case number and there is a system in place for them to be reviewed. Such a system is operated by the FSL. There is a procedure in place for identifying individual cases within the laboratory and for identifying items that pertain to each case. This is to ensure that samples are not wrongly identified as coming from a source from which they do not in fact come.⁵⁸

8.49 These procedures are not useful unless there is a procedure in place which ensures that there is compliance. The oversight over the FSL is threefold. First, internal audits are conducted within the laboratory to ensure that there is compliance with the procedures. These reviews are conducted by a member of a different department from the department which carried out the work. A quality manager in each department oversees the auditing and follows up any non-compliance.

8.50 However, there is still a need for external auditing to ensure that the public have full confidence in the integrity of the FSL. External auditing is conducted by the Irish National Accreditation Board (“INAB”). INAB, the national accreditation body, is responsible for accreditation in accordance with ISO 17025 and EN 45001. The FSL must comply with ISO 17025 and EN 45001 to

⁵⁸ See Forensic Science Laboratory *Quality Manual*.

retain its INAB accreditation. In addition, it must have a documented quality management system, calibrated equipment, traceability of measurement, a technically valid test and calibration procedures. An organisational structure with defined technical and quality responsibilities must be in place and the impartiality and technical competence of personnel must be demonstrated. Independent experts in the relevant fields assess the laboratories to ensure compliance with these procedures and the regulations.⁵⁹ These assessments occur generally on an annual basis although INAB may also conduct surprise reviews of the laboratory's work. A laboratory is required to afford INAB such reasonable assistance and compliance as is necessary to enable INAB to observe compliance with these regulations and the other criteria laid down by INAB. It is significant that INAB can withdraw accreditation if it finds lack of compliance with the appropriate standards. This form of external review is therefore very effective. A review by this body maintains confidence in the overall procedures of the Laboratory.

8.51 Thirdly, external proficiency trials are conducted by outside organisations to monitor the performance of the laboratory. Approximately six to eight of these quality assurance trials are conducted on a yearly basis. The European Network of Forensic Institutes ("ENFSI") Board is responsible for providing two of these trials.⁶⁰ ENFSI has established a code of conduct which requires practitioners to fulfil a number of duties and responsibilities and adhere to high standards of integrity and competence. Although ENFSI has no legal status, the FSL endeavours to ensure that its practitioners comply with this code of conduct. Significantly, these guidelines require forensic practitioners to take the necessary action if they have good grounds for believing that there is a situation that could result in a miscarriage of justice. The ENFSI Board's proficiency trials will review the forensic practitioner's conduct in this regard. In the event of any other private laboratory operating in

⁵⁹ For more detail on the method of assessment as carried out by the Irish National Accreditation Board see: www.forfas.ie/nab/pdfs/ilab/P7-Oct-02.pdf.

⁶⁰ The European Network of Forensic Science Institutes is an organisation which is composed of forensic scientists from various European jurisdictions. For more information see <http://www.enfsi.org>.

this area, they should be required also to be accredited under ISO 17025 and they should be subjected to equally stringent procedures.

8.52 *It is accepted by the Commission that the procedures, which provide for oversight of the Forensic Science Laboratory's performance, in particular those under the Irish National Accreditation Board, comply with best international standards. The new independent agency, which the Commission recommends be established, should be required to follow the same procedures. The Commission recommends that the quality control and quality assurance procedures be kept under review to ensure that the appropriate high standards are maintained.*

D Crime Scene Management

8.53 One of the major problems which affects the probative value of DNA evidence is contamination.⁶¹ It is also one of the primary reasons which will lead to DNA evidence being excluded from the trial. DNA profiling is very sensitive and therefore contamination substantially increases the risk that the sample given may not have come from the accused but from another source.⁶² It is consequently very important that the crime stain is not contaminated in any manner during the process of detection, collection or preservation. In this regard, it is necessary to keep under review the procedures adopted by the Gardaí in respect of crime stains to ensure that they meet the added complications DNA evidence presents. As recommended by the Interpol DNA Monitoring Expert Group, the scene of crime strategy must be reviewed in the light of experience which demonstrates what material can now provide a DNA profile.⁶³ In the absence of appropriate procedures, DNA from unusual sources

⁶¹ See paragraphs 9.07-9.08. The definition given of contamination in the *Interpol Handbook on DNA Data Exchange and Practice* at 46 is 'the accidental pollution of the crime stain with other biological substances'. This handbook is available at:
<http://www.interpol.int/Public/Forensic/dna/handbook.asp>.

⁶² Matthew Goode adverted to the sensitivity of the present profiling technology in "Some Observations on Evidence of DNA Frequency" (2002) 23 *Adelaide Law Review* 45 at 53.

⁶³ Interpol DNA Monitoring Expert Group *Interpol Handbook on DNA Data Exchange and Practice* at 9.

would not be detected. In addition to this, quality control mechanisms must be assessed to ensure that they meet the demands of DNA profiling.

8.54 For these purposes, it is very important that every Garda involved in the process from discovery of the crime scene to the relinquishment of the evidence to the Forensic Science Laboratory is properly trained and competent.⁶⁴ The Interpol DNA Monitoring Expert Group has suggested that “countries should organize training, competence assessment, and accreditation for those people involved in work with DNA evidence”.⁶⁵ It is apparent therefore that certain additional training measures need to be introduced to guarantee against the contamination of the DNA evidence. It is important that ordinary Gardaí who may be the first to arrive at a crime scene are given appropriate training on the basic principles of DNA evidence. In particular, they should be alerted to the need to preserve the scene and to prevent contamination and they should be aware of the mechanisms available to do this while carrying out the first actions at the scene. A training video on collecting DNA evidence could be introduced into Garda offices and training packages could offer training for Gardaí on avoiding the contamination of DNA evidence. It is of particular importance that the scene of crime examiners are well trained, skilled and professional. A special training programme could be designed to provide the scene of crime examiners with a detailed knowledge on the particular problems presented by the collection of DNA evidence.

8.55 It is accepted by the Commission that the procedures adopted by the Gardaí in respect of crime scene examinations are of a high standard. However, these procedures need to be kept under review to ensure that the appropriate standards are being maintained and that they meet the added complications which DNA evidence presents. While the Commission recognises that it does not have the experience or expertise necessary to suggest the precise changes that may be required to be implemented as a result of the advent of DNA, it intends to make some suggestions that could be considered and

⁶⁴ As observed by Dr R K Bramley in his Paper *Quality Assurance in DNA Profiling* at the 1st International DNA User’s Conference 24th-26th November 1999 in Lyons.

⁶⁵ Interpol DNA Monitoring Expert Group *Interpol Handbook on DNA Data Exchange and Practice* at 9.

perhaps implemented in this respect. During the evidence collection process, those involved in the collection of the samples should wear appropriate barrier clothing to avoid the contamination of the evidence. In particular, masks must be worn if the examiner is suffering from a cold.⁶⁶ Otherwise, contamination could occur by the shedding of body fluids. The equipment used to obtain the samples must also be clean. Traditional cleaning methods are not always effective in removing DNA. Interpol has suggested that specially designed sampling kits with disposable ‘DNA free’ equipment and packaging should be used at the crime scene.⁶⁷ The evidence should be placed in sealed bags on acquisition. These bags containing the sample should be labelled immediately to avoid the need for reopening. Once the bags are sealed, they should not be opened for any reason before they are handed over to the laboratory. Each item must be packed individually and packaging should not be reused. It is also suggested that materials and samples from suspects should be kept separate from those from victims to avoid any risk of cross-contamination.

8.56 There is also the risk that a suspect may be falsely implicated through tampering with the crime scene.⁶⁸ The measures above would assist in reducing this risk. In addition to this, the scene of crime examiner must seal the exhibits with evidence sealing tape⁶⁹ so that any tampering with the sample is evident. Maintaining the continuity of the samples also reduces this risk. Items of evidence should also be stored in secure laboratory areas with access limited to authorised personnel. Keeping the analysis of the samples separate from the investigation also reduces the risk of tampering. It is therefore important for these purposes that the FSL is a separate agency from the Garda Síochána.⁷⁰

8.57 While the measures described above significantly reduce the risk of contamination, they do not eliminate it. In order to ensure that

⁶⁶ Interpol DNA Monitoring Expert Group *Interpol Handbook on DNA Data Exchange and Practice* at 51.

⁶⁷ *Ibid* at 48.

⁶⁸ See paragraph 9.10.

⁶⁹ A special coloured tape could be used to illustrate that this is evidence from a crime scene.

⁷⁰ See paragraphs 8.05-8.20.

a large proportion of these mistakes are detected, the record of the chain of evidence in respect of each item must be strictly maintained by the Gardai and the scientists in the Forensic Science Agency from collection until final disposition of the samples. It is important that the record of the chain of custody of the exhibit materials and samples is carefully maintained and kept for production in court. The importance of proving the chain of evidence in court in respect of the DNA samples is evident from the decision of *The People (DPP) v Mark Lawlor*.⁷¹ In this case, the trial judge examined in detail the chain of custody of the DNA samples. Evidence was given as to the collecting of the samples, their transportation to the Garda Síochána Technical Bureau, the handing over of them to the Forensic Science Laboratory and the matching process. The Court of Criminal Appeal emphasised in this case the need for evidence to be provided of all the handling of the sample from collection until its use at the trial before it will be admitted into court. It is consequently imperative that the Garda Síochána and the Forensic Science Laboratory maintain records of all their dealings in respect of the crime stains obtained.

8.58 In addition to this, those involved in the investigative process and the victims should give samples. Their profiles would then be used to eliminate innocent or accidental contamination of the crime stains. In the UK a Police Elimination Database has been established for this purpose.⁷² In the UK, Police Regulations, brought into force in April 2003, require all new recruits to provide DNA samples for the Police Elimination Database. If police officers do not provide profiles for this database, they are not permitted to attend crime scenes. The Police Elimination Database is entirely separate from the National DNA Database. Consequently speculative searches of the profiles on the Profile Elimination Database against profiles from unsolved crimes are not carried out. A profile from the elimination database may only be matched with a specific crime scene profile when there is a real belief that there may have been contamination. It seems practical to have such an elimination database in this jurisdiction to reduce loss of time and effort if the profile of a Garda turns up from an accidental ‘crime stain’ at the

⁷¹ Court of Criminal Appeal 19 February 2001.

