DNA and the Criminal Process: ‘Striking the Right Balance’: the case for a ‘reflective’ approach

David O'Dwyer
Thesis Offered for the Degree of Doctor of Philosophy

School of Law
Faculty of Arts, Humanities and Social Sciences
University of Limerick

Supervisor: Prof. Dermot PJ Walsh

Submitted to the University of Limerick, December 2012

Defended 5th March 2013
Abstract

Title: DNA and the Criminal Process: ‘Striking the Right Balance’: the case for a ‘reflective’ approach

Author: David O’Dwyer

DNA profiling has become synonymous with modern criminal investigation. Since its discovery in 1984 its rapid acceptance into the criminal process has been driven by its exciting potential: inter alia, its ability to rapidly include and exclude individuals in a criminal investigation, to reach back through time to provide the silent witness to a crime that has long gone cold, and to provide reliable, probative and objective evidence in a court of law, while also proving to be a useful liberator in exposing miscarriages of justice in the post-convictional sphere. This alluring potential has been enhanced by continuing developments in technology and science which enabled the collected DNA to be placed on searchable electronic repositories in 1995, in the form of a DNA database.

However, despite its potential, the use of DNA within the criminal process (exacerbated by the sensitive information contained within a DNA sample) creates substantial human rights, due process and ethical concerns. Thus it is imperative that any regime enabling the state to utilise this powerful identification technology is embedded with adequate safeguards and protocols to protect those targeted by the process.

The concern is that in a modern security conscious society in which individual rights and due process values are coming under increasing pressure an appropriate balance for its use should be located. A concern that is heightened by the increasingly distorted public perception surrounding the oracle like ability of DNA profiling. This distortion has aided the apathy surrounding the incremental growth and function creep of DNA policies and techniques within the criminal process. Discourse that has occurred has habitually been situated within pugilistic contests in which both sides have been guilty of adopting aggressive defensive postures – often resulting in an impasse inhibiting progressive debate.

The scope of this thesis extends to the investigative phase of the criminal process as opposed to the entirety of the process. The thesis offers a reflective approach as an amenable solution to the conflicts that are often encountered during the earlier stage of the process. The approach is predicated on a number of ideals: firstly, it promotes an all encompassing reflective approach to decisions (i.e. it incorporates opinions from the divergent schools of thought); and secondly, it recognises the developing nature of DNA technology so it postulates an adaptive, organic and discursive approach to the scope, application and safeguards surrounding its use. The aim of such a methodology is to seek to benefit from the exciting potential of DNA technology whilst concomitantly ensuring that those targeted by the process remain sufficiently protected.
Declaration

I hereby declare that the dissertation, submitted in fulfilment of the requirements for the degree of Doctor of Philosophy, represents my own work.

Signed

____________________
David O’Dwyer
12/12/2012
Acknowledgments

I would like to express my gratitude to Dr. Vicky Conway for offering me the opportunity to undertake my doctoral studies and Professor Walsh’s willingness to take over the ‘reigns‘ after my first year. His support and guidance over recent years have played an enormous role in enabling me to prepare this thesis for submission.

I would also like to thank the UL Law School for the fantastic support and opportunities provided to me during the course of my studies. In addition, the support and funding of the Irish Research Council for Humanities and Social Sciences enabled me the time and peace of mind to devote sufficient time in preparing this dissertation.

To my family, the unconditional love and support over the years has been nothing short of inspiring – I am eternally grateful.

Finally, to my wife to be – there can’t be many tougher roles in life that being the partner of a PhD student – the weekends in, the lack of money, the despair, the cantankerous behavior, the insular focus– in the moments when self doubt appeared almost overwhelming your unending patience, belief and positivity kept me on track – thank you!
# Contents

Abstract ...................................................................................................................................... ii  
Declaration .................................................................................................................................. iii  
Acknowledgments ..................................................................................................................... iv  
Contents ..................................................................................................................................... v  
Cases ......................................................................................................................................... ix  

1. A General Introduction ....................................................................................................... 1  
   1.1. Introduction ............................................................................................................................ 1  
   1.2. Challenges ............................................................................................................................... 3  
   1.3. Structure ................................................................................................................................. 5  
   1.4. Conclusion ............................................................................................................................. 11  

2. Demystifying DNA........................................................................................................... 13  
   2.1. Introduction .......................................................................................................................... 13  
   2.2. Culture of the Trace .............................................................................................................. 14  
   2.3. Introducing DNA.................................................................................................................... 25  
      2.3.1. DNA principles ............................................................................................................... 30  
      2.3.2. DNA profile .................................................................................................................... 33  
   2.4. DNA Database ....................................................................................................................... 39  
      2.4.1. Examining the Process of DNA Analysis ........................................................................ 45  
   2.5. Opening the ‘Black Box’ ..................................................................................................... 50  
      2.5.1. Chain of Custody ........................................................................................................... 53  
      2.5.2. Contamination of samples ............................................................................................ 55  
      2.5.3. Errors in data handling ................................................................................................. 57  
      2.5.4. Misinterpreting DNA profiles ........................................................................................ 58  
      2.5.5. Adventitious matches ................................................................................................... 61  
      2.5.6. LCN DNA Profiling ........................................................................................................ 62  
   2.6. Tackling the ‘CSI Effect’ ................................................................................................... 67  
   2.7. Conclusion: Genetic Justice ............................................................................................... 68  

3. _Striking the Right Balance_: DNA and Criminal Justice Values ................................. 71  
   3.1. Introduction .......................................................................................................................... 71  
   3.2. Criminal Justice Values ..................................................................................................... 71
Cases

A v UK (1998) 5 BHRC 137

Adair v M'Garry [1933] SLT 482

Allenet de Ribemont v France (1995) 20 EHRR 557

Anderson v Virginia 650 SE 2d 702 (Vir 2006) 706

Attorney General’s Reference (No.3 of 1999) [2001] 2 AC 91; [2001] 1 All ER 577

Barbera v Spain (1989) 11 EHRR 360

Bastable v Little [1955] 3 All ER 406

Bell v Wolfish (1979) 441 US 520, 533

Bowes v DPP [2003] 2 IR 25

Braddish v DPP [2002] 1 IR 151

Brown v Walker (1896) 161 US 591

Byrne v Grey [1988] IR 31

Byrne v Judges of the Circuit Court [2007] IEHC 266


Callis v Gunn [1963] 3 All ER 677

Chare (nee Jullien) v France 71 DR 141 (1991)

Coffin v United States 156 US 432, 453 (1895)

Commonwealth of Pennsylvania v Kevin J. Foley (Indiana County, No. 1170, Crim. 2009)

Commonwealth v Cabral (2007) Massachusetts Courts of Appeal No. 06-P-987

Condron v United Kingdom [2001] EHRR 1

Connolly v DPP [2003] 4 IR 121

Costello-Roberts v UK (1995) 19 EHRR 112

Creaven v Criminal Assets Bureau [2004] 2 IR 434

Dallison and Caffrey [1964] 2 All ER 610

Daubert v Merrell Dow Pharmaceuticals (1993) 509 US 113

Dillon v O’Brien (1887) 20 LR IR 300
Director of Public Prosecutions v Boyce [2008] IESC 62

Donnelly v Ireland [1998] 1 IR 321

DPP (Walsh) v Cash [2007] IEHC 108

DPP v Horgan [2009] IECCA 85

DPP v McGoldrick [2005] 3 IR 123

DPP v Murphy [2005] 2 IR 125

DPP v Spratt [1995] 2 ILRM 117

DPP v Yamanoha [1994] 1 IR 565

Dudgeon v UK (1981) EHRR 149

Dumbell v Roberts [1944] 1 All ER 326

Dunne v DPP [2002] 2 ILRM 241

Englert v Germany 13 EHRR 392


Ferguson v City of Charleston 532 US 67 (2001)

Fox v United Kingdom (1991) 13 EHRR 157

Freidl v Austria (1996) 21 EHRR 83

Frye v United States 293 F 1013 (DC 1923)

Funke v France (1993) 16 EHRR 297

Gaskin v United Kingdom (1990) 12 EHRR 36

Gilligan v Criminal Assets Bureau [1998] 2 IR 185

Green v Berge 354 F 3D 675 (7th Cir 2004)

Groceman v US Department of Justice 354 F 3D 411 (5th Cir 2004)

Guerra v Italy (1998) 25 EHRR 357

Haskell and Ento v Brown 677 F Supp 2d 1187 (2009)

Heaney and McGuinness v Ireland (2001) 33 EHRR 264

Heaney v Ireland [1996] 1 IR 580

Heaney v Ireland [2001] 33 EHRR 1

Hewitt and Harman v United Kingdom (1992) 14 EHRR 657
Holt v US (1910) 218 US 245


Jamil v France (1995) 21 EHRR 65

Jones v Murray 962 F 2D 302 (4th Cir 1992)

Kane v Governor of Mountjoy Prison [1988] IR 321

Kennedy v Ireland [1987] IR 587

Khan v United Kingdom (2001) 31 EHRR 45

Klass v Germany (1978) 2 EHRR 193

Kyllo v United States 533 US 27 (2001)

Labita v Italy No 26772/95, April 6 2000

Leander v Sweden (1987) 9 EHRR 433

Lopez Ostra v Spain (1995) 20 EHRR 277

Ludi v Switzerland [1993] 15 EHRR 173

Ludlow v DPP [2009] 1 IR 640

MacKeown v DPP, unreported Supreme Court, 9 April 2003

Malone v United Kingdom (1985) 7 EHRR 14

Martin v UK (27 March 2003)