⁷² See the Forensic Science Service *The National DNA Database Annual Report 2002-2003* at 19 for a description of this database. Available at: <http://www.forensic.gov.uk/forensic/entry.htm>.

scene. In this regard, the UK approach seems commendable. However, given that the risk of contamination can never be eliminated and that it may not be possible to detect this contamination, this should be considered when deciding on the evidential safeguards that should attach when DNA evidence is admitted into court.⁷³

8.59 It is not proposed to make any detailed recommendations as to the exact procedures that should be followed in obtaining crime scene samples. In this regard, it is important to note that an Advisory Forum has been established by the Garda Síochána for the purpose of ensuring that the benefits of forensic science for crime investigation purposes are maximised. Any review of the crime scene examination procedures could be conducted by this Forum or its successor. The persons involved in this Forum should have the appropriate expertise to carry out such a review. However, it is suggested that the present scene of crime strategies should be reviewed by appropriate experts in the light of the increasing sensitivity of DNA technology.

8.60 *The Commission recommends that the Advisory Forum, which has been established or its successor, should be responsible for keeping under review the procedures adopted by the Garda Síochána in respect of crime scene examinations to ensure that they meet the technical advances, the technological improvements and the added complications DNA evidence presents.*

⁷³

See Chapter 9.

CHAPTER 9 DNA EVIDENCE

Introduction

9.01 In order to engage in any consideration of the principles that are relevant to the establishment of a DNA database, the suspect's right to a fair trial under Article 38.1 of the Irish Constitution¹ and Article 6(1) of the ECHR must be considered.² In particular, it is important to examine how evidence of a DNA match should be dealt with in court. This issue will be particularly important on the establishment of a national database, where suspects may be identified simply on the basis of a match on a DNA database between a crime scene sample and the sample of an individual who may not previously have been suspected of that crime. This chapter outlines the reasons why such a 'cold hit' is fallible. Even at very high levels of probability, from time to time errors will arise. It is therefore very important to emphasise at this stage that DNA evidence is not a substitute for proper police investigation. As observed by the New South Wales Privacy Commissioner in his evidence to the NSW Review "[o]ne of the things that concerns me is an increasing reliance on the technology in all of these things to the exclusion of adequate attention paid to all of the other traditional investigative ways of gathering evidence".³ On the creation of a national database, the Gardaí will still be reliant on traditional forms of investigation and a

¹ Article 38.1 of the Irish Constitution provides that "[n]o person shall be tried on any criminal charge save in due course of law".

² The relevant part of Article 6(1) of the ECHR provides "[i]n the determination of his civil rights and obligations or of any criminal charge against him, everyone is entitled to a fair and public hearing within a reasonable time by an independent and impartial tribunal established by law".

³ Evidence of Mr Chris Puplick to the Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No. 18 (February 2002) at paragraph 3.121.

DNA match is not a substitute for these traditional forms of investigation. As observed by the Director of the Forensic Science Laboratory “DNA is indeed a powerful aid but must be used in conjunction with good police intelligence and investigation”.⁴

9.02 This chapter therefore examines six problems that can arise with DNA evidence. The concerns that impinge on the probative value of a DNA match are considered in Part A. The value of holding a DNA evidential hearing is examined in Part B. The merits of requiring corroboration or a corroborative warning are also discussed in this Part. Then the problems in respect of illegally and unconstitutionally obtained DNA evidence are highlighted. In Part C, the manner in which evidence should be presented at trial is considered and an explanation is proffered on the statistical presentation of a DNA match. Finally, the desirability of giving a judicial warning in cases involving DNA evidence is discussed.

A The Probative Value of a DNA Match

9.03 DNA evidence is often perceived by the public as unique and infallible.⁵ This is not the case. As discussed previously,⁶ DNA analysis creates a profile which is based on 10 loci only. A DNA profile is not a profile of all 3.3 billion pieces of code found in the DNA. While a profile of all 3.3 billion pieces of code would be unique except in the case of identical twins, a profile based on ten loci cannot be assumed to be unique. Nonetheless, it is evident that the present DNA profiling system is indicative of a probability in the order of less than one in a thousand million or less than one in a billion that a randomly selected, unknown, unrelated person would share this profile with the matching person. There is widespread acceptance within the scientific community as to the reliability of the

⁴ Dr. Sheila Willis “DNA in the Investigation of Crime” (March 2003) *Communiqué: An Garda Síochána Management Journal* 3 at 9.

⁵ As observed by the NSW Council for Civil Liberties (2000) ‘CCL Policy on DNA’ *Civil Liberty* no 186 at 15, “because many see DNA as definitive, its potential for harm and prejudice is far greater”. See also *Allen v DPP* Court of Criminal Appeal 18 December 2003 where the court adverted to the possibility that “the matter being so technical, the jury could jump to the conclusion that the evidence is infallible”.

⁶ See paragraphs 1.43-1.44.

science of DNA evidence in general.⁷ Where an unadulterated crime scene sample is matched with a similarly unadulterated sample obtained from a person, it is highly unlikely that there is an error. As submitted recently by the Senior Managers of the Australian and New Zealand Forensic Laboratories to the NSW Review, “[t]he current STR (short tandem repeat) technology is robust, highly reliable and most importantly provides a high degree of discrimination between individuals.”⁸ Other commentators have also recently endorsed the scientific validity of the DNA technology.⁹ At present there is no scientific publication available which disputes the validity of the underlying scientific theory in respect of the DNA profiling system.

9.04 The courts have also accepted the reliability of the DNA technology in general. In Ireland, the reliability of the DNA profiling technology was accepted in *The People (DPP) v Mark Lawlor*.¹⁰ Recently in *The People (DPP) v Horgan*¹¹ the defence employed scientists in an attempt to denigrate the actual science involved. This resulted in a very lengthy trial but the court ultimately reinforced the validity of the science used. In Britain, Lord Taylor CJ introduced his decision in *R v Gordon*¹² with the words “[w]e do not doubt the validity and value of DNA evidence in general”. In the Australian case of *R v Krager*¹³ the reliability and accuracy of the DNA technology in place was accepted due to the absence of scientific evidence disputing this reliability. It was commented by Hunt CJ in the Australian case of *R v Pantoja*¹⁴ that “DNA testing has been

⁷ Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No. 18 (February 2002) at 22.

⁸ *Ibid* Submission 26, 25 November 2001 at 22.

⁹ See for example Kaye, Faigman, Saks and Saunders *Science in the Law* (West Group 2002) at Chapter 11.

¹⁰ Central Criminal Court 2 December 1995. Court of Criminal Appeal 26 February 2001. See also Maureen Smyth “DNA in the Dock” [1995] *Lab Link* Volume 2 Issue 6.

¹¹ *Irish Examiner* 25 June 2002.

¹² (1995) 1 Cr App R 290.

¹³ [2001] SASC 64.

¹⁴ (1996) 88 A Crim R 554.

accepted by the courts for some years as an acceptable scientific technique for the identification of the source of bodily tissues". Similarly in New Zealand in *R v Pengelly*¹⁵ the scientific reliability of DNA testing was accepted without question. The same conclusion has been drawn in the US.¹⁶ It is apparent from this that, irrespective of the problems concerning DNA evidence which are discussed below, DNA technology in general is a valuable tool in criminal cases and will continue to be used in the future. In reality while the reliability of the results of this profiling technique have been called into question, the theory of the DNA profiling technique has not been refuted.

(1) What Does a Match Mean?

9.05 On the establishment of a DNA database, evidence of matches between a suspect's DNA profile and a DNA profile from a crime scene would be adduced in court. Of course, such a match does not mean that the suspect committed the crime. While a match constitutes evidence that the suspect is the source of the sample, it does not always in the absence of other evidence show that the defendant has committed the crime. This was clearly expressed by Cripps JA in the Australian case *R v Green*.¹⁷ He stated that the 'match' in this case only proved that it was 'possible' that the defendant was responsible for the crime not that he actually was the offender. As he observed, in this case "the "matching" results could not, in the absence of other evidence, prove beyond reasonable doubt that the appellant was the person responsible for semen stains".¹⁸

9.06 There are six reasons why a match may not conclusively show the guilt of the defendant. There could be explanations for a match other than that the crime scene sample originated from the defendant. Firstly, the match could have arisen due to an error on the part of the laboratory staff in conducting the DNA analysis. An error could be made at any stage in the DNA profiling. There is the possibility of errors being made at the DNA extraction, quantification

¹⁵ [1992] 1 NZLR 545; (1991) 7 CRNZ 333.

¹⁶ See *State v Woodall* 385 SE 2d 253 and *Spencer v Commonwealth* 384 SE 2d 775.

¹⁷ New South Wales Court of Criminal Appeal 26 March 1993.

¹⁸ *Ibid* at 9.

and amplification and detection stages.¹⁹ Mislabelling samples is also a potential human error that could occur.²⁰ While protocols and precautions can be introduced to reduce the amount of errors,²¹ the potential for human error can never be completely removed. Miscarriages of justice can therefore arise if a match is regarded as proving the defendant's guilt. It is useful at this point to provide an example of how such a miscarriage of justice could arise. There is an incidence of a clerical error occurring in a Las Vegas forensic laboratory. This arose when a man in a detention centre accused another of raping him. DNA profiles were taken from both men and their profiles were entered on to the State DNA database. One man's profile matched two unsolved sexual assaults and he was charged with these offences. It emerged that the man's name had accidentally been switched with his cellmate's name when entering the profiles on to the DNA database. This resulted in a false match.²²

9.07 Secondly, contamination of samples can also lead to error matches. This could arise where a member of the laboratory staff accidentally contaminates the sample.²³ For example, they could inadvertently mix the sample with other samples. The sample could also become contaminated through inadequate storage facilities in the laboratory in question. The sensitivity of the present profiling technology means that there is an increased risk of accidental contamination.²⁴ This recently arose in New Zealand where traditional investigative methods discovered that the suspect could not

¹⁹ See paragraphs 1.39-1.40.

²⁰ The United States National Research Council adverted to this possibility in "The Evaluation of Forensic DNA Evidence" (National Academy Press 1996) at 80. It observed in this Paper that "[e]very human activity is associated with some risk of error. There are potential sources of error at every stage in the processing of physical evidence, from collection in the field through laboratory analysis to interpretation of results of analysis".

²¹ See paragraphs 8.44-8.52.

²² As reported in Puit "DNA Evidence: Officials Admit Error, Dismiss Case" *Las Vegas Review-Journal* 18 April 2002.

²³ See Koehler "On Conveying the Probative Value of DNA Evidence: Frequencies, Likelihood Ratios, and Error Rates" *University of Colorado Law Review* 871.

²⁴ Freidman "DNA Profiling in the 21st Century" (1999) 43 *International Journal of Offender Therapy and Comparative Criminology* 168 at 173.

have committed the offence. This was despite the fact that his profile had matched the crime scene profile. Despite reviews by a number of bodies, the cause of the contamination was not detected.²⁵ It was ultimately accepted by a Ministerial Inquiry that the incorrect results were almost definitely caused by accidental contamination that occurred during the early stages of processing the DNA sample.²⁶

9.08 Thirdly, Young refers to pre-analytical error, which arises when the results are abnormal because of the way the specimen was treated before the laboratory received it.²⁷ Forensic samples may be old, of low volume or have been kept in bad conditions prior to laboratory analysis. Specimens may also have been subjected to “burial in damp-earth, freeze-thaw action, baking and irradiation under the sun, contamination by animal deposits, bacterial or other microbial infestation and all manner of other treatments”.²⁸ Such pre-analytical treatment of a forensic sample may lead to less definitive results being obtained than those, which would be acquired from a “fresh” sample. In *R v Juric*²⁹ the Victorian Court of Appeal noted the difference between a pure and unadulterated sample that can give rise to statistical improbabilities running into the millions or even billions and a sample so old and adulterated that an expert is prevented from giving an opinion on the statistical probabilities. Therefore, contamination may impact appreciably on the reliability of DNA evidence. It is also questionable whether contaminated samples are of sufficient accuracy to be used as evidence implicating the accused at all. This will, in practice, depend on the extent to which the sample is degraded. Even if the match is of sufficient accuracy to be admitted, a match from a contaminated sample will always be of less probative value than a match from a ‘fresh sample’.

²⁵ Rt Hon Sir Thomas Eichelbaum and Professor Sir John Scott *Report on DNA Anomalies* 30 November 1999.

²⁶ See Judge Tompkins “Challenges to DNA in the Courtroom” Paper delivered at Interpol’s Third International DNA Users’ Conference in Lyon on 19-21 November 2003.

²⁷ Young “DNA Evidence – Beyond Reasonable Doubt?” Crim LR 264 at 265-266.

²⁸ *Ibid* at 266.

²⁹ Supreme Court of Victoria Court of Appeal 29 May 2002.

9.09 Fourthly, even where there is no error in handling the sample and there is indeed a match, it is possible that this is a chance match or an accidental match. A DNA profile consists of only a small section of an individual's DNA and so might not be unique. It is, theoretically at least, possible that two individuals other than identical twins could have the same sample.³⁰ It is more likely that such a "chance match" would occur among close relatives.³¹ The chance of such a coincidence significantly decreases as the number of loci examined along the DNA molecule increases. At present, ten loci are examined in creating a DNA profile. In respect of a profile calculated on the basis of ten loci, the probability that a randomly selected, unknown, unrelated person would have the same DNA profile as the suspect is stated in the courts to be 1 in a thousand million or 1 in a billion. The situation has been summed up as follows "[i]t is agreed that there is a chance that there are two individuals who share the same profile, no matter how remote that chance is, but as stated previously, no two unrelated individuals have ever been found to match at greater than six loci".³² So although it is extremely unlikely, it is possible for a chance match to occur. As stated by Kaye and Sensabaugh Jr "even if two samples have the same genotype, there is a chance that the forensic sample came – not from the defendant – but from another individual who has the same genotype". However, in the UK, no true chance matches entailing full SGM Plus™ profiles have been identified.³³ Presenting a match statistically to show the probability of the match being a 'chance match' is discussed in greater detail later in the chapter.³⁴

³⁰ As affirmed in Hageman, Prevett and Murray *DNA Handbook* (Butterworths Canada Ltd 2002) at 41.

³¹ For example see *R v Watters* English Court of Criminal Appeal Criminal Division 19 October 2000 and in this jurisdiction *Allen v DPP* Irish Court of Criminal Appeal 18 December 2003.

³² Dr Raymond's submission to the Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) at 26.

³³ See the Forensic Science Service *The National DNA Database Annual Report 2002-2003* at 15. Available at: <http://www.forensic.gov.uk/forensic/entry.htm>.

³⁴ See paragraphs 9.33-9.44.

9.10 Fifthly, a match could have resulted from tampering with the crime scene. This could arise if the actual offender, a police investigator or other person leaves the suspect's genetic sample at the crime scene. This is not as improbable as it seems given the ease with which such a substitution could take place. While it is very difficult to lift a fingerprint from one place and leave it in another place, transferring DNA evidence is a relatively easy task. It could involve the picking up of a cigarette butt with saliva on it or taking a hair from someone's coat and depositing it at a crime scene. Although the risk of tampering by police investigators could be minimised by proper procedures being in place to prevent it,³⁵ "only the blinkered, the foolish and those who are myopically pro police would discount the fabrication of evidence".³⁶ In any event, appropriate safeguards cannot alleviate the risk of a sample being planted by a person unconnected with the police force. At present, we know of no instance where such misconduct has led to the conviction of an innocent person. But the risk of such an eventuality cannot be ruled out and significantly decreases the value of DNA evidence in the absence of other evidence suggesting that the accused was at the crime scene. This risk of tampering also reinforces the importance of establishing an independent and secure repository for the DNA database.³⁷

9.11 Finally, the suspect could have been at the crime scene for a number of innocent reasons – including having come accidentally across the victim. Presence at a crime scene does not automatically establish criminal culpability. In many instances, the suspect will be a friend or relative of the victim and, in such cases, the probative value of a DNA match may be very limited as there are valid reasons why the suspect would have been at the location. As a result, it must be remembered that technology is not a 'quick-fix'. It is still necessary to have a properly resourced police force that will need to conduct traditional investigation and evidence gathering.

³⁵ Such procedures are discussed at paragraphs 8.53-8.60.

³⁶ The Public Defenders Submission to the Parliament of New South Wales Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No. 18 (February 2002) at 37.

³⁷ This is dealt with in paragraphs 8.04-8.20.

(2) ***Holding a DNA Evidential Hearing***

9.12 It is evident from this discussion that a DNA match, while probative, is not unassailable. This is particularly the case where a DNA match is obtained through a database and prior to this match, the accused was not a suspect in the crime. We therefore must consider whether a match of DNA obtained through a national database should be admissible in court. The unanimous view of the courts has been to hold DNA evidence in general to be admissible. This was accepted in Ireland in *The People (DPP) v Mark Lawlor*³⁸ and in *The People (DPP) v Horgan*.³⁹ However, DNA evidence will not be sufficiently reliable to be admitted into court in all cases. The circumstances in which a match will be held inadmissible due to its unreliability have not been spelt out in the Irish courts.

9.13 In the US, the first serious challenge to the admissibility of DNA evidence arose in *People v Castro*.⁴⁰ It was acknowledged in this case that DNA evidence will generally be admitted into court on the basis that it satisfies the *United States v Frye*⁴¹ test. It was accepted that pre-trial hearings must be held to determine whether the testing laboratory performed the accepted scientific techniques in analysing the forensic samples in the particular case. The New York Supreme Court in *People v Castro*⁴² proposed a comprehensive discovery regime concerning DNA testing whereby all the evidence concerning the testing, sampling, chain of custody etc would be admitted and considered in the pre-trial hearing. After a 12 week pre-trial admissibility hearing, the judge ruled that the results were so

³⁸ Central Criminal Court 2 December 1995. Criminal Court of Appeal 24 February 2001. See Maureen Smyth "DNA in the Dock" [1995] *Lab Link* Volume 2 Issue 6.

³⁹ *Irish Examiner* 25 June 2002.

⁴⁰ (1989) 545 NYS 2d 985 (New York Supreme Court).

⁴¹ *United States v Frye* (1923) 293 F 1013. This test states that novel scientific evidence will be admissible into court if it is sufficiently established to have gained general acceptance in the field in which it belongs.

⁴² (1989) 545 NYS 2d 985 (New York Supreme Court).

demonstrably unreliable as to be inadmissible in this case. It has been suggested that a similar test should be applied in the Irish context.⁴³

9.14 Pre-trial hearings are also held in other jurisdictions to decide on the admissibility of the DNA evidence in question. In *R v Doherty and Adams*⁴⁴ it was held that the risk of laboratory error, the method of DNA analysis used and the basis of subsequent statistical calculation should be examined before trial to decide if the evidence should be admitted. A similar approach is adopted in Australia in considering whether the evidence should be admitted into court. In *R v Tran*⁴⁵ DNA evidence was excluded as a result of dubious methodology, possible contamination or crossovers of tracks, incomplete bands on the autorad, controversial interpretation of faint results, contested statistical interpretation and the absence of an appropriate database. Holding an evidential hearing to decide whether the match is sufficiently reliable to be admitted would go a long way to rectifying the problems detailed above with respect to laboratory errors and sample contamination. It also avoids the problem of leaving conflicting expert testimony about the reliability of specific DNA testing methods as a factual matter for the jury to decide. This is problematic as it may lead to the jury “being overawed by the scientific garb in which the evidence is presented”⁴⁶ and therefore accepting the evidence even though it is unreliable.

9.15 The procedure for holding an evidential hearing or a trial within a trial in Ireland was laid down in *The State v Treanor*.⁴⁷ The trial before the jury is adjourned at the stage at which the evidence would normally be put before the jury. The jurors will withdraw while the trial within a trial is being held. In the case of an issue about a DNA match, the evidential hearing may be capable of being held at the beginning of the trial. This may be desirable as if the evidence is deemed inadmissible, the prosecution may not wish to

⁴³ Leahy “Genetic Profiling and the Reasonable Doubt” (1995) MLJI 66 at 66.

⁴⁴ (1997) 1 Cr App R 369 at 369-370.

⁴⁵ (1990) 50 A Crim R 233.

⁴⁶ *R v Humphrey* [1999] SASC 67.

⁴⁷ [1924] 2 IR 193.

proceed with the case.⁴⁸ Unfortunately, this will not always be possible as the evidential background to the issue to be tried in the absence of the jury can only be established by the evidence given in court before the jury. However, where it is just and convenient, this evidential hearing should be heard at the beginning of the trial. Such a procedure would ensure that a match would only be introduced into court in the event of its being reasonably reliable. It would avoid the problem of juries being presented with prejudicial evidence which should not have been admitted into court. These concerns are of particular importance in respect of a match made by virtue of a database. In such an instance, the match may be the crucial evidence in the case so it must be ensured that it is sufficiently reliable before it is introduced into court. The evidence will be deemed sufficiently reliable if it can safely be used by the jury to reach a conclusion as to the guilt or innocence of the accused.⁴⁹

9.16 It is also important to ensure that a written record of this evidential hearing is created and published. In the absence of a written record, valuable jurisprudence in respect of DNA evidence would be of no assistance to future judges dealing with similar DNA evidence difficulties. The absence of a record of it could result in a lack of consistency and perhaps anomalies.