McGee v AG [1974] IR 284

McGinley v Judge Michael Reilly [2006] IEHC 357

McIlkenny et al (1991) 93 Cr App R 287

McVeigh v United Kingdom (1983) 5 EHRR 71

Minelli v Switzerland, 5 EHRR 554

Mitchell v DPP [2000] 2 ILRM 396

MS v Sweden, ECtHR Appl 20837/92 (27 August 1997)

Murphy v DPP [1989] ILRM 71

Murray v United Kingdom (1996) 22 EHRR 29

Nicholas v Goord 430 F 3D 652 (2nd Cir. 2005)

Nietmitz v Germany (1993) 16 EHRR 97
Nolkenbockhoff v Germany 13 EHRR 360
Norris v AG [1984] IR 36
North Western Health v HW [2001] 3 IR 622
Ornela v United States 517 US 690 (1996)
Padgett v Donald 401 F 3D 1273 (11th Cir 2005)
Peck v United Kingdom (2003) 36 EHRR 41
People (AG) v McGrath (1965) 99 ILTR 69
People (DPP) v Allen [2003] 4 IR 295
People (DPP) v Birney and Others [2007] 1 IR 337
People (DPP) v Boyce (unreported, December 21, 2005)
People (DPP) v Carroll Circuit Criminal Court, 24 February 2004
People (DPP) v Connolly [2003] 2 IR 1
People (DPP) v Costigan (unreported, April 28, 2006)
People (DPP) v Davis [2001] 1 IR 587
People (DPP) v Horgan (unreported Irish Examiner, 25 June 2002)
People (DPP) v Joyce [2008] IECCA 1
People (DPP) v Laide and Ryan [2005] 1 IR 209
People (DPP) v Mark Lawlor (Central Criminal Court, 2 December 1995); (Court of Appeal 26 February 2001)
People (DPP) v Meleday [1995] 2 IR 517
People v Ayler, NYLJ (1 October 2004)
People v Casey (No 2) [1963] IR 33
People v Jennings, 96 NE 1077 (Ill 1911)
People v McGowan [1979] IR 45
Perna v Italy [2004] EHRR 28
Perry v United Kingdom (2004) 39 EHRR 76
Peters v Netherlands, App No 21132/93, 77-A D&R 75
PG v United Kingdom (2008) 46 EHRR 51
Quinn v Ireland (2001) 33 EHRR 264
R (S and Marper) v Chief Constable of the S. Yorkshire Police [2004] UKHL 39

R (S and Marper) v Chief Constable of the S. Yorkshire Police (2002) 1 WLR 3223, 3226–28 (AC) (UK)

R (S) v Chief Constable of S Yorkshire Police [2004] 1 WLR 2222

R v AN (1978) 2 CR (3d) 55

R v Beare [1998] SCR 387

R v Borden [1994] 3 SCR 145

R v Briggs (2001) 157 CCC (3d) 38

R v Chief Constable of South Yorkshire, ex parte LS and Marper [2002] EWHC 478 (Admin)

R v Clark [2003] EWCA Crim 1020

R v Deen (CA, 21 December 1993)

R v Director of the Serious Fraud Office, ex parte Smith [1993] AC 1

R v Doheny and Adams (1997) 1 Crim App R 369

R v Dyment (1998) 45 CCC (3d) 244

R v Gorden (1995) 1 Cr App R 290

R v Hoey [2007] NICC 49

R v Krager [2001] SASC 64

R v Maguire (1992) 94 Cr App R

R v Pantoja (1996) 88 A Crim R 554


R v Rodgers [2006] 1 SCR 554, 2006 SCC 15


R v Smith [1985] Crim LR 590

R(S and Marper) v Chief Constable of the S. Yorkshire Police [2004] UKHL 39

Raninen v Finland (1997) 26 EHRR 563

Rayner v UK 47 DR 5 (1987)

RC v DPP [2009] IESC 32

Rock v Ireland (1997) 3 IR 484

Rogers v DPP [1992] 2 ILRM 695

Ryan v O’Callaghan (unreported, High Court, 22 July 1987)

S & Marper v UK 48 EHRR 50

S and Marper v United Kingdom (2009) 48 EHRR 50

Saunders v United Kingdom [1996] 23 EHRR 313

Savage v DPP [2009] 1 IR 185

Scully v DPP [2005] 1 IR 242

Sekanina v Austria (1994) 17 EHRR 221

Shimovolos v Russia (Application no.30/94/09)

Simirnova v Russia (2003) 39 EHRR 450

Spencer v Commonwealth 384 SE 2d 775

Stack v Boyle 342 US 1, 4 (1951)

State (C) v Frawley [1976] IR 365

State (Healy) v Donoghue [1976] IR 325

State (Richardson) v Gov Mountjoy Prison [1980] ILRM

State of Wastington v Athan (2007) 158 P 3d 26

States v Kelly 55 F2d 67 2d Cir (1932)

Teper v R [1952] AC 480

The People (DPP) v Downey, Central Criminal Court, 12 March 2004

The People (DPP) v Howe, Irish Times 15 October 2003

The People (DPP) v Michael Murphy, Central Criminal Court 2004

The Queen v Lushington [1894] 1 QB 420

Toohey v DPP [2008] IESC 64

US v Amerson 483 F 3D 73 (2nd Cir 2007)

US v Banks 490 F 3D 1178 (10th Cir 2007)

US v Conley 453 F.3D 674 (6th Cir. 2006)

US v Hook 471 F 3d 766 (7th Cir 2006)
US v Kimler 335 F 3D 1132 (10th Cir 2003)


US v Kraklio 451 F 3D 922 (8th Cir 2006)

US v Kriesel 508 F 3D 941 (9th Cir 2007)


US v Szubelek 402 F 3D 175 (3rd Cir 2005)

US v Weikert 504 F 3D 1 (1st Cir 2007)

R v Shaheed [2002] 2 NZLR 377

Van der Velden v The Netherlands App No 29514/05 (European Court of Human Rights, December, 7, 2006)

Van Mechelen and Others v The Netherlands [1998] 25 EHRR 647

Von Hannover v Germany (Application number 59320/00, 24 June 2004)

W v Switzerland (1994) 17 EHRR 60

W v The Netherlands App no 20689/08 (European Court of Human Rights, January 20, 2009)

Walsh v O’Buachalla [1991] 1 IR 56

Welch v United Kingdom (1995) 20 EHRR 247

Wilson v Collins 517 F 3D 421 (6th Cir. 2006)

X and Y v Netherlands, (1985) 8 EHRR 235

X v Austria, (1979) 18 DR 154

X v Germany, App No 8334/78, 24 D&R 103

X v Netherlands, App No 5239/78, 16 D&R 184

Z v DPP [1994] 2 IR 476

Z v Finland (1998) 25 EHRR 371
1. A General Introduction

1.1. Introduction

Sherlock Holmes said _i t has been an axiom of mine that the little things are infinitely the most important_, but he never could have imagined that such a little thing, the DNA molecule, could become perhaps the most powerful single tool in the multifaceted fight against crime. Twenty years after the development of DNA fingerprinting, forensic DNA analysis is key to either conviction or exoneration of suspects. It is also central to the identification of victims of crimes, accidents and disasters, driving the development of innovative methods in molecular genetics, statistics and the use of massive intelligence databases.¹

DNA has been described as _one of the most powerful tools at our criminal justice system's disposal_.² Whether you agree or disagree with this statement it is difficult to dispute the impact that DNA (Deoxyribonucleic Acid) has had and is continuing to have on the criminal process.

Still a relatively new form of evidence, DNA, in the form of DNA profiling, has only been incorporated into the criminal process since the mid 1980s.³ It was discovered, almost by accident, by Sir Alec Jeffreys in 1984 in Leicester in the United Kingdom (UK).⁴ The crux of Jeffreys discovery revealed that contained within the DNA samples of individuals are genetic sequences that are unique to each individual.⁵ The individualising capacity and potential of this discovery became quickly apparent.

While it was initially thought to present a useful tool for immigration services, almost immediately its potential for criminal investigation rose to prominence. Due to the design of the human body, we secrete biological cells or _DNA traces_ on a daily basis such as skin

---

³ For an excellent history of DNA profiling see Aronson JD, Genetic Witness: Science, Law and Controversy in the Making of DNA Profiling (Rutgers University Press 2007).
⁵ Ibid.
cells when touching a door handle, hair follicles when we brush our hair or saliva cells when we use eating utensils. It is therefore entirely possible that a perpetrator will leave a DNA trace at a crime scene, particularly a crime scene at which a perpetrator, due to the nature of the crime (such as a violent or sexual crime) may discard a biological sample, which may prove beneficial for a criminal investigation. Discard theories have long been associated with criminal investigation theory, for example, Emile Locard, considered the father of forensic science, famously observed in the nineteenth century — every contact leaves a trace. The theory referred to as Locard's principle of exchange theory, postulates that a perpetrator of a crime will habitually discard a clue or a trace during the commission of the crime. Thus it was unsurprising that the principal of exchange theory, which has been applied to other biometric identifiers for over a century (such as fingerprints), influenced how DNA profiling could be utilised during the investigative phase of the criminal process.