9.17 *The Commission recommends that if an issue as to the admissibility of DNA evidence is likely to arise or arises in a case, then consideration should be given to dealing with such an issue at a preliminary hearing or at an early hearing if this is just and convenient in the particular circumstances.*

(3) Corroboration

9.18 It will now be considered whether DNA evidence is sufficient on its own to warrant a conviction. Certain types of evidence are seen as particularly weak or suspect and so additional supportive or corroborative evidence is required. In these situations, two solutions can be adopted. Firstly, corroborative evidence could be required by law. In such a case, corroborative evidence must actually be present in order for the jury to convict on certain

⁴⁸ It was suggested in *The People (DPP) v McCann* [1998] 4 IR 397 that evidential hearings should usually be held at the beginning of the trial.

⁴⁹ See *The People (DPP) v Lawlor* Court of Criminal Appeal 19 February 2001 on this.

evidence.⁵⁰ Secondly, a corroboration warning may be required to be given by the judge on summing up. In such a case, the jury are advised not to convict in the absence of corroboration but if they are satisfied of the accused's guilt beyond reasonable doubt, they can convict even in the absence of corroborative evidence. In some cases such warnings are mandatory⁵¹ and in others they are discretionary.⁵²

9.19 In *The People (DPP) v Howe*⁵³ Butler J, in withdrawing a case from the jury, did not invoke any express ruling that DNA evidence should not be used on its own to ground a conviction. It was accepted by the forensic scientist who gave evidence in this case that the head of forensic science in the UK had stated that an accused should never be convicted on DNA evidence alone. However, while Butler J accepted that he was entitled to express this opinion he stated that "what amounts to proper evidence on which to base a conviction is not a matter for him". Thus Butler J appeared to leave open the question as to whether DNA evidence alone would ever be sufficient to ground a conviction. But in *Howe* itself, he based his direction on two evidential gaps. Firstly, in Butler J's view, the forensic scientist in this case had no qualifications in statistics and therefore in the determination of the probability of identical DNA coming from another person.⁵⁴ Secondly, the prosecution had not disproved the possibility that the accused had a brother, who could have had similar DNA.

9.20 It is evident from the discussion above that a 'match' does not always conclusively establish the guilt of the accused.⁵⁵ The match, for example, could have arisen as a result of laboratory error or there could be an innocent explanation for the presence of the

⁵⁰ This is the situation in relation to a charge for perjury by virtue of *R v Boulter* (1852) 5 Cox C C 543 and a charge for procuration of girls for prostitution under section 3 of the *Criminal Law Amendment Act 1885*.

⁵¹ See for example section 10 of the *Criminal Procedure Act 1993*, which requires a warning where confession evidence is relied on.

⁵² See for example section 28(1) of the *Criminal Evidence Act 1992*, which allows for a discretionary warning in respect of the evidence of children.

⁵³ *Irish Times* 15 October 2003, Central Criminal Court (Butler J).

⁵⁴ See paragraphs 9.33-9.36 and 9.42 for more detail on this particular ground.

⁵⁵ See paragraphs 9.05-9.10.

crime stain. These concerns are particularly important in respect of a match obtained through a national database. Consequently, when it is sought to rely on DNA evidence alone, independent supporting evidence or a warning as to the lack of such supporting evidence should be required. We will now examine whether independent material supporting evidence should be necessary in every case where DNA evidence is in issue or whether a warning as to the lack of supporting evidence is sufficient in this regard.

9.21 While supporting evidence of a DNA match has been perceived as desirable in the UK, no court in that jurisdiction has yet actually held that there should be a mandatory requirement of corroboration in all cases where DNA evidence is sought to be relied on without any independent material evidence. Instead, a more flexible approach has been adopted in the UK. Each case is considered on an individual basis in order to decide if corroboration is necessary in the particular case. This is evident from the case of *R v Watters*.⁵⁶ This was a case where the prosecution sought to rely almost solely on DNA evidence. The Court of Appeal concluded in this case that the DNA evidence alone was not enough to ground a conviction in this particular case. This decision however was clearly grounded in the facts of the case. This is evident from the following:

“Every case of this kind has to be judged on its own facts. There is no rule that enables the court to say, when a figure reaches a certain level it is safe to leave it to the jury, but below that it is not. But in every case one has to put the DNA evidence in the context of the rest of the evidence and decide whether taken as a whole it does amount to a prima facie case”.

In this case, it was the possibility that the DNA originated from the accused's brothers that led the court to refuse to admit the DNA evidence in the absence of material independent supporting evidence.

9.22 It should be observed that there is no requirement for additional evidence in the cases of other less reliable forms of evidence including identification evidence⁵⁷ and accomplice

⁵⁶ *R v Watters* Court of Appeal 19 October 2000.

⁵⁷ See *People v Casey* (No 2) [1963] IR 33 and *People v Fagan* (1972) 1 Frewen 375 concerning this.

evidence.⁵⁸ As DNA evidence is of greater probative value than this evidence in that it is based on objective scientific evidence rather than fallible human recollection or evidence tainted by the animosity of a former friend, it should not be subjected to more onerous admission requirements than the other more traditional forms of evidence.

9.23 While it is accepted that in a large volume of cases, DNA evidence alone will not be enough to ground a conviction, it is evident that a DNA match could in certain instances prove the guilt of the defendant beyond reasonable doubt. Lord Denning in *Millar v Minister for Pensions*⁵⁹ advanced a definition of reasonable doubt. He stated:

“It need not reach certainty but it must carry a high degree of probability. Proof beyond a reasonable doubt does not mean proof beyond a shadow of doubt. The law would fail to protect the community if it admitted fanciful possibilities to deflect the course of justice. If the evidence is so strong against a man as to leave only a remote possibility in his favour, which can be dismissed with the sentence ‘of course it is possible but not in the least probable’ the case is proved beyond reasonable doubt, but nothing short of that will suffice”.

9.24 It was accepted by the trial judge in *The People (DPP) v Cotter*⁶⁰ that proof beyond reasonable doubt did not embrace moral certainty but something short of mathematical or moral certainty. This was held to be the correct direction. On the basis of this direction, it is apparent that a DNA match of an unadulterated sample, where there is no innocent explanation for the match, could in certain circumstances prove the guilt of the defendant beyond reasonable doubt. An example of such an instance could be where a rape victim is found dead covered with the blood of the accused and with traces of his semen in her vagina. The DNA evidential hearing will provide an adequate means of ensuring that the evidence is sufficiently reliable before being introduced. Whether corroboration is necessary

⁵⁸ For examples, see cases such as *Attorney General v Linehan* [1929] IR 19 and *People (Attorney General) v Carney* [1955] IR 324 concerning this.

⁵⁹ [1947] 2 All ER 372.

⁶⁰ Court of Criminal Appeal 28 June 1999.

should be left to the judge to decide on the basis of the facts in each individual case.

9.25 However, due to the factors that can impact on the probative value of the match and the perceived infallibility of DNA evidence, it is suggested that a warning should be given in all cases in which a verdict depends solely on DNA evidence of the dangers of convicting on DNA evidence alone. There are however problems with alerting the jury to the absence specifically of corroboration in the case. Corroborative evidence has a very technical meaning and does not embrace all evidence which tends to incriminate the accused. In *R v Baskerville* it was defined as “independent testimony which implicates the accused by tending to connect him with the commission of the crime which confirms in some material particular not only the fact that the crime has been committed but also that A committed it”.⁶¹ A review of the law on corroboration is beyond the scope of this Paper but given that there has been widespread criticism of the corroboration warning requirement,⁶² it is suggested that it should not be extended to this area. Indeed the view of one commentator in Ireland is that the requirement of corroboration or a corroboration warning should not be extended to any new areas.⁶³ In respect of DNA evidence specifically, even weak evidence may become highly probative when taken in conjunction with a DNA match. For example, evidence which shows that an accused was present in the general location of a crime is not corroborative evidence but clearly can be relevant in showing that the accused was in the vicinity, particularly in the instance of strong DNA evidence. Consequently, the additional evidence which would render any warning unnecessary should not be required to fulfil any technical meaning. It should simply be evidence which tends to show that the

⁶¹ *R v Baskerville* [1916] 2 KB 658.

⁶² For example, the Law Commission in *Corroboration of Evidence in Criminal Trials* Working Paper no 115 has recommended its abolition. It has criticised its complexity for judges and juries alike. Birch in “Corroboration in Criminal Trials: A review of the Proposals of the Law Commission’s Working Paper” [1990] Crim LR 667 also criticises the complexity of the corroboration requirement. The requirement has been criticised in Ireland; see McGrath “Two Steps Forward, One Step Back: The Corroboration Warning in Sexual Cases” (1999) 9 ICLJ 22.

⁶³ McGrath “Two Steps Forward, One Step Back: The Corroboration Warning in Sexual Cases” (1999) 9 ICLJ 22 at 44.

accused committed the offence. The jury should not be warned of the dangers of convicting in the absence of corroborative evidence. Rather, they should be warned of the danger of convicting in the absence of any evidence other than the DNA evidence. Such a warning should be mandatory.

9.26 Finally, it must be reiterated that while the Commission does not recommend that there should be a mandatory requirement for additional evidence in all DNA evidence cases, there will be cases where such supporting evidence will be necessary. In these cases, the judge should exercise his or her discretion and withdraw the case from the jury. In all other cases, a warning should be given as to the dangers of convicting on DNA evidence alone.

9.27 *The Commission does not recommend that there should be a prohibition on convicting on DNA evidence alone. Rather, it recommends that in all cases where it is sought to rely on DNA evidence alone, the jury should be warned of the dangers of convicting on this evidence in the absence of other supporting evidence. However, they should be advised that they may convict on this evidence if they are satisfied beyond reasonable doubt of the defendant's guilt.*

(4) *Illegally and Unconstitutionally Obtained Evidence*

9.28 A related question is whether a match obtained through a profile which is acquired in breach of the rules, which govern how it is to be obtained, and is placed on the national database should be admissible in court. The situation would in essence depend on whether the breach of the rules is unconstitutional or illegal. If the evidence was obtained as a result of a deliberate and conscious violation of the suspect's privacy or bodily integrity rights, any evidence obtained from the breach would automatically be excluded, in the absence of extraordinary excusing circumstances. This follows from the principle set down in *The People (DPP) v Kenny*.⁶⁴ However if the evidence was illegally as opposed to unconstitutionally obtained, the evidence would not be automatically inadmissible. In such an instance the judge has discretion in deciding whether to admit the evidence into court as is evident from the

⁶⁴ [1990] ILRM 569, [1990] IR 110. See paragraph 3.21 for more discussion on this case.

decisions of the Supreme Court in *The People (DPP) v O'Brien*⁶⁵ and *The People (DPP) v Mahon*.⁶⁶ The *Regulations with Regard to Treatment of Persons in Garda Custody* (“*Custody Regulations*”)⁶⁷ introduced under the *Criminal Justice Act 1984* are also instructive in this regard. Section 7(3) of the *Criminal Justice Act 1984* provides that if evidence is obtained in breach of the *Custody Regulations*, this breach will not of itself make the evidence inadmissible. This is an alternative way of dealing with the problem of illegally obtained evidence.

9.29 The admissibility of illegally obtained DNA evidence has been examined in the UK and New Zealand. Section 78 of the UK *Police and Criminal Evidence Act 1978* provides that evidence may be excluded if “having regard to all the circumstances, including the circumstances in which the evidence was obtained, the admission of the evidence would have such an adverse effect on the fairness of the proceedings that the court ought not to admit it”. In *Attorney General’s Reference (No. 3 of 1999)*⁶⁸ the House of Lords examined whether a match, obtained through a profile placed on a database which should have been deleted and was not in fact deleted, should be admissible. In this case, a match was obtained from a sample which was required to be destroyed under section 64(1) of the *Police and Criminal Evidence Act 1984*. Section 68(3B)(b) prohibited the use of information, derived from a sample required to have been destroyed under section 64(1), for the purposes of the investigation of any offence. It was held by the House of Lords, in reading section 64(3B)(1) in the light of section 78, that the judge had a discretion to admit the unlawfully obtained evidence and that this would not amount to an interference with the defendant’s rights under Article 6 or Article 8 of the ECHR. In any event, the ECtHR has held in *Khan v United Kingdom*⁶⁹ that in assessing whether a particular piece of evidence should be admissible, the court should look at the proceedings as a whole to determine if they are fair. This case

⁶⁵ [1965] IR 142.

⁶⁶ [1986] IR 393.

⁶⁷ *Regulations with Regard to the Treatment of Persons in Garda Custody* SI 119/1987.

⁶⁸ [2001] 2 AC 91.

⁶⁹ (2001) 31 EHRR 45.

concerned unlawful surveillance by the police. This was held to be a breach of Article 8 but this breach did not affect the fairness of the trial. Consequently, the evidence obtained was admissible in court.

9.30 It was affirmed recently in *R v Shaheed*⁷⁰ that a similar balancing test applies in New Zealand in respect of DNA evidence obtained illegally. The court would have to decide, by balancing the relevant factors, whether exclusion of the evidence was in the circumstances a proportionate response to the breach of the right that had occurred. In conducting the balancing test, appropriate weight should be given to the fact that there was a breach of the individual's rights. Other factors such as the value of the right implicated, the manner in which this right was infringed and the need for a credible system of justice to be in existence should also be considered. In this case, the accused was compelled to undergo a blood test. There was a direct connection between the breach and the obtaining of the sample. The accused was only connected with the crime as a result of the unconstitutional taking of the sample. The court therefore decided that the evidence should be excluded. *R v Shaheed*⁷¹ shows the relevant factors, which the court must take into account, in deciding whether DNA evidence should be admissible in cases where it has been obtained illegally.

9.31 *The Commission recommends that, as at present, where DNA evidence is obtained illegally, but not in breach of a person's constitutional rights, the trial judge should be empowered to determine, as a matter of discretion, whether to admit it in evidence.*

B Presentation of the Evidence at Trial

9.32 As is evident from the discussion earlier⁷² regarding the perceived infallibility of DNA evidence, measures must be taken to prevent the whole process becoming "a black box into which scientific evidence is placed at one end and the verdict in a criminal case is produced at the other".⁷³ A related problem with DNA profiling is its inherent complexity. This is seen in the scientific

⁷⁰ [2002] 2 NZLR 377.

⁷¹ *Ibid.*

⁷² See paragraph 9.03.

⁷³ Andrew Hall (1990) *New Law Journal* 203.

nature of the evidence and also in the need for a statistical presentation of the significance of a match.⁷⁴ As observed by Justice Action in their submission to the NSW Review “[e]ven if forensic evidence is presented accurately, honestly and completely it does not mean that judges and juries will understand it”.⁷⁵ Due to the adversarial nature of the court room, there may be two groups of experts presenting conflicting evidence, which can lead to jury confusion and misunderstanding.⁷⁶ In addition to this, forensic scientists are required to present their DNA evidence in a particular form and are not entitled to express an opinion on the likelihood of the defendant being responsible for the crime in question.⁷⁷ This can also lead to jury confusion. It is evident therefore that guidance must be provided on the manner in which such evidence should be presented in court to avoid this jury confusion.

(1) Presentation of the Statistical Evidence

9.33 In the event of the evidence being admitted into court, there must be an examination of the means in which its statistical significance will be presented. While a detailed account of the methods used for calculating the frequency of the profiles and the significance of the matches falls outside the scope of this Paper, a brief mention of this area is necessary. A failure to present the DNA match obtained from the DNA database in a statistically accurate way would infringe the suspect’s right to a fair trial under Article 38.1 of the Constitution. The significance of a match is usually indicated by the calculation of a ‘match probability’. However, it must be emphasised that there is no one way of assigning a statistical probability to a case. There are a number of ways in which such a calculation could be carried out.⁷⁸ As observed by one commentator

⁷⁴ This will be discussed later in paragraphs 9.33-9.40.

⁷⁵ Parliament of New South Wales Legislative Standing Committee on Law and Justice *Review of the Crimes (Forensic Procedures) Act 2000* Report No 18 (February 2002) at 64.

⁷⁶ See Saul “Genetic Policing: Forensic DNA Testing in New South Wales”. Available at: http://www.geocities.com/ben_saul/DNATestingNSW.htm.

⁷⁷ See *R v Doheny and Adams* (1997) 1 Cr App R 369.

⁷⁸ As illustrated by Evett, Foreham, Jackson and Lambert in “DNA Profiling: A Discussion of Issues Relating to the Reporting of Very Small Match Probabilities” (2000) Crim LR 346 at 345-355.

“the apparent certainty of the statistical match evidence that appears so impressive is very clearly not so certain as it looks”.⁷⁹

9.34 There are essentially two ways in which scientists can present their evidence. Firstly, they can present it as a ‘match probability’. The match probability is the probability that a randomly selected, unknown, unrelated person would have the same DNA profile as the suspect.⁸⁰ The smaller the probability or the less the possibility of an adventitious match, the greater the likelihood that the two samples came from the same person. The forensic scientist requires some knowledge of the frequency within which the alleles occur within a population, and so population databases are used for this calculation. In this jurisdiction, the DNA Population Database most commonly used in criminal cases is that of the Forensic Science Laboratory. The present system involves calculating a match probability for each of the ten loci that make up a given profile. Then the match probabilities for the individual loci are multiplied together. For a DNA profile of ten loci, the combination of the individual estimates of the likelihood of each allele occurring in a population will result in a very rare event indeed. In respect of a match calculated on the basis of ten loci, the probability that a randomly selected, unknown, unrelated person would have the same DNA profile as the suspect is 1 in a billion. In reality, the probabilities that arise in this instance are in the order of one in billions but both the UK Forensic Science Service and the Irish Forensic Science Laboratory have adopted a policy of not calculating case specific probabilities. Instead they use conservative estimates of the figures involved. The Irish and UK laboratories quote the probabilities in court as being in the order of one in a thousand million or one in a billion.⁸¹

⁷⁹ Goode “Some Observations on Evidence of DNA Frequency” (2002) 23 *Adelaide Law Review* 45 at 67.

⁸⁰ National Academy of Sciences *Evaluation of Forensic Evidence* Washington DC 1996.

⁸¹ See Gill, Foreman, Buckleton, Triggs and Allen “A comparison of adjustment methods to test the robustness of an STR DNA database comprised of 24 European populations” *Forensic Science International* 131 (2003) 184-186 for a discussion on the methods of adjustment used in calculating match probabilities to understate the weight of the DNA evidence against the defendant. It is interesting to note in this respect that

9.35 In calculating any match probabilities, the effects of relatedness should be factored in. There is a far greater probability of a chance match occurring in the event of the parties being relatives than if they are strangers.⁸² For example in respect of a match calculated on the basis of ten loci, a match probability of 1 in a billion may translate to 1 in 10000 in respect of a pair of brothers.⁸³ The failure to factor in the effects of relatedness when presenting the statistical evidence to the jury recently led the Court of Criminal Appeal in *Allen v DPP*⁸⁴ to order a retrial. The forensic scientist in this case observed that there was a greater likelihood of finding genetic similarities in close blood relatives than in unrelated people. However, the failure to adduce evidence to specify the statistics concerning the probability of a chance match occurring, in the event of the two people being brothers, resulted in the Court of Criminal Appeal ordering a retrial.

9.36 The likelihood ratio is an alternative means of evaluating the prospect of a chance match. This involves conducting a measure of the strength of the evidence regarding the hypothesis that the two profiles came from the same source. Here we find that the profiles of the person contributing the evidence sample and the suspect are both x. Two hypotheses are considered: (1) the source of the evidence and the suspect are the same person and (2) the source of the evidence is a randomly selected person unrelated to the suspect. The likelihood ratio is the probability under hypothesis (1) that the suspect profile and the evidence-sample profile will both be x, divided by the corresponding probability under hypothesis (2).⁸⁵ This approach is used in Ireland in cases where the DNA profile is mixed or the defence specifically requests the use of this method.

Ireland uses the most conservative estimates in Europe in calculating match probabilities.

⁸² Balding and Donnelly "How Convincing is DNA Evidence?" *Nature* Vol 368 24 March 1994 at 286.

⁸³ John Buckleton *The Interpretation of Scientific Evidence* Paper given at DNA Prosecuting under the Microscope, International Conference, Adelaide, 9-11 September 2001.

⁸⁴ Court of Criminal Appeal 18 December 2003.

⁸⁵ As described by the National Academy of Sciences *Evaluation of Forensic Evidence* Washington DC 1996.