Jeffreys did not have to wait long to illustrate the benefits of this new identification technique. In 1986, DNA profiling was paramount in the capture and conviction of Colin Pitchfork for the double rape and murder of two young girls in Leicestershire in the UK. Interestingly, the first case to utilise DNA profiling in a criminal investigation encapsulates many of the defining characteristics and virtues inherent when using the technology during a criminal investigation. Its primary benefits include its ability to include and exclude an individual from a particular investigation. For example, during the Pitchfork investigation, a suspect who had originally confessed was subsequently excluded from the investigation as his DNA profile did not match the DNA profile that had been obtained from the original crime scenes. Moreover, the case illustrated the investigative utility of the technology. For instance, although the murder cases occurred

---

6 As Newton states: —A criminal always leaves something behind at the scene of a crime, some kind of evidence that connects criminal and crime.” See, Newton DE, DNA Evidence and forensic science (Infobase Publishing 2008), 3.
7 The case gained substantial notoriety. Joseph Wambaugh published an interesting account of the case entitled The Blooding. In November 1983, a 15 year old girl, Lydia Mann, was discovered dead on a secluded path near the village of Narborough in Leicestershire. An examination of the body revealed she had been the subject of a rape. Police launched a major investigation but the case remained unsolved. Almost three years later, in July 1986, a similar crime was carried out in the neighbouring village of Enderby. The girl was identified as 15 year old Dawn Ashworth. Both girls had been stripped naked and strangled. Wambaugh J, The Blooding (Bantam 1989). See also Kennedy D, —Colin Pitchfork, notorious child sex killer, has prison sentence cut‖ TimesOnline (15 May 2009). Available at: http://www.timesonline.co.uk/tol/news/uk/crime/article6289530.ece.
9 In the second case, the police had a suspect: a seventeen year old boy who was employed by the local mental hospital. He was reported as acting strangely around the time of the murder. When questioned the individual (who had a low IQ) admitted to murdering Dawn Ashworth. However, Jeffreys' new technique showed that the individual's DNA did not match the DNA obtained from the crime scene. White R and Greenwood J, —DNA Fingerprinting and the Law‖ (1988) 51 Modern Law Review 145, 149–150.
three years apart, DNA profiling verified that the samples from both crime scenes were a _match_, which enabled police to concentrate their efforts on a single perpetrator.\(^\text{10}\) Finally, the case illustrated the ability of DNA technology to produce both intelligence and probative evidence for the authorities. For example, the case involved the first ever _DNA mass screen_ organised by the police. Five hundred local men were screened and asked to volunteer a DNA sample. While this did not directly identify Pitchfork, a member of the public admitted to providing a sample on his behalf. The police subsequently arrested Pitchfork and obtained a DNA sample. His DNA profile (derived from the DNA sample) matched the profile from both crimes scenes. On the basis of this DNA evidence, Pitchfork subsequently confessed and was convicted to serve life imprisonment in 1988.\(^\text{11}\)

From a procedural perspective the application of DNA profiling within the criminal process can be divided into a number of stages: namely, collection, retention, use and presentation. _Collection_ includes the gathering of samples from crime scenes and from particular individuals (such as those suspected of an offence). _Retention_ incorporates the continued preservation of a sample (and/or derived information such as a DNA profile) in a repository after the collection of the material. _Use_ involves the use to which the retained material may be put during a criminal investigation. While predominately used to match a suspect to a crime scene or exclude him or her, recent technological developments have significantly expanded the use to which a DNA sample/profile may be put during a criminal investigation (such as familial DNA searching). Finally, _presentation_: after DNA information has linked an individual to a crime, the results of the match (in conjunction with other relevant evidence) may be adduced at trial in the form of DNA evidence. The results are presented in the form of expert evidence (predominately by a forensic scientist), which will be subject to the usual rigours of the adversarial process (council will typically attempt to confirm or undermine the veracity of the DNA match).

### 1.2. Challenges

As the Pitchfork case illustrates the application of DNA profiling during the criminal investigative phase of the criminal process has the potential to be extremely useful (i.e. it can

\(^{10}\) Jeffreys’ technique demonstrated that the DNA from both crimes scenes were an identical match. Aronson JD, _Genetic Witness: Science, Law and Controversy in the Making of DNA Profiling_ (Rutgers University Press 2007), 16.

include and exclude individuals rapidly from a criminal investigation, it can provide police with useful avenues and lines of inquiry for a criminal investigation and it can also produce probative evidence in a court of law). However, despite its obvious benefits (this thesis is adopting the position that it is beneficial for society to utilise modern technology (including DNA profiling) to solve crime, particularly violent crime), the adoption and continued use of DNA profiling within the criminal process raises a number of significant and fundamental concerns. For example, as Corns observes:

Herein lies one of the fundamental contradictions which is generated by the incorporation of DNA technology into criminal justice practices. On the one hand, DNA technology becomes useless unless the suspect is either persuaded or physically forced to provide a bodily sample, yet on the other hand, the very legitimacy of the Anglo criminal procedure and practice is premised upon the general assumption of innocence and the right to silence. It is conceptually difficult to reconcile the forceful taking of a suspect's blood with the rhetoric of the presumption of innocence, the right to silence and the privilege against self incrimination.12

As the quote exemplifies the incorporation of DNA into the criminal process is a highly controversial issue from a myriad of perspectives. The procedural stages of DNA in the criminal process (collection, retention, use and presentation) each raise a number of normative questions ranging for example from bodily integrity concerns surrounding the taking of a DNA sample, to the privacy concerns inherent in the state retaining this sample (and associated information such as the corresponding DNA profile) on a state repository.13 Therefore, as the 1992 Council of Europe Recommendation on DNA sampling observed: the use of the technique itself carried risks, not only in the technical application but also, and in

---

12 Corns C, "The science of justice and the justice in science" (1992) 10(2) Law in Context 7, 7. Corns quote while useful is perhaps slightly outdated. As will be discussed in chapter two, the gathering of a DNA sample has evolved (in the majority) from taking a blood sample towards the taking of a buccal (saliva) swab. However, despite the less invasive nature of a Buccal swab, the issues (with the exception of perhaps bodily integrity) created by the use of this technology still remain.

13 The issues involved in the collection and retention of DNA samples will be discussed at length in chapters four and five. Briefly, while the taking of a sample is not overly controversial for an individual who has been reasonably suspected of an offence (particularly one in which the taking of a DNA sample is relevant), a major concern with DNA profiling is its growing ability to cast suspicion on unsuspected individuals or ‘persons of interest’ (individuals who may fall below the usual standards of reasonable suspicion).
particular, as regards fundamental rights such as the rights to respect for the private and family life, the rights to a fair trial and the respect of the human body.

1.3. Structure

This thesis will focus upon the issues created by utilising DNA within the investigative phase of the criminal process. The rationale for this approach is grounded not only in pragmatism (i.e. the word constraints involved in every thesis) but more pertinently on the basis that the DNA profiling issues, conflicts and trends identified during this stage of the criminal process are currently in a stage of flux within Ireland and within the broader global environment. Thus this thesis will endeavour to proffer a timely and reasoned contribution to knowledge and working solution to this developing area.

A theme introduced in the opening pages is that the use of DNA profiling within a criminal investigation can be beneficial. However, the potential benefits (such as aiding a criminal investigation) are tempered by the concomitant concerns involved in the collection, retention and use of DNA during this process. Thus the central issue that will be addressed is how the state can locate an amenable balance between realising the benefits of this technology and the inherent human rights and due process concerns that are created by utilising this technology.

It is important to note from the start that the issue of balancing the relationship between the individual and the state during the investigation of crime is not a novel concern of modern society or a debate limited to DNA profiling. Safeguards have long been established in the form of common law, statute and constitutional protections (in the case of jurisdictions in which such an instrument has been drafted) that seek to restrict or limit the power of the state when investigating and detecting crime against the rights of the individual. As will be discussed in chapter three the reconciliation of these conflicts between the state and the individual is a deeply complicated area. In short it is vital to assess context, circumstances, impact and the interests involved in this balancing process so as to avoid the balancing becoming distorted and reduced to a cold numerical exercise which would often enable the state (or majoritarian/public interest arguments) to steamroll individual (and/or minority) rights/interests.

Council of Europe Recommendation R (92) 1, 11.
However, a question to assess is why the incorporation of DNA profiling presents a unique problem for the ‘habitual’ balancing act that is an inherent element of the pre-trial criminal process? It is submitted, despite the commonalities with DNA profiling to other investigative and crime control techniques it necessitates the creation of a carefully constructed framework. The reasoning behind this enhanced framework is manifold: inter alia, it’s phenomenal potential for criminal investigation, combined with its portrayal in media both fact and fiction (in particular the often sensationalised reporting of spectacular DNA success stories and the political ‘desire’ to use DNA technology in combating crime) and the rapidly developing nature of the technology. It is submitted that through a combination of these factors that the public perception of DNA profiling has been distorted by a ‘forensic imaginary’ (a distorted public perception of the utility of DNA technology).

The concern is that this ‘distorted perception’ in combination with the rights-adverse environment in which we currently reside has enabled a dramatic and relatively straightforward passage for DNA profiling into the criminal process (particularly the investigative phase of the process). As will be illustrated throughout the thesis a common trend in its application within the criminal process is the concept of ‘function creep’, namely, the expansion of a technique or procedure beyond its originally envisaged boundaries. In relation to DNA profiling, this expansion has included a ‘widening of the net’ of both the individuals and circumstances under which a DNA sample can be obtained while the retention and use of the relevant DNA material have also been subject to significant expansion.

---

15 See Williams R, ‘DNA databases and the forensic imaginary’ in Hindmarsh R and Prainsack B (eds.), Genetic Suspects: global governance of forensic DNA profiling and databasing (Cambridge University Press 2011), 131–152. This ‘forensic imaginary’ has been considered by others. For example, Gerlach provides an intriguing account of how ‘imaginary’ (defined as ‘a Genetic Imaginary’) was central to the ease with which DNA profiling and a DNA database were absorbed into the Canadian criminal justice system. Gerlach argues that the ‘genetic imaginary’s’ role in shaping public attitudes is important as it has a direct impact upon the concept of social and in particular bio-governance, described as ‘the social ordering of the civilization of the gene’. Explaining the concept as bio-governance, Gerlach focuses on five issues that are central to this question; privatisation, politicisation, objectification and responsibilisation. See Gerlach, N, The Genetic Imaginary: DNA in the Canadian Criminal Justice System (Toronto: University of Toronto Press, 2004). Gerlach is primarily a sociologist; however, a large section of his work examines the structural development of political power within a political system, with an emphasis on the political behaviour of elites and mass opinion, as well as the key roles of political institutions such as the media, the courts, the legislature and law enforcement.