(2) ***The “Prosecutor’s Fallacy”***

9.37 One error that is made in presenting evidence is known as the ‘prosecutor’s fallacy’. This error could be made by the forensic scientist in presenting the evidence. Alternatively, it could be made by counsel or by the judge in summing up the evidence. Or it could be made by the jury in applying the evidence even though the evidence has in fact been presented and summed up correctly. Two difficult questions can be asked concerning evidence of a match between a defendant’s profile and the profile obtained from a crime scene. Firstly, what is the probability that the defendant’s DNA profile matches the crime scene profile, given that he is innocent? Secondly, what is the probability that the defendant is innocent, given that his or her DNA profile matches the crime scene profile? The first question assumes the innocence of the defendant and asks about the chance of getting such a match; the second assumes the defendant’s profile matches and asks about guilt or innocence. The ‘prosecutor’s fallacy’ involves inadvertently giving the answer to the first question as the answer to the second.⁸⁶ Expressed in another way, “the ‘prosecutor’s fallacy’ is that the statistics of the match necessarily translate into the equivalent chance of the accused being guilty.”⁸⁷

9.38 This mistake arose firstly in *People v Collins*.⁸⁸ In this case the prosecutor obtained a robbery conviction against a couple by equating the probability that a random couple would possess a series of observed characteristics with the probability that the accused couple did not commit the robbery. This is a classic example of the prosecutor’s fallacy. Counsel and judges must be made aware of how to approach the interpretation of the statistical evidence so as to avoid this error. Also, when DNA evidence involving probabilities is presented, it must be followed by an explicit warning against misinterpretation. A more recent example of such a mistake occurred in *Pringle v The Queen*.⁸⁹ In this case, the Privy Council accepted that it was in the trial judge’s “province of her expertise to say what

⁸⁶ D Balding and P Donnelly “The Prosecutor’s Fallacy and DNA Evidence” (1994) *Crim LR* 711 at 713.

⁸⁷ Matthew Goode “Some Observations on Evidence of DNA Frequency” (2002) 23 *Adelaide Law Review* 45 at 50.

⁸⁸ (1968) 68 Cal 2d 319, 66 Cal Rptr 497, 438 P 2d 33.

⁸⁹ *Pringle v The Queen* Privy Council 27th January 2003.

the statistical likelihood was of the same sections or bands of DNA being found in the male fraction of the vaginal swab as was found in the appellant's blood sample. But it was not for her to express an opinion as to the probability that it was *his* spermatozoa that were found in the deceased's vagina". This is an example of how the 'prosecutor's fallacy' could arise in practice. Consequently, in order to avoid the prosecutor's fallacy, the judge should highlight to the jury that the match probability expressed by the forensic scientist is the probability that a randomly selected, unknown, unrelated person would have the same DNA profile as the suspect rather than the probability that the accused did not commit the crime.

(3) Bayes' Theorem

9.39 Controversy has also arisen over whether Bayes' Theorem should be used in formulating probabilities. This is a standard mathematical formula which essentially explains how to assess information, such as evidence, within the laws of probability. Applying Bayes' Theorem in this context would involve multiplying the likelihood ratio by the prior odds (their assessment of the probability of the defendant's guilt before hearing the DNA evidence). This would then produce the posterior odds, the calculation that the defendant is guilty given the DNA evidence and the other evidence presented at trial.⁹⁰ However rather than subjecting the jury to a very complex analysis of statistics, it could be more appropriate simply to inform the jury that the DNA match is not evidence of the defendant's guilt and that they must take all the evidence into account in deciding whether the guilt of the defendant has been proved beyond reasonable doubt. The use of this theorem was initially accepted in *R v Adams*⁹¹ in the UK but its use was ultimately rejected by the Court of Appeal. This was on the basis that the use of Bayes Theorem would plunge the jury into inappropriate and unnecessary realms of theory and complexity deflecting them from their proper task.

(4) Case Law

9.40 The solution adopted in the UK concerning the manner in which statistical evidence should be presented was set down in *R v*

⁹⁰ Redmanye "Doubts and Burdens: DNA Evidence, Probability and the Courts" [1995] Crim LR 464 at 467.

⁹¹ (1997) 1 Cr App R 369.

Doheny and Adams. 13 guidelines were set out by the Court of Appeal regarding the presentation of a DNA match.⁹² These

⁹² *Ibid* at 369-370. These guidelines are as follows:

1. The scientist should adduce the evidence of the DNA comparisons between the crime stain and the defendant's sample together with his calculation of the random occurrence ratio.
2. Whenever DNA evidence is to be adduced the Crown should serve on the defence details as to how the calculations are to be carried out which are sufficient to enable the defence to scrutinise the basis of the calculations.
3. The Forensic Science Service should make available to the defence, if requested, the databases upon which the calculations have been made.
4. Any issue of expert evidence should be identified and, if possible, resolved before trial. This area should be explored by the court in a pre-trial review.
5. In giving evidence the expert will explain to the jury the nature of the matching characteristics between the DNA in the crime sample and the DNA in the defendant's blood sample.
6. The expert will, on the basis of the empirical statistical data, give the jury the random occurrence ratio – the frequency with which the matching characteristics are likely to be found in the population at large.
7. Provided that the expert has the necessary data it may then be necessary for him to indicate how many people with the matching characteristics are to be found in the United Kingdom or a more limited relevant sub-group, for instance, the Caucasian, sexually active males in the Manchester area.
8. It is then for the jury to decide, having regard to all the relevant evidence, whether they are sure that it was the defendant who left the crime stain or whether it was possible it was left by someone else with the same DNA characteristics.
9. The expert should not be asked to give his opinion on the likelihood that it was the defendant who left the crime stain or whether it was possible it was left by someone else with the same matching DNA characteristics.
10. It is inappropriate for an expert to expound a statistical approach to evaluating the likelihood that the defendant left the crime stain, since unnecessary theory and complexity deflects the jury from their proper task.
11. In the summing up careful directions are required in respect of any issues of expert evidence and guidance should be given to avoid confusion caused by areas of expert evidence where no real issue exists.
12. The judge should explain to the jury the relevance of the random occurrence ratio in arriving at their verdict and draw attention to the

guidelines detail the manner in which the significance of a match should be statistically presented. The complexities of the Bayes Theorem are avoided and the guidelines also ensure that the ‘prosecutor’s fallacy’ is consigned to legal history. The match probability is calculated. A relative frequency statement is used as the means of presenting the significance of the match. This entails providing information about the frequency with which the profile is expected to appear within the population. An example of such a statement is “Fifty people in the UK are expected to have this DNA profile”. Alternatively a related statement could be made namely that “it is expected that one person in a million has this DNA profile”. The latter statement is one of relative frequency. However there are problems with this approach. DNA profiling now involves calculating a profile on the basis of ten loci. In *Doheny and Adams*, a profile was calculated on the basis of six loci only. Evett has commented that probabilities of the order of one in trillions, which arise from calculations based on ten locus profiles, require assumptions that cannot be assessed by statistical experiment in the light of the size of the existing databases. These numbers may be correct in a mathematical sense but they are without any real meaning in the context of criminal proceedings.⁹³ For this reason, the Irish Forensic Science Laboratory and the UK Forensic Science Service have adopted a policy of not calculating case-specific match probabilities for full profiles. The relative frequency statement did constitute a simpler method of explaining probabilities to jurors but problems now arise with this approach under the new SGM Plus

extraneous evidence which provides the context which gives the ratio its significance, and to that which conflicts with the conclusion that the defendant was responsible for the crime stain.

13. In relation to the random occurrence ratio, a direction along the following lines may be appropriate, tailored to the facts of the particular case. “[m]embers of the jury, if you accept the scientific evidence adduced by the Crown, this indicates that there are probably four or five white males in the United Kingdom from whom the semen could have come. The defendant is one of them. If that is the position, the decision you have to reach, on all the evidence is whether you are sure that it is the defendant who left the stain or whether it was possible that it was one of that other small group of men who share the same DNA characteristics”.

⁹³ Evett and others “DNA profiling: A Discussion of Issues Relating to the Reporting of Very Small Match Probabilities” (2000) *Crim LR* 341 at 347-348.

system. If the court accepts that the relevant population to consider is one of 10 million males, unrelated to the defendant, then the match probability of one in a billion illustrates that, apart from the defendant, the expected number of males that would have the same profile as the crime stain is 0.01. Naturally, a jury would find such a statement excessively difficult to comprehend so in practice a frequency statement is no longer used in respect of profiles calculated on the basis of ten loci.⁹⁴

9.41 There are other problems with the guidelines adopted in *R v Doheny and Adams*.⁹⁵ This form of presentation does not make any provision for the effects of relatedness.⁹⁶ Nor does it deal with the question as to what population database should be used for calculating the probabilities. It also does not detail whether account should be taken of the fact that the match came from a database in calculating the probabilities.⁹⁷ As a result, we do not intend to recommend the adoption of these guidelines.

9.42 It is not proposed to make any recommendation as to the statistics that should be used in presenting a DNA match. Such a recommendation would fall outside the Commission's area of expertise. However, we accept that an expert group should be set up to examine the manner in which the statistics should be presented to the jury. The Expert Group should discuss how the evidence should be presented from a scientifically sound basis and also to conform to the standards required in a criminal trial. The importance of formulating guidelines on the statistics concerning DNA is illustrated by the recent decision of Butler J in *The People (DPP) v Howe*.⁹⁸ One of the grounds on which the judge directed the jury to acquit was that the forensic scientist had no qualification in statistics. The judge

⁹⁴ See Evett and others "DNA profiling: A Discussion of Issues Relating to the Reporting of Very Small Match Probabilities" (2000) Crim LR 341at 349.

⁹⁵ (1997) 1 Cr App R 369.

⁹⁶ See paragraph 9.35.

⁹⁷ See Balding and Donnelly "Evaluating DNA Profile Evidence When the Suspect is Identified Through a Database Search" *Journal of Forensic Sciences* Vol 41 No 4 July 1996 for a useful discussion on this issue and the recommendations made in relation to it by the US National Research Council in their report in July 1996.

⁹⁸ *Irish Times* 15 October 2003, Central Criminal Court (Butler J).

suggested that he was not properly qualified to determine the probability of DNA evidence coming from another person. A contrary decision on this matter has been reached in subsequent cases, where it has been accepted that a forensic scientist has sufficient knowledge of statistics to present the significance of a DNA match accurately.⁹⁹ The latter position has also been adopted in other jurisdictions, where it has been accepted that evidence from a statistical expert is not necessary for DNA evidence to be admitted.¹⁰⁰ The decision in *Howe* illustrates the inconsistencies that arise in the absence of guidance on the statistical presentation of a DNA match.

9.43 Whatever statistical presentation of the evidence is decided on, the guidelines set out by the British Columbia Court of Appeal in *Latcha v R*¹⁰¹ would be useful. These guidelines provide that it must be made sufficiently clear to the jury that the estimates are not intended to be precise, that they are the products of mathematical and scientific theory, not concrete facts, that they do not purport to define the likelihood of guilt, that they should only be used to form a notion of the rarity of the genetic profile of the accused and most importantly, that the DNA evidence must be considered along with all the evidence in the case relating to the issue of identification. These guidelines explain the situation in respect of the significance of a match in a concise and understandable way and ensure the jury are not blinded by the statistics involved. They also import the useful aspects of the *R v Doheny and Adams*¹⁰² decision – namely the need to consider the statistical evidence in the light of all the evidence in the case.

9.44 *The Commission recommends that following consultation with an expert group on the statistical presentation of a DNA match, guidance should be provided in the form of Rules of Court or a Code of Practice on the presentation of a DNA match statistically.*

⁹⁹ See for example *The People (DPP) v Downey* Central Criminal Court 12 March 2004 and *The People (DPP) v Michael Murphy* Central Criminal Court January 2004.

¹⁰⁰ See *State v Colbert* (1995) 256 Kan 896 and Judge Tompkins “Challenges to DNA in the Courtroom” Paper delivered at Interpol’s Third International DNA Users’ Conference in Lyon on 19-21 November 2003 at 15.

¹⁰¹ (1998) 104 A Crim R 390.

¹⁰² (1997) 1 Cr App Rep 369.

Whatever guidelines on the statistical presentation of the significance of a match are decided on, the judge in summing up the evidence should alert the jury to the fact that the estimates are not intended to be precise, that they are the products of mathematical and scientific theory, that they do not purport to define the likelihood of guilt and that the statistical evidence must be considered along with all the evidence in the case.

(5) Judicial Warning

9.45 It is evident from this that presenting the significance of a DNA match in statistical form is an extremely complicated procedure. Consequently, it is likely that the jury may misunderstand the evidence irrespective of the manner in which it is presented. The jury could also fail to understand the implications of a DNA match and there is, as a result, often a need to improve their understanding of the DNA evidence. While defence counsel have the opportunity to test the veracity of the DNA evidence through cross-examination, the jury may fail to understand the evidence presented to them or to consider the DNA match in the light of all the other evidence in the case.¹⁰³

9.46 There are a number of ways in which jury understanding of the probative value of DNA evidence can be assisted. Firstly, they could be provided with a simple booklet explaining DNA evidence generally. Secondly, a standard educational video explaining the value of DNA evidence could be shown to them before the trial. Finally, the trial judge could be required to give a direction at the end of the trial on the probative value of the DNA evidence. This could be a similar warning to that given in respect of visual identification evidence.¹⁰⁴ The Commission accepts that there are merits in requiring a basic standard direction in all cases in which a DNA match is involved, subject to adjustments to cover the actual facts and issues in the case. Such a warning would assist the jury in weighing the complex evidence they are presented with and ensure that they do not reach any false conclusions.

¹⁰³ These concerns were expressed by the Australian Law Reform Commission and the Australian Health Ethics Committee in *Report—Essentially Yours: The Protection of Human Genetic Information in Australia* (ALRC 96, 2003) at paragraph 44.46.

¹⁰⁴ As set out in *People (Attorney General) v Casey* (no 2) [1968] IR 33.

9.47 However, we also accept the concerns of the South Australian Court of Criminal Appeal in *R v Krager*,¹⁰⁵ which held that there should be no requirement for a general warning to be given in all cases. While there could be particular circumstances which call for a special warning, this would depend on the facts of the case. It was accepted that it was undesirable to impose an obligation on trial judges to give a warning to the jury except where such a warning was necessary. A standard warning would also fetter the trial judge's discretion unduly and hamper adjusting the warning to the facts of the case. This could result in a breach of the defendant's right to a fair trial. The court also noted that including a standard warning had the effect of adding further complexity to the case. Cases can be envisaged where the probative value of the DNA match has been explained adequately to the jury during the trial and requiring a warning could in this instance confuse rather than enlighten them. The Commission agrees with the decision in *R v Krager* in this regard.

9.48 While we believe that in most cases a warning will be required to assist the jury in weighing up the value of the DNA evidence, we do not seek to impose a general obligation on the trial judge to give such a warning. We proffer two exceptions to this recommendation. Firstly, the trial judge should be required to give guidance on the statistical presentation of a DNA match due to the inherent complexities of this area. Secondly, where the prosecution seek to rely on DNA evidence alone, the dangers of convicting on this evidence solely should be explained to the jury. In all other circumstances, the merits of giving a warning and the form of any such warning should be left to the discretion of the judge.

9.49 However, it is useful at this point to outline some of the issues on which the judge could consider informing the jury if he deemed it desirable in the particular case in hand. In summing up, the judge could give a direction as to the probative value of the DNA match. The contents of this direction could highlight to the jury that DNA evidence is not infallible and should be approached with caution. It could explain that a match does not conclusively prove the guilt of the accused. It could also outline the problems that can arise with a DNA match. These difficulties include the risk of laboratory error, coincidental or chance matches and an innocent explanation

¹⁰⁵ South Australian Court of Criminal Appeal 30 August 2002.

being present for the match. The judge should be wary about informing the jury that the match arose as a result of a speculative search on the database, unless the defence mentions this in the first instance, as this is potentially prejudicial. The judge could also advise the jury to consider the DNA evidence in the context of all the other evidence in the case. In addition, where there are additional circumstances which may impact on the probative value of the DNA match, these circumstances should also be included in any warning. Careful directions could be given in respect of the expert evidence that arises in each particular case. Attention could also be drawn to the extraneous evidence which provides the context which gives the ratio its significance. Problems with the crime scene sample, for example degradation or contamination, could be addressed in any warning. This would ensure that the jury have a clear understanding of the probative value of the match.

9.50 *The Commission therefore recommends that it should be left to the trial judge to decide whether a judicial warning on the DNA evidence is required in any particular case. The Commission proffers two exceptions to this recommendation. Firstly, where the prosecution seeks to rely on DNA evidence alone, the dangers of convicting on this evidence on its own should be explained to the jury. Secondly, the statistical significance of a DNA match should be explained carefully to the jury.*

CHAPTER 10 SUMMARY OF PROVISIONAL RECOMMENDATIONS

10.01 The provisional recommendations contained in this Paper may be summarised as follows:

Chapter 4 – DNA Sampling: Current Powers and Safeguards

10.02 The Commission is of the view that the taking of photographs and prints should be governed exclusively by legislation, even in the case of those taken on a voluntary basis. [Paragraph 4.12]

10.03 The Commission is of the view that similar modifications to those in the revised *Police and Criminal Evidence Act 1984* Code of Practice outlining the procedure for taking a hair sample should be introduced in this field by way of either Code of Practice produced by the Gardaí themselves or through Ministerial regulations passed under section 5 of the 1990 Act. [Paragraph 4.31]

10.04 The Commission recommends that the explanation for the reason and basis for taking samples must be given in a readily understandable manner, using plain language. [Paragraph 4.39]

10.05 The Commission recommends that safeguards similar to those recommended by the Human Rights Commission in respect of the taking of bodily samples should be provided for in a Code of Practice. In addition to these safeguards, so long as the particular forensic test may be conducted on the sample, the Commission is of the view that a certain amount of latitude should be given to individuals to choose the type of sample to be obtained. [Paragraph 4.42]

10.06 The Commission recommends the implementation of safeguards to ensure that the power to use reasonable force is not arbitrarily exercised. These safeguards should be similar to those suggested by the Human Rights Commission and could be implemented in the form of a Code of Practice. [Paragraph 4.50]

10.07 The Commission recommends that, as with fingerprints, the taking of bodily samples should be governed by legislation which should encompass all samples, even those taken on a voluntary basis. [Paragraph 4.61]

Chapter 5 – The Taking of the DNA Samples and the Retention of the DNA Profiles

10.08 The Commission is of the view that, at present, the storage of DNA profiles is not, in principle, objectionable. [Paragraph 5.11]

10.09 The Commission does not recommend any amendment to the present position by which a person must (subject to limited exception) be suspected of an “arrestable offence”, that is one carrying a penalty of at least five years imprisonment, to authorise the taking of a forensic sample. [Paragraph 5.36]

10.10 The Commission recommends that the DNA profiles obtained from individuals in custody under section 30 of the *Offences Against the State Act 1939*, section 4 of the *Criminal Justice Act 1984* and section 2 of the *Criminal Justice (Drug Trafficking) Act 1996* may be retained indefinitely on the national database. [Paragraph 5.67]

10.11 The Commission recommends that a person convicted of an offence, who is in prison, may be subject to DNA sampling without their consent. This sampling should be subject to the safeguards and rules set out in the *Criminal Justice Act 1984* and the *Criminal Justice Bill 2003*. However there should be no need, in the case of convicted offenders in prison, to show that the taking of the sample was required to prove or disprove involvement in an offence nor to prove that it is suspected that the convicted person committed an offence in addition to the offence, which caused the incarceration. [Paragraph 5.77]

10.12 The Commission recommends that on the quashing of an accused’s conviction, where the profile was obtained while he was in prison, the profile should be deleted from the database. [Paragraph 5.79]

10.13 The Commission recommends that a convicted offender’s profile be retained indefinitely on a national database. [Paragraph 5.82]

10.14 The Commission recommends that the taking of samples from volunteers should only occur under legislative cover and with the exception of the provision for the compulsory taking of samples below, only if they consent and the sample is likely to be useful for the investigation of a specific offence. Volunteers should be defined as persons from whom samples are taken who are not suspects or convicted offenders. In order for their consent to be valid, it must be informed, in writing and they should be given an opportunity to consult a legal practitioner before they agree to provide a sample. For it to be an informed consent, they should be notified of the purpose for which the sample is to be provided, the use that will be made of it and the fact that they are under no obligation to provide a sample. Failure to consent should also be precluded from constituting a reasonable ground for suspecting a person's involvement in an offence so as to justify the compulsory taking of a sample from them under section 2 of the 1990 Act and head 10 of the Scheme of the *Criminal Justice Bill 2003*. [Paragraph 5.90]