16 Function creep is where ‘previously authorised arrangements … are … applied to purposes and targets beyond those envisaged at the time of installation’. See Fox R, ‘Someone to watch over us: back to the panoptican?’ (2001) 1(3) Criminal Justice 251, 261. See also Dahl JY and Saetnan AR – ‘It all happened so slowly’ – On controlling function creep in forensic DNA databases” (2009) 37(3) International Journal of Law, Crime and Justice 83–103.
Thus to counteract this ‘forensic imaginary’, the thesis will begin, in chapter two, by attempting to ‘de-mystify’ DNA. The purpose of chapter two is to introduce, define and clarify the principles involved in the DNA profiling process and elucidate how it functions in the criminal process. A central aim of the chapter will be to examine the perceived infallible and ‘silver bullet’ aura that has accompanied DNA profiling almost since its inception. The chapter is important as it will provide an essential grounding in the principles of DNA and DNA profiling while identifying the relevant problems and issues that may undermine and bring the validity of DNA evidence that is obtained during a criminal investigation into question.

Chapter three will then return to a number of the abstract issues introduced in this chapter surrounding the incorporation of DNA profiling into the pre-trial criminal process. Building upon the information outlined in chapter two, the chapter will critique the impact that the incorporation of DNA profiling is having and will continue to have on the traditional values of the criminal justice system. The chapter will suggest that to combat the inherent conflicts when attempting to implement this technology within the criminal process (i.e. the populist desire to utilize the technology against those who vehemently argue against its use) and as a result of the developing nature of the technology that a normative ‘reflective’ framework should be adopted. Such an approach will facilitate an amenable and organic balance between the states right to investigate and detect crime and the individual (and societal) conflicts created by the use of DNA within the investigative phase of the criminal process.

Chapter four will assess the range of issues that are created by the practice of DNA collection in the pre-trial criminal process, ranging from crime scene samples to comparator samples (samples obtained from individuals). The chapter will entail a comparative analysis of the expanding collection regimes in a number of international jurisdictions which indicate a continuing erosion of the justifications and safeguards that traditionally restricted the situations and individuals from which a DNA sample could be collected. The chapter will conclude by suggesting that the ‘reflective framework’ proffered in chapter three provides a more amenable framework for a DNA collection process as opposed to the current trends in this area.

Chapter five moves on to consider the subsequent stage after the collection of a DNA sample, namely the retention of crime scene and comparator DNA samples (and importantly their respective DNA profiles). The chapter will begin by illustrating the range of issues created by
the retention of an individual’s genetic information in a state repository. Similar to chapter four the chapter will entail an analysis of international trends and justifications in this area. Of particular importance will be an analysis of the recent European Court of Human Rights (ECtHR) decision in *S and Marper v United Kingdom*, which held that the United Kingdom (England, Wales and Northern Ireland) DNA retention practice was incompatible with Article 8 of the European Convention on Human Rights (ECHR).\(^{17}\) The *Marper* decision is important because currently (particularly in a European context) there is a lack of jurisprudence on the human rights implications created through the use of DNA profiling by national authorities during the investigative phase of the criminal process. Given Ireland’s obligation to interpret its legislation in conjunction with the ECHR, the *Marper* decision and the subsequent UK developments provide a useful barometer against which to measure the proposed DNA database in Ireland.\(^{18}\) The chapter will conclude by suggesting that the current justifications underpinning the expanding international retention policies are problematic. It will be suggested that the ‘reflective’ approach proffered by this thesis offers a more persuasive and justified approach to the concept of DNA retention by the state.

Chapter six offers a brief account of a developing area in the realm of DNA profiling and the investigative phase of the criminal process, namely governance. The rationale for the inclusion and brevity of the chapter is twofold: firstly, central to the concept of a ‘reflective framework’ is the concept of civic engagement and ‘good’ governance. However, secondly, given the embryonic and international nature of the DNA profiling and DNA databasing debates, the concept of ‘good governance’ is currently an area in the nascent stages of its development. ‘Good governance’ is an area that will be heavily dependent on cultural context, resources, expertise and experience. Thus it was felt that a chapter promoting ‘good governance’ values and practices (i.e., integrity and public confidence), was currently a superior approach to a more prescriptive account, which given the currently developing nature of governance and biometric databases would run the risk of becoming swiftly archaic.

Having developed a detailed understanding of the DNA profiling and the inherent issues involved in utilizing the technology during the investigative phase of the criminal process, chapter seven examines the current and proposed application of DNA profiling within an

\(^{17}\) *S and Marper v United Kingdom* 48 EHRR 50.

\(^{18}\) s 2 of the European Convention on Human Rights Act 2003 imposes an obligation on the Irish courts to interpret statutory provisions and rules of law with regard to the European Convention on Human Rights. Moreover, enacted legislation should also been constructed in a manner so as to be consistent with ECHR. While s 3 obliges every organ of the State to exercise its functions in accordance with ECHR.
Irish context. The chapter begins by noting the current trends within Irish criminal justice system and the potentially precarious atmosphere for seeking an appropriate balance for coercive legislation. It then critiques the myriad of criminal justice statutes, common law provisions and delays that currently underpin the use of DNA profiling within the Irish criminal justice process, before focusing upon the proposed changes to the current laws under the Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010, which purported to replace the current DNA collection procedures with a new comprehensive DNA regime (which incorporates a range of issues, *inter alia*, collection, retention, use, governance and oversight of the database). Despite the subsequent lapsing of the Bill an analysis of it is still instructive as it provides an opportunity to consider an Irish government’s most recent attempt to regulate and utilise DNA profiling within the criminal process. The chapter concludes by proposing that the ‘reflective’ approach proffered by this thesis should underpin any future or amended Irish proposals in this area.

In addition to the stages, concerns and issues outlined above, it is important to observe that there are a myriad of additional issues created by utilising DNA profiling within the criminal process. Developing areas include the role of DNA in modern policing (its growing influence on intelligence-led/proactive policing and its role in cross-border policing and inter-state cooperation), the growing (or one may suggest the returning) trend of bio-criminology, the fascinating area of bio-technological surveillance and the expanding area of risk, DNA and

19 For a fascinating account of DNA and criminal investigation see Williams R and Johnson P, *Genetic Policing: The use of DNA in Criminal Investigations* (Willan Publishing 2006). In relation to policing, post-modernity in conjunction with the technological changes in modern society has had a fundamental impact on the traditional concept of policing. It is difficult to dispute the significant impact of technologies such as DNA databases on modern policing from both an operational and philosophical perspective. In an era when society is calling for techniques that provide a level of objectivity during criminal investigation, DNA profiling is seen as a tool that provides the desired level of objectivity and neutrality. As Williams and Johnson summarise it: —At a time when criminal justice systems across Europe and beyond increasingly seek the epistemic authority of a variety of sciences to support the detection and prosecution of suspects and offenders, genetic science and recombinant DNA technology are often singled out for particular commendation.‖ See Williams R and Johnson R, *Forensic DNA Databasing: A European Perspective* (Interim Report, The Welcome Trust, June 2005), 7.


A developing area also includes the power of DNA to highlight the fallibility of testimonial evidence and identify/prevent miscarriages of justice. For example, as illustrated during the Pitchfork case, it has proved useful for excluding individuals during an investigation. Moreover, continuing developments in DNA technology have now expanded this potential into the post-convictional sphere, in which projects such as the ‘Innocence Project’ in the US have increased the number of individuals applying for post-convictional DNA testing. The growing number of successful exonerations using DNA is increasing the pressure to retain DNA evidence on conclusion of a trial and has begun to trouble the cornerstone concept of ‘finality’ within the criminal justice system.

Thus the use of DNA within the criminal process is a ‘deceptively complex’ issue raising significant human rights and public policy concerns. As Heffernan notes the DNA debate
is staggering in its range and complexity.\textsuperscript{29} Unfortunately, however, in any analysis choices have to be made: thus an in-depth commentary upon all of the aforementioned issues (such as DNA and policing, post-convictional testing, surveillance and the presentation of DNA within a court of law) is impossible given the word constraints involved in a thesis. However, where appropriate (when linked to the overall theme of this thesis) reference will be made to these and other related issues.\textsuperscript{30}

1.4. Conclusion

The crux of this thesis is an analysis of how the state should \textit{strike the right balance} when incorporating DNA into the investigative phase of the criminal process - having regard to the sensitive issues that it creates whilst attempting to effectively harness the potential and evolving nature of this powerful identification technology. It is vital to ascertain how to utilise this technique coherently and effectively as it is a tool which, if utilised correctly, should prove extremely beneficial for the entire criminal process, ranging from pre-trial investigation, to presentation of reliable evidence in court and to the exoneration of innocent individuals both during investigations and after conviction.

The concern is that often when attempting to answer questions of this nature (i.e. involving the relationship between the individual and the state), the answer that is invariably provided is the solution of \textit{balance}, i.e. how to strike the appropriate \textit{balance} between a state’s right to investigate and detect crime and the individual’s civil liberties and due process rights that are impinged on as a result of these state practices. The difficulty is that because of the dramatic events of the last decade at both a national and international level, it is submitted (this assumption is based on a rapidly expanding literature) that security or the desire for security has become a central issue for the modern state.\textsuperscript{31} The concern from this thesis’s

\textsuperscript{28} For an excellent analysis of the issues created by a DNA database see Redmayne M, \textit{The DNA database: Civil Liberty and Evidentiary Issues} [1998] \textit{Crim LR} 437.

\textsuperscript{29} Heffernan L, \textit{The taking of forensic samples: A review of proposed reforms} (2006) 16(2) ICLJ 2.


\textsuperscript{31} The literature surrounding security has dramatically increased in recent years following a number of international terrorist attacks. For a useful introduction to the field see Zedner L, \textit{Security} (Routledge 2009); Freedman L, \textit{The concept of security} in Hawkesworth M (ed), \textit{Encyclopaedia of government and politics}
perspective is that if one combines the current obsession with security with the ‘white knight’ perception accompanying DNA profiling, the result is a potentially dangerous cocktail for individual civil liberties and due process values, especially when subject to the precarious scales of balance.

It is submitted that given the almost universal acceptance of DNA technology around the world,\textsuperscript{32} that we have moved beyond the question about \textit{whether} we should implement this technology to a question of \textit{how} we should use this technology. As Walsh \textit{et al} note ‘the focus of the debate surrounding DNA evidence in the legal context has clearly changed from whether the technology has a place in the criminal justice system, to how it may be appropriately (legally) used to achieve criminal justice.’\textsuperscript{33} Therefore in an attempt to avoid the pitfalls and the mire of polarised opinion and a vague/undefined concept of balance, this thesis will proffer a normative ‘reflective’ regulatory framework as a mechanism for \textit{how} DNA profiling should continue to be integrated into the investigative phase of the criminal process.

\textsuperscript{32} A brief discussion on the legal acceptance of DNA evidence will be introduced in chapter two.

2. Demystifying DNA

2.1. Introduction

The growing role of technology in modern society and the continued development of forensic science have resulted in more intimate investigation techniques being utilised during a criminal investigation. From initial reliance on visual identification (progressing from eyewitness testimony on to photographs) investigations moved towards the human body, with fingerprinting and anthropometry.\(^{34}\) It then moved “under the skin” of the individual with the development of blood grouping.\(^{35}\) Now the development of genetics has led to the discovery of DNA and allowed investigating authorities to not only get _under the skin_ of an individual but to access a person’s _blue print for life_.\(^{36}\) Thus by utilising DNA technology we are now allowing the state to access a person’s most intimate personal information.

The purpose of this chapter is to introduce and explain the science involved in using DNA within the criminal process. The central aim of the chapter is to attempt to show that while DNA (in the form of a DNA profile) is in theory an extremely useful tool for criminal investigation, it is not nor should be perceived as a _silver bullet_. It is important to engage with and tackle the misconceptions and rhetoric that have tended to blight discourse in this area. By outlining and developing a clear understanding and grounding of the science and technology behind the DNA profiling process, it will be possible to objectively consider the benefits and associated concerns created by using this technology within the criminal process.

While this thesis is primarily concerned with examining DNA profiling as a biometric identifier, the chapter will begin with a brief historical analysis of the development of other biometric identifiers. It is important to conduct such an examination as it will illustrate that the state has long sought to develop means of identifying and individualising both the

\(^{34}\) For a fascinating account of the development of criminal investigation see the following: Parenti C, _The Soft Cage: Surveillance in America from Slavery to the War on Terror_ (Basic Books 2003); Cole SA, _Suspect Identities: A history of fingerprinting and criminal identification_ (Harvard University Press 2002); Wilson D, _Written in Blood: A History of Forensic Detection_ (Grafton Books 1989).

\(^{35}\) As blood can be categorised into four types, A, B, O and AB, it can be a useful exclusionary tool during a criminal investigation. However, given that there are only four categories its inclusionary potential is limited. For a brief overview of blood grouping see Law Reform Commission, _Consultation Paper on the Establishment of a DNA Database_ (LRC CP 29 – 2004), 10. See also Wall WJ, _Genetics and DNA Technology: Legal Aspects_ (Cavendish 2002), 46.

evidence located at crime scenes and the criminal fraternity to whom these samples belong. As Caplan and Torpey note history is full of repeated efforts to rationalise and standardise practices of identification and systems for the storage and retrieval of the expanding documentation this generated therefore it is important to see that DNA profiling and databasing it not as an isolated state practice but is located within a rich history of attempts to formulate and implement criminal identification practices and administrative recording systems.

2.2. Culture of the Trace

The practical difficulty when investigating crime is that often by the time the police arrive, the crime will have been committed and the perpetrator will have fled the scene. Therefore police will attempt to reconstruct the crime by interviewing victims and witnesses, and by gathering evidence, if any, from the crime scene. However, as victim narrative and eyewitness statements have often proved problematic in terms of reliability, authorities have long searched for objective means of identification to aid a criminal investigation. Towards the end of the nineteenth century, developments in science, notably forensic science (which

37 For further information on the history of criminal identification see Williams R and Johnson P, Genetic Policing: The use of DNA in criminal investigations (Willan Publishing 2008), chapter 2. Williams and Johnson note that the growth of modern policing is inextricably linked to the development and deployment of methods of human identification and classification, see Williams R and Johnson P, Genetic Policing: The use of DNA in criminal investigations (Willan Publishing 2008), 19.
41 Maguire M, "Criminal Investigation and crime control" in Newburn T (ed), Handbook of Policing (Willan 2003), 363. A traditional way in which a potential suspect may be identified to the police is by an eyewitness account, which could consequently be used as evidence in a criminal trial. 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 eyewitness 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. See 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. For more information on this issue see, Hallisey RJ, "Experts on Eyewitness Testimony in Court – A Short Historical Perspective" (1995-1996) 39 Howard LJ 237.
involves the application of scientific methods and techniques to the investigation and detection of crime),42 began to offer ‘objective’ identification techniques.43

The type of forensic investigations that are pertinent for this discussion are those which allow an individual to be connected or linked to the stain, substance or mark discovered at a crime scene. As Hardiman J describes in *Dunne v DPP*:44

> 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.45

Thus the use of forensic science for criminal investigations is that it will often provide a means for the police to establish a link to the ‘owner’ of the ‘stain’ or ‘mark’ that has been

---

42 Forensic science is the area of science that is predominately used in relation to the law. Forensic science is a science developed to utilise natural and physical materials to aid criminal investigations. Its origins can be traced to the work of Edmund Locard and the ‘principle of exchange’ theory in the nineteenth century. The principle of exchange was based on the concept that ‘every contact leaves a trace’. Similar developments in the US, referred to as criminalistics, focused on recognition, collection, identification, individualisation and interpretation of physical evidence and the application of science to criminal investigation. As the unreliability of traditional forms of evidence such as eyewitness testimony began to become apparent in the twentieth century, developments in technology and forensic identification continued to grow at an accelerated rate. The majority of forensic science utilised in criminal investigations focuses on trace evidence left behind at a crime scene or gathered from a victim, including fingerprints, hair, blood, urine or saliva. The development of technologies such as fingerprinting and DNA profiling has enabled the quicker and more accurate identification of individuals. For general reading see Newton DE, *DNA Evidence and forensic science* (Infobase Publishing, 2008); Inman K and Rudin N, *Principles and Practices of Criminalistics: The Profession of Forensic Science* (CRC Press 2001); Kielys TF, *Forensic evidence: science and the criminal law* (CRC Press 2001). There are numerous forms of forensic science techniques, including fingerprinting, handwriting and document examination, forensic odontology, forensic hypnosis, forensic psychiatry, polygraph, ballistics, facial mapping and reconstruction, photo-fit and E-fit, voice prints, photogram metric features comparison, breathalyser, blood grouping and DNA profiling. For a discussion of these methods and their use in criminal proceedings see Ebisike N, *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 D, *Written in Blood: A History of Forensic Detection* (Grafton Books 1989).

43 It is important not to denote a perception of objectivity on forensic science, similar to other forms of evidence it is capable of error and ordinarily requires corroborating evidence. For an interesting analysis of early criminal identification techniques see Pavlich G, “The subjects of criminal investigation” (2009) 11 Punishment and Society 171.


45 Ibid., at 246.
located at a crime scene. The benefits of forensic science are elucidated by Dr. James Donovan, the former Director of the Forensic Science Laboratory:

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 headlamp 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 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.46

Dr. Edmond Locard’s simplistic rationale of “every contact leaves a trace” became a mantra for criminal investigation departments. Kirk has eloquently noted the advantages of forensic science over other forms of testimonial evidence:

Wherever he steps, whatever he touches, whatever he leaves, even unconsciously, will serve as a silent witness against him. Not only his fingerprints or his footprints, but his hair, the fibres from his clothes, the glass he breaks, the tool mark he leaves, the paint he scratches, the blood or semen he deposits or collects. All of these, and more, bear mute witness against him. This is evidence that does not forget. It is not confused by the excitement of the moment. It is not absent because human witnesses are. It is factual evidence. Physical evidence cannot be wrong, it cannot perjure itself, it cannot be wholly absent. Only human failure to find it, study and understand it, can diminish its value.47

Therefore, police began to gather biological evidence or ‘traces’ from crime scenes on the aspiration of linking these traces to the perpetrator of the offence. Prior to the nineteenth century the only discernible form of tangible identification or trace evidence was the signature or ‘seal’ of an individual. Towards the end of the nineteenth century techniques developed to identify aspects of the individual. Originally, the primary rationale behind this identification was that it allowed the state to begin documenting and classifying society. Developments in technology and science began to reveal interesting aspects of the human body which began to prove useful for the processes of identification, documentation and classification.

A tangential development of these scientific breakthroughs began to see a number of these identification techniques being developed in tandem with the ability to collect ‘trace’ evidence from a crime scene. Joseph and Winter refer to this period as the ‘culture of the trace’. Drawing from Locard’s ‘principle of exchange’ theory techniques began to develop to link a suspect to a crime scene. At the turn of the twentieth century science began to allow Locard’s theory to become a working reality. For example, within the ‘culture of the trace’ it was the development of fingerprinting in the late nineteenth century that was of particular importance. As Heffernan observes, ‘Fingerprinting is the oldest and most established of the


49 A major reason for the desire of the state to begin ‘identifying’ individuals was as a result of the growing problem of criminality in the nineteenth century caused by rapid urbanisation. A number of commentators have argued that the state practice of identifying and documenting ‘habitual criminals’ and ‘suspect populations’ was founded during this period. An early example of a criminal identity archive, was the Habitual Criminal Register in the UK, which was introduced by the Criminals Act 1869. The purpose of the act was to record individuals who were ‘known’ to the police and who were thought likely to reoffend. See Williams R and Johnson P, Genetic Policing: The use of DNA in criminal investigations (Willan Publishing 2008), chapter 2. See also Caplan J and Torpey J (eds), Documenting Individual Identity: The Development of State Practices in the Modern World (Princeton University Press 2001); Cole S, Suspect Identities: A History of Fingerprinting and Criminal Identification (Harvard University Press 2001); McCartney C, Forensic Identification and Criminal Justice (Willan 2006); Higgs E, ‘The rise of the information state: the development of central state surveillance of the citizen in England 1500–2000’ (2001) 14 Journal of Historical Sociology 175–197.


51 Much of this culture of documentation and classification was a result of a changing concept of governmentality, moving away from a laissez-faire model of governance towards types of social welfare regime. See Joseph A and Winter A, ‘Making the Match: Human Traces, Forensic Experts and the Public Imagination’ in Spufford F and Uglow J (eds), Cultural Babbage: Technology, Time and Invention (Faber and Faber 1996), 93.

52 In the early nineteenth century, identification systems could only classify people in types, they could not be used to uniquely identify individuals. Systems included physiognomy (the attribution of mental qualities to facial structure) and phrenology (the attribution of moral and intellectual characteristics based on skull contours). See Cole S, Suspect Identities: A History of Fingerprinting and Criminal Identification (Harvard University Press 2001), chapter one.
forensic techniques for linking suspects to crimes and despite its investigative shortcomings is widely accepted as proof of identification.\textsuperscript{53}

The discovery of fingerprinting or dactyloscopy was a landmark innovation in human identification history.\textsuperscript{54} Champod and Chamberlain define a fingerprint as the ‘impression left by a friction ridge area of a finger’.\textsuperscript{55} The patterns can be divided into three main categories: arches, loops and whorls.\textsuperscript{56} The major strength of fingerprints is that the formulation of these ridge patterns is unique to each individual. While the exact discovery of fingerprinting is often subject to debate, most accept that it was the work of William Herschel that led to the first significant recognition of the potential benefits of fingerprinting as an identification system.\textsuperscript{57} However, the key breakthrough was in 1895 when eugenicist, Sir Francis Galton

\begin{footnotes}
\item[54] Prior to fingerprinting another identification system, known as anthropometry, was widely used as a means of identification. Discovered by Alphonse Bertillion in Paris during the 1870s, anthropometry or Bertillionage involved identifying individuals by measuring certain body parts, including head (length and width), the left foot, the middle finger, the ear and the chest. All of these measurements were recorded on a single card. While the system may seem cumbersome by today’s standards, it became widely used in a number of jurisdictions as a means of identification. Despite initial enthusiasm for the technique it soon began to fail, and was eventually replaced by fingerprinting in the early twentieth century. The main reason for the failure of the system was that it contained a number of inherent flaws. For example given the precise nature of the measurements, a significant level of expertise and experience was needed to produce consistent results, and consequently as the system spread results began to differ which led to an erosion of confidence in the technique. The death knell for the technique was the famous Will West case of 1903 in the US. In this case two men with the same name were found to have identical anthropological measurements; while, fingerprints were able to conclusively differentiate the two men. Although recent evidence has begun to cast doubt on the legitimacy of the Will West story. See Cole SA, “Fingerprint Identification and the Criminal Justice System: Historical Lessons for the DNA Debate” in Lazer D (ed), DNA and the Criminal Justice System: The Technology of Justice (MIT Press 2004), 66.
\item[55] The term ‘friction ridge skin’ denotes the skin at the tips of the fingers and thumbs, which comprises ridges and furrows. The skin type is also found on the palms, toes and soles of our feet. They are referred to as volar surfaces. See Champod C and Chamberlain P, “Fingerprints” in Fraser J and Williams R, Handbook of Forensic Science (Willan Publishing 2009), 57–58.
\item[56] Cole SA, “Fingerprint Identification and the Criminal Justice System: Historical Lessons for the DNA Debate” in Lazer, D (ed), DNA and the Criminal Justice System: The Technology of Justice (The MIT Press 2004), 66. These ‘ridge characteristics’ or ‘ridge patterns’ of fingerprints (similarly palm prints and footprints) are developed in the womb, Brogan describes the development process as follows: “During the fourth week of foetal development the limb buds start to form. During the fifth week the first traces of the hands and the feet can be seen. By the eighth week the distinction between the arm and forearm, the thigh and lower leg is apparent as well as the inter-digital clefts. At 10 to 11 weeks localised proliferations occur in the epidermis that eventually develop into primary ridges. Between 10 to 16 weeks the primary ridges continue to grow in an unpredictable fashion. Surface furrows begin to form. Between 16 and 24 weeks secondary ridges (also known as incipient or immature ridges) start to form. Various stresses cause unpredictable buckling of the ridges. No new primary ridges now form, the ridges are set for life and they continue to grow and mature.” See Brogan P, Identification: Investigation, Trial and Scientific Evidence (LAG 2004), 268.
\end{footnotes}
published a scientific paper entitled *Fingerprint Directories*.\(^{58}\) It was Galton’s paper that presented fingerprinting as a potentially useful criminal identification and detection technique. Importantly, Galton emphasised that a human fingerprint was unique to a particular person.\(^{59}\) Similarly to DNA profiling on its discovery, Galton’s theory, while extremely useful, was limited to solving singular crimes: i.e. police would only be able to utilise fingerprint evidence to link pre-established suspects to a particular crime scene. A key breakthrough occurred in 1897 when Sir Edward Henry, Inspector General of Police in Nepal and India, developed a means of classifying individual fingerprints.\(^{60}\)

This was an important milestone in the development of criminal identification. As Gerlach states, _Dactylography marked the beginning of the culture of the trace, the idea that unconscious detectable traces surround people and can be used to construct narratives explaining past events and the nature of an individual._\(^{61}\) In simple terms, the discovery of fingerprints allowed police to obtain involuntary evidence from a crime scene and to link this unique evidence to a particular individual. Once a classification system was identified, it allowed police to store large collections of fingerprints. The standard manual classification system, the _Henry System_, provided 1,024 primary classifications, with the 16 most common of those 1,024 primary classification categories being further subdivided into thousands of secondary, tertiary, major and minor sub-classifications.\(^{62}\) The development of computers in the latter stages of the twentieth century enabled police to store and search large


\(^{59}\) It is often mistakenly suggested that the first murder trial using fingerprint evidence occurred in Argentina in 1892. While investigating the murder of two young children, police confronted the mother with a bloody fingerprint, and she subsequently confessed. The fingerprint was not actually presented as evidence in court. See Chapman CL, _Dr. Vucetich: His Contribution to the science of fingerprints_” (1992) 42 Journal of Forensic Identification 288; Cole S, _Suspect Identities: A History of Fingerprinting and Criminal Identification_ (Harvard University Press, 2001), 128.


\(^{61}\) Gerlach N, _The Genetic Imaginary: DNA in the Canadian Criminal Justice System_ (University of Toronto Press 2004), 37.

collections of fingerprints against fingerprint databases. Brogan summarises the distinction between the manual Henry System and the modern computerised system:

The manual system is complex, permitting great power of discrimination. For computer classification purposes, the classification system is simplified and more computer friendly. Ten-fingerprint forms are divided into major classes by pattern type, then sub-divided into a number of sub-classes. Added sub-classifications further divide the collection. The classification system results in many thousands of classification groupings being possible. Scene marks are then searched against the force database.

The development of forensic identification databases redefined the reaction rationale of the criminal investigation process. Their importance is that upon the development of a database police were able to use fingerprints to actually shape an inquiry as opposed to just using it to confirm or exclude predetermined suspects. An example of such a system was the establishment of an automated fingerprint system in Scotland Yard in 1984. Between 1984 and 1998 this expanded to become the National Automated Fingerprint Identification System (NAFIS) in the UK. Developments in technology now allow fingerprints to be obtained electronically (so long as the device is approved under the relevant legislation). An example of this new technology is ‘Livescan’, which can electronically capture an individual’s fingerprint without ink. Handheld devices allow police to remotely obtain an individual’s fingerprint and directly compare the results against the NAFIS. If a matching fingerprint is already on file then the match is confirmed immediately. As a result of this new technology, there has been a dramatic expansion of individual fingerprints. In the UK in 2003 the Police Information Technology Association (PITO) revealed that there were approximately 4.5 million individuals stored on NAFIS: currently, the national databases held on the system consist of more than five million sets of prints ... by 2004, the system will be capable of holding 8.2 million sets of prints.

A recent PITO document released revealed that the database has expanded to over 7 million prints, approximately 12 per cent of the UK adult population.

64 Brogan P, Identification: Investigation, Trial and Scientific Evidence (LAG 2004), 270.
65 ‘Ten-print’ fingerprint forms are manually loaded onto the database and the fingerprints are classified. Each ‘ten-print’ record consists of ten fingerprints and two palmprints.
66 S 61 (8A) PACE.
population. Ireland has also established a fingerprint (and a palmprint) database; however, information on its content is currently not publicly available. The system is administered by the Technical Bureau in the Garda Síochána. In 2007 it updated its system to a new PRINTRAK Biometric System, replacing the Automated Fingerprint Identification System 2000. The Garda website notes the reason for the change: “the new system is at the cutting edge of fingerprint technology and is proving to be of great assistance in supporting crime investigations”.

The incorporation of fingerprinting into the criminal process was facilitated by rapid legal acceptance of the process involved in fingerprinting and of it as evidence adduced in a court of law. As Heffernan notes “the weight of authority in the common law world is that custodial fingerprinting is a ... legitimate investigative practice”. As Hand J notes in United States v Kelly, enabling the police to fingerprint an individual who has been lawfully arrested is “necessary, reasonable and proportionate”:

It is no more humiliating than other means of identification that have been universally held to infringe neither constitutional nor common-law rights. Fingerprinting is used in numerous branches of business and of civil service, and is not in itself a badge of crime. As a physical invasion it amounts to almost nothing,

---

70 See An Garda Síochána website for further information. Available at: http://www.garda.ie/controller.aspx?page=47. The website claims that the new system is being implemented in four phases: replacement of AFIS 2000 and upgrading Livescan machines (technology that allows the taking of a fingerprint without ink and that can be sent electronically); integration of AFIS with Garda National Bureau and Deployment of Mobile AFIS capability; integration of AFIS with PULIS (Gardai information system); and integration of AFIS with Interpol, Europol and the Police Service of Northern Ireland. The full implementation of the system was delayed by a dispute with civilian staff working for the Garda National Immigration Bureau. See Lally C, —Gillian staff set to end three-year dispute over €23 million fingerprint system” The Irish Times (6 February 2012).
71 Fingerprinting was first accepted in the US in 1910, in the trial of Thomas Jennings for the murder of Clarence Hiller. At the back of the house after the murder, four fingers of a left hand were located on a fresh painted railing. The court accepted the testimony of the four expert witnesses who claimed that the fingerprints were an exact match to the defendant. Jennings was ultimately convicted. Although he appealed, his conviction was upheld and he was executed on 16 February 1912. See People v Jennings, 96 NE 1077 (Ill 1911) For fascinating accounts of the rapid acceptance of fingerprint evidence see Mnookin JI, ―Fingerprint Evidence in an Age of DNA Profiling‖ (2001-2002) 67 Brook L Rev 13; Cole S, Suspect Identities: A History of Fingerprinting and Criminal Identification (Harvard University Press 2001); Beavan C, Fingerprints: The Origins of Crime Detection and the Murder Case that Launched Forensic Science (Hyperion 2001); Saks MJ, ―Merlin and Solomon: Lessons from the Law’s Formative Encounters with Forensic Identification Science‖ (1998) 49 Hastings LJ 1069.
73 Ibid.
and as a humiliation it can never amount to as much as that caused by the publicity attending a sensational indictment to which innocent men have to submit.\textsuperscript{74}

A similar view was asserted by La Forest J. in \textit{R v Beare}, noting that "the common law experience strongly supports the view that subjecting a person to being fingerprinted [upon lawful arrest] does not violate fundamental justice."\textsuperscript{75} Importantly from an Irish perspective, despite this common law acceptance of the practice and of evidence adduced from fingerprinting, it is has now been replaced under (or amalgamated into) statute: as Heffernan notes "the prevailing view is that the recording of fingerprints must be taken either with the suspect's consent or pursuant to statutory authority".\textsuperscript{76} The intricacies surrounding the taking of forensic samples (including fingerprints) will be subject to further discussion when discussing current issues within the Irish sampling regime in chapter seven.

Following the legal acceptance of fingerprinting and its widespread use and the proliferation of fingerprint databases, research continued into other forms of biometric identifiers. Researchers have often claimed that they have located better identification techniques than the ones currently dominating the market: "New techniques of criminal identification prove their value by identifying a specific group of people who have eluded older methods."\textsuperscript{77} For example in 1927, two American physicians criticised fingerprinting as "a method of only relative reliability, since the cutaneous ridges can be accidentally or wilfully spoiled by various scarrings".\textsuperscript{78} They suggested that an X-ray of an individual's skull was the most accurate and reliable way of identifying an individual. Their rationale was that it was extremely difficult to alter the shape of one's skull and that it was unusual for a corpse to be discovered without a head.

\textsuperscript{74} \textit{United States v Kelly} 55 F2d 67 2d Cir (1932), 70.
\textsuperscript{75} \textit{R v Beare} [1998] SCR 387, 388. See for example, \textit{People (AG) v McGrath} (1965) 99 ILTR 69; \textit{Adair v M'Garry} [1933] SLT 482; \textit{Callis v Gunn} [1963] 3 All ER 677, 681; although Heffernan notes that this finding has not received universal support, for example, Dumbell v Roberts [1944] 1 All ER 326 (per Scott LJ); \textit{R v AN} (1978) 2 CR (3d) 55 (BCCA) (per Branca JA). See Heffernan L, "The Recording of Fingerprints: Legal Aspects" (2006) 13(1) \textit{DULJ} 201.
\textsuperscript{76} Heffernan L, "The Recording of Fingerprints: Legal Aspects" (2006) 13(1) \textit{DULJ} 201. See also Walsh D, \textit{Criminal Procedure} (Thomson Round Hall 2002), 340.
Alternative biometric identification claims continue to be made and researched. For example, in recent years significant research has been conducted on the iris patterns of individuals. It was discovered that iris patterns (in both eyes) like fingerprints are unique. Impressively the iris has 266 measurable characteristics while fingerprints have only 40. However, it is important to differentiate between _trace_ and _non-trace_ biometric identifiers. Proponents of _skull X-rays_ and iris scans are correct when arguing that it is difficult to _alter_ such body parts. However, it is important to stress that while an individual may conceivably leave behind a skin cell, a fingerprint or a palm print at a crime scene, he or she is unlikely to leave behind an eyeball or a head! Therefore, while biometric databases containing _non-trace_ biometric identifiers such as iris scans (and more recently facial scans) are useful for identification purposes, they do not often provide the characteristic _silent witness_ at a crime scene of _trace_ evidence.

Various forms of _trace_ and _non-trace_ biometric measurements and identifiers have been housed on biometric identification databases, from Bertillon’s original anthropological measurements, to fingerprints, to palm prints, to the widely used iris and facial recognition databases today. The rationale for the separation of trace and non-trace evidence was illustrated above. However, for the purposes of this thesis, it is submitted that the sensitive information contained within a DNA sample (which will be elaborated upon below) separates the issues surrounding the taking and retention of DNA from other _trace_ biometric identifiers, such as fingerprints and palm prints. According to the Human Genome Project:

> DNA profiles are different from fingerprints, which are useful only for identification. DNA can provide insights into many intimate aspects of a person and their families, including susceptibility to particular diseases, legitimacy of birth, and perhaps predispositions to certain behaviours and sexual orientation.

---

79 Gerlach N, _The Genetic Imaginary: DNA in the Canadian Criminal Justice System_ (University of Toronto Press 2004), 38. Face recognition technology has also been subject to significant research in recent years. Face recognition technology measures fifty points around the nose, mouth, eyebrows, jaw and other facial areas and computers are configured to incorporate facial expression. Other biometric identifiers include voice recognition and palm print scanners.

80 Biometric identification technologies are being targeted primarily at civilian applications, which require authenticating a declared identity, rather than criminal applications, which require identifying an unknown person who may be employing an alias.

This increases the potential for genetic discrimination by government, insurers, employers, schools, banks and others.  

Similarly an extensive two year inquiry by the Australian Law Reform Commission and the Australian Health Ethics Committee of the National Health and Medical Research Council, also found a significant distinction between a DNA profile and a fingerprint:

Media and other accounts often suggest that DNA profiles are simply a modern form of fingerprint identification. In fact, DNA profiles differ from conventional fingerprints in several important respects. First, DNA holds vastly more information than fingerprints. A DNA profile can be used in establishing kinship relationships, and the sample from which the profile was obtained may hold predictive health and other information of a sensitive nature. Second, as genetic information is shared with biological relatives, an individual's profile might indirectly implicate a relative in an offence. Third, while it can be difficult to obtain fingerprints of such quality as to be useful in an investigation, DNA can be amplified from tiny and aged samples, and may be recovered from almost any cell or tissue.

While the taking of a fingerprint and a DNA sample give rise to a number of analogous issues (particularly surrounding collection and retention), given the sensitive material contained in a DNA sample it is submitted that while analogies to fingerprinting (and other trace identifiers) will be drawn where appropriate, this thesis will focus primarily on the issues surrounding DNA. In essence the difference between DNA and a fingerprint, is that a fingerprint would seem to be a 'two dimensional representation of the physical attributes of our fingerprints … useful only as a form of identification', whereas DNA (even in the form of a DNA profile) contains significantly more genetic information. As Gerlach observes:

Other forms of identification are powerful insofar as they involve something unique to the individual, but they do not contain a person's essence. DNA identification accomplishes the ultimate goal of the culture of the trace – it traps

---

82 US Department of Energy, Office of Science et al., DNA Forensics, Human Genome Project Information (12 January 2004).
an essential aspect of the individual who produced it, a map of a person’s fundamental characteristics.85

As a result of the information contained in a DNA sample, the identification technique of DNA profiling has become the most persuasive biometric identifier on the market today.86 Its development has significantly altered the biometric identifier landscape: “this new technology [DNA profiling] is not simply another form of biometric identification – rather, it is a new forensic paradigm with tremendous authority”.87 The reason for the dramatic rise of DNA identification technology is based on a number of factors: first, as already mentioned the majority of other biometric identifiers, excluding fingerprints, are not often or so readily discarded at a crime scene. Secondly, the other biometric identifiers are just that – identifiers. DNA identification is capable of delving into and revealing the very ‘essence’ of an individual. This raises the question: should we be concerned? Should we be concerned that we are potentially allowing the state to collect, access and retain our most intimate information? Or should we welcome the fact that technology has led us to a juncture where we can now objectively link individuals to crime scenes, through the slightest remnants of biological material that has been discarded? To address these questions, it is important to delve deeper into the science behind DNA, which will subsequently allow an informed examination and debate on the issues surrounding the collection, retention and use of DNA within the criminal process.

2.3. Introducing DNA

DNA stands for deoxyribonucleic acid. It is ‘the basic hereditary material, … [which] determines specific traits in organisms by guiding the production of specific polypeptide chains, one or more of which interact to form a protein molecule’.88 DNA is present in every cell89 in the human body; that is with the notable exception of red blood cells, which do not

86 Interestingly there are a number of commentators who note that this position is perhaps tenuous given the fact that other biometric identifiers, such as fingerprinting are still utilised more regularly during criminal investigations. For example, see Cole S, Suspect Identities: A History of Fingerprinting and Criminal Identification (Harvard University Press 2001), 292.
89 It is estimated that the human body consists of approximately 100,000,000,000,000 cells.
contain nuclei.\textsuperscript{90} We inherit half our DNA from our mother and half from our father, which results in an individual's DNA being unique, with the exception of identical twins, triplets and so forth (identical twins are derived from the same fertilized zygote (egg): therefore, they contain identical genetic information, i.e. DNA).\textsuperscript{91} The information or instructions contained in DNA (through the DNA sequences) is often referred to as an individual's 'blueprint for life', as each DNA molecule contains all of the information needed to produce a complete human body.\textsuperscript{92}

The study of DNA involves the overlap of a number of disparate fields: biology, technology and genetics. It is very much an area of study that is in its embryonic stage of development. Therefore from the beginning it is worth highlighting that it is questionable whether we should be using such sensitive material in the criminal process, particularly when a full understanding of the information contained within a DNA sample is yet to be known. Currently, the science of DNA is being subjected to extensive scientific scrutiny. For example, in 2003 the Human Genome Project completed the first complete sequence of the Human Genome.\textsuperscript{93} The project lasted 13 years, costing approximately $500 million dollars.\textsuperscript{94}

\textsuperscript{90} Blood samples contain white blood cells and platelets in which DNA is found Olby R, The Path to the Double Helix: The Discovery of DNA (General Publishing Co 1994), xxi.

\textsuperscript{91} Beaufort-Moore D, Crime Scene Management and Evidence Recovery (Oxford University Press 2009), 129.

\textsuperscript{92} It has also been described as an individual's coded 'future diary': Annas G, "Privacy Rules for DNA Databanks: Protecting Coded 'Future Diaries'" (1993) 270 Journal of the American Medical Association 2346.

\textsuperscript{93} See Human Genome Project Information. Available at: http://www.ornl.gov/sci/techresources/Human_Genome/home.shtml

\textsuperscript{94} To read the fascinating story about the race between private industry and government labs to decode the genome, see Shreeve J, The Genome War: How Craig Venter Tried to capture the code of life and save the world (Paw Prints 2008). The books offers a detailed account of the race to solve the world's greatest scientific
Recent developments have led to the human genome being sequenced in a fraction of the time and the cost.\textsuperscript{95} For example, in 2010 Professor Brendan Loftus of the Conway Institute in University College Dublin sequenced the first Irish DNA genome sequence. In contrast with the original human genome project, the Irish project was conducted with the resources of a small laboratory, lasting approximately 13 months at a cost of €30,000.\textsuperscript{96} Given the developments in technology and the substantial cost reduction involved, the possibility of accessing the human genome is no longer reserved for billion dollar research companies.\textsuperscript{97} It is therefore foreseeable that increased accessibility to the genome will result in an increased level of research, which will consequently increase our understanding of the role of the genetic sequences found therein.\textsuperscript{98} As a result of this increased level of exposure and research, it is worth reiterating the point that the content of the genome and the precise role of

---

\textsuperscript{95} Dr. Stephen Quake, Stanford engineer, has invented a new technology for decoding DNA and used it to decode his own genome for less than $50,000. Wade N, ―Cost of Decoding a Genome is Lowered‖ \textit{New York Times} (10 August 2009). Available at: \url{http://www.nytimes.com/2009/08/11/science/11gene.html}.\textsuperscript{96} This places the Irish genetic code in the public domain for the first time and permits it to be compared with mappings of the codes of other population groups. This is important as it is only by comparing the genome with other sequences that scientists can hope to isolate a specific “Irish genetic signature”, and to understand the genetic basis of our susceptibility to certain diseases. A principal reason for sequencing Irish DNA was that it was not represented in any of the large genomic studies under way in other jurisdictions. As Professor Loftus observes, “Certain gene variants can become locked in a population due to factors like geography. Irish people’s genes mirror the island’s peripheral location in Europe, which makes it an interesting subgroup to sequence ... some 13 per cent of the variation we uncovered has not been seen before. It’s likely that some of that variation is specific to the individual and some is more diagnostic of him being Irish.” Kennedy EB, ―Decoding of DNA may unlock the hidden medical histories of Irish lives‖ \textit{The Irish Times} (2 September 2010). Available at: \url{http://www.irishtimes.com/newspaper/ireland/2010/0907/1224278366129.html}.\textsuperscript{97} As of April 2010 Researchers have discovered 2,363 new DNA sequences corresponding to 730 regions on the human genome by using new approaches. These sequences represent segments of the genome that were not charted in the original human genome project. The original genome is referred to as the ‘reference genome’ (it originally comprised eight individuals), it provides a yardstick – or standard for comparison – for studies of human genetics. The reference genome was created in 2001 and is now regularly updated. The 1,000 Genomes Project (an international effort to fully sequence the genomes of a thousand anonymous individuals) and other genome studies are amassing massive amounts of data on DNA sequences that are then mapped to the reference genome. The continued study of the human genome will improve the completeness and quality of the reference genome; consequently it will unveil a fuller picture of the extent of human genomic variation. See “New DNA sequences discovered” \textit{Drug Discovery & Development} (21 April 2010). Available at: \url{http://www.dddmag.com/news-New-DNA-Sequences-Discovered-42110.aspx}.\textsuperscript{98} An example of recent discoveries on DNA See Institute Laue-Langevin (ILL). "Unlocking the secrets of DNA." \textit{Science Daily} (28 January 2011). Available at: \url{http://www.sciencedaily.com/releases/2011/01/110124120848.htm}\textsuperscript{.} DNA research has not been restricted to humans: DNA sequencing is also being conducted on plants and animals. For example, scientists recently sequenced the DNA sequence of chocolate or more corrected the cacao tree (the key ingredient for chocolate), under the guise of making chocolate healthier and ‘tastier’. The increasing role of private cooperation’s in genetic sequencing has been criticised as putting profit above ethical considerations. See Radowitz JV, ―DNA discovery could make chocolate even more irresistible‖ \textit{The Irish Examiner} (27 December 2010). Available at: \url{http://www.irishexaminer.com/world/kfeyaumhsngb/rss2/#ixzz11AyTPskL}.\textsuperscript{99}
our DNA sequences are still in the nascent stage of scientific development. Thus prudence would suggest we should be wary of utilising a developing technology whose key facts may remain to be discovered. Graeme Laurie, former advisor to the World Health Organisation, reflects on the sensitive information contained within an individual’s DNA:

Information concerning an individual’s genetic make-up is of a highly sensitive and personal nature. To discover that one is likely to develop a debilitating condition later in life or that this might be passed to one’s children must be an intense and possibly devastating experience. Exposure to such knowledge can alter self-perception and challenge notions of identity, and could adversely affect an individual in her social, professional, and familial milieu. The mere availability of genetic information serves to heighten concerns about the use to which it might be put, uses which might in turn compromise the person who has been tested ... Uniquely, genetic tests can also reveal information about blood relatives of the [individual], with a corresponding threat to their interests and their privacy. Family members might be loath to learn of a relative’s predisposition to a particular genetic condition, given the likelihood that they carry a similar risk.

However, despite this preliminary warning shot, the use of DNA within the criminal process in the form of DNA profiling would seem to have been well established. Vital to the growing role and legitimacy of DNA in the criminal process has been the rapid acceptance of DNA technology in a court of law. After the ‘DNA wars’ fought in the US court rooms in the late 1980s and early 1990s, DNA evidence is now widely accepted in a court of law. As Lynch et al note:

---

99 A working description of the genome and DNA profiling will be proffered in the next section.
101 In a seminal case in the US (People v Castro (1989) 545 NYS 2d 985 (New York Supreme Court), Jose Castro was accused of killing Vilma Ponce and her two year old daughter, Natasha. Mr. Castro’s DNA was found on the victim’s watch. Mr. Castro’s defence attorneys, Barry Scheck and Peter Neufeld, who subsequently created the Innocence Project, challenged the DNA evidence. They particularly scrutinised the collection and testing protocols that were in place to prevent the contamination of a DNA sample. In an interesting development, both the defence and prosecution counsels agreed to remove the DNA evidence from the case on the basis that the forensic laboratory involved (Lifecodes) had failed to implement proper safeguards and procedures to guarantee the integrity of a DNA sample. As Cole states “... the prosecution experts agreed to sacrifice the evidence in the Castro case for the long term good of the technique. Presented with this consensus, the judge ruled that DNA evidence was admissible in principle but excluded the evidence from the Castro Trial.” Cole SA, Suspect Identities: A History of Fingerprinting and Criminal Identification (Harvard University Press 2002), 297. See also State v Woodall 385 SE 2d 253 and Spencer v Commonwealth 384 SE 2d 775.
The legal history: rapid acceptance in the late 1980s, followed by challenges in the courts and science press from 1989 through the mid