10.15 The Commission recommends that samples from persons other than suspects or convicted persons may only be taken without the consent of the person where a court order authorises the taking of the sample on the basis that the person is endeavouring to obstruct the course of justice in refusing to give the sample and the sample is necessary for the investigation of a serious offence. [Paragraph 5.94]

10.16 The Commission recommends that a volunteer's profile may only be retained on the national database, where an informed consent has been given for this. A volunteer should be advised of all the implications that this insertion will involve including the fact that it may be used for the purpose of future searches. [Paragraph 5.96]

10.17 The Commission suggests that any individual, even a person unconnected with a particular investigation, should be permitted to have their profile retained on the national database. [Paragraph 5.98]

10.18 The Commission recommends that volunteers be permitted to withdraw their consent to the retention of their profiles on the national database. [Paragraph 5.102]

10.19 The Commission recommends that if a volunteer consents to the retention of their profile on a national database then it may be utilised for any of the purposes permitted. [Paragraph 5.105]

10.20 The Commission recommends that a Garda Superintendent or acting Superintendent be required to approve in writing a mass screen before it may be conducted. In addition to this, evidence of a person's failure to consent to testing during a mass screen should not be admissible in court. [Paragraph 5.111]

10.21 The Commission does not recommend the establishment of a comprehensive DNA database because its establishment would weigh disproportionately against individual rights and be excessively expensive and its benefits would not be significant in terms of crime prevention. [Paragraph 5.117]

10.22 The Commission recommends that the profiles obtained voluntarily outside the ambit of the 1990 Act may be retained indefinitely unless the volunteer withdraws consent to their retention. In respect of the profiles obtained under the 1990 Act, these should be destroyed within the period specified by the Act. [Paragraph 5.121]

Chapter 6 – The Biological Samples – Retention or Destruction?

10.23 The Commission is of the view that where biological samples are found at the scene of a crime they should be retained, principally as a safeguard in the event that an individual convicted of the offence to which the sample relates alleges that a miscarriage of justice has occurred and wishes to challenge the veracity of the original evidence. [Paragraph 6.07]

10.24 The Commission is, in principle, inclined towards destruction of comparator samples once a profile has been generated, verified and stored and the trial in respect of which the sample was obtained has concluded. Limited and anonymised samples should be retained for longer periods of time, but not indefinitely, in order to ensure that the profiling methods are accurate, for quality assurance purposes and to assist in the regulation and accreditation of providers of forensic profiles and the custodian of any database. [Paragraph 6.25]

Chapter 7 – The Permissible Uses of the DNA Samples and Profiles

10.25 The Commission is of the view that the analysis of biological samples taken from a scene of crime should be limited to purposes that further the criminal investigation and that the results of any analysis should be kept under the most careful custody. Analysis of coding regions should therefore be allowed to determine non-

sensitive phenotype information in respect of common characteristics, such as eye colour and skin colour. [Paragraph 7.14]

10.26 The Commission recommends that any legislation providing for the analysis of DNA samples for comparison with biological samples left at the scene of a crime should exclude testing which might reveal information about genetic disorders, personality and behavioural traits and predispositions. The Commission does not recommend that analysis of DNA samples should be restricted explicitly to the non-coding regions. [Paragraph 7.20]

10.27 The Commission recommends that the profiles of deceased's persons may be matched against the convicted offenders', suspects' and volunteer's indexes of the database for the purpose only of identifying these persons and not for any other purpose such as paternity determination. [Paragraph 7.27]

10.28 The Commission recommends that the profile of a deceased's person may be matched against the crime scene index where a court authorises this on the basis that there are reasonable grounds for suspicion that the deceased was responsible for the crime and it is an appropriate order to make having regard to all the circumstances of the case. [Paragraph 7.30].

10.29 The Commission recommends that in the event of a person being so severely injured as to be unable to indicate their identity, a person with a proper interest in the matter should be entitled to make a High Court application seeking the identification of the person from the DNA database. [Paragraph 7.32]

10.30 The Commission recommends that the database should only be used for crime investigation purposes and the identification of deceased and severely injured people. The specific purposes for which the database may be used should be detailed in legislation. [Paragraph 7.39]

10.31 The Commission recommends that a sample obtained voluntarily from a perpetrator's relative may be used to implicate the perpetrator in the crime but that no compulsory power should be introduced to the effect that such a relation may be compelled to give a sample. [Paragraph 7.44]

10.32 The Commission recommends that it be permissible to use a DNA "partial match" from a relative to justify implicating a suspect. [Paragraph 7.47]

10.33 The Commission recommends that the State should only obtain profiles from other jurisdictions, where these profiles have been collected and retained in a manner compatible with Irish law. The Commission also recommends that the State should accede to an international database if the profiles present on the database may be lawfully used for these purposes under Irish law. In the event of any profiles being submitted to an international database or exchanged with another jurisdiction, reasonable steps should be taken to ensure that the information disclosed is not used in a manner which infringes Irish law. [Paragraph 7.54]

Chapter 8 – Oversight, Regulation, Quality Control and Accreditation

10.34 The Commission recommends the enactment of legislation under which the Forensic Science Laboratory would be incorporated into an independent statutory body called the Forensic Science Agency. It should be governed by a Board composed of a number of individuals with relevant and varied expertise but who are independent of the Government. This body would be responsible for both the profiling and storage of the crime scene and comparator samples. Its functions in this regard would be subject to reviews by the Irish National Accreditation Board. A department of the Forensic Science Agency would be in charge of custody of the database. Matches obtained through this database should be communicated to the Gardaí by virtue of a secure computerised system. The body's function of managing the database would be subject to external oversight from an oversight commissioner. [Paragraph 8.20]

10.35 In the event of any private forensic laboratory establishing itself in this jurisdiction, it should also be subject to oversight, in respect of its limited functions, from the Irish National Accreditation Board and the external oversight Commissioner, which the Commission has recommended oversee the workings of the new independent body. [Paragraph 8.23]

10.36 The Commission recommends that strong security measures should be implemented to ensure that the information on the database is used only for the permitted purposes set out in the legislation. In setting up a database, provision should be made for adequate resources for the responsible Board to engage expert advice to ensure proper safeguards are used. [Paragraph 8.29]

10.37 The Commission recommends that stringent and effective safeguards be put in place to ensure that all biological samples are stored under appropriately secure conditions. Expert advice should be sought regarding the precise form that these measures should take. [Paragraph 8.33]

10.38 The Commission recommends that an offence of intentionally or recklessly causing the disclosure of the information derived from the samples or the information contained on the database for purposes other than those provided for by legislation should be enacted into law. [Paragraph 8.38]

10.39 The Commission recommends that reminders as to destruction dates should be installed on computers to ensure that the profiles and samples are destroyed as provided for by legislation. [Paragraph 8.43]

10.40 It is accepted by the Commission that the procedures, which provide for oversight of the Forensic Science Laboratory's performance, in particular those under the Irish National Accreditation Board, comply with best international standards. The new independent laboratory, which the Commission recommends be established, should be required to follow the same procedures. The Commission recommends that the quality control and quality assurance procedures be kept under review to ensure that the appropriate standards are being complied with. [Paragraph 8.52]

10.41 The Commission recommends that the Advisory Forum, which has been established or its successor, should be responsible for keeping under review the procedures adopted by the Garda Síochána in respect of crime scene examinations to ensure that they meet the technical advances, the technological improvements and the added complications DNA evidence presents. [Paragraph 8.60]

Chapter 9 – DNA Evidence

10.42 The Commission recommends that if an issue as to the admissibility of DNA evidence is likely to arise or arises in a case, then consideration should be given to dealing with such an issue at a preliminary hearing or at an early hearing if this is just and convenient in the particular circumstances. [Paragraph 9.17]

10.43 The Commission does not recommend that there should be a prohibition on convicting on DNA evidence alone. Rather, the Commission recommends that in all cases where it is sought to rely

on DNA evidence alone, the jury should be warned of the dangers of convicting on this evidence in the absence of other supporting evidence. However, they should be advised that they may convict on this evidence if they are satisfied beyond reasonable doubt of the defendant's guilt. [Paragraph 9.27]

10.44 The Commission recommends that, as at present, where DNA evidence is obtained illegally, but not in breach of a person's constitutional rights, the trial judge should be empowered to determine, as a matter of discretion, whether to admit it in evidence. [Paragraph 9.31]

10.45 The Commission recommends that following consultation with an expert group on the statistical presentation of a DNA match, guidance should be provided in the form of Rules of Court or a Code of Practice on the presentation of a DNA match statistically. Whatever guidelines on the statistical presentation of the significance of a match are decided on, the judge in summing up the evidence should alert the jury to the fact that the estimates are not intended to be precise, that they are the products of mathematical and scientific theory, that they do not purport to define the likelihood of guilt and that the statistical evidence must be considered along with all the evidence in the case. [Paragraph 9.44]

10.46 The Commission recommends that it should be left to the judge to decide whether a judicial warning on the DNA evidence is required in the particular case at hand. The Commission proffers two exceptions to this recommendation. Firstly, where the prosecution seeks to rely on DNA evidence alone, the dangers of convicting on this evidence on its own should be explained to the jury. Secondly, the statistical significance of a DNA match should be explained carefully to the jury. [Paragraph 9.50]

APPENDIX LIST OF LAW REFORM COMMISSION PUBLICATIONS

First Programme for Examination of Certain Branches of the Law with a View to their Reform (December 1976) (Prl 5984)	€0.13
Working Paper No 1-1977, The Law Relating to the Liability of Builders, Vendors and Lessors for the Quality and Fitness of Premises (June 1977)	€1.40
Working Paper No 2-1977, The Law Relating to the Age of Majority, the Age for Marriage and Some Connected Subjects (November 1977)	€1.27
Working Paper No 3-1977, Civil Liability for Animals (November 1977)	€3.17
First (Annual) Report (1977) (Prl 6961)	€0.51
Working Paper No 4-1978, The Law Relating to Breach of Promise of Marriage (November 1978)	€1.27
Working Paper No 5-1978, The Law Relating to Criminal Conversation and the Enticement and Harboursing of a Spouse (December 1978)	€1.27
Working Paper No 6-1979, The Law Relating to Seduction and the	

Enticement and Harbours of a Child (February 1979)	€1.90
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Working Paper No 8-1979, Judicial Review of Administrative Action: the Problem of Remedies (December 1979)	€1.90
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Report on Domicile and Habitual Residence as Connecting Factors in the Conflict of Laws (LRC 7-1983) (December 1983)	€1.90
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Seventh (Annual) Report (1984) (PI 3313)	€1.27

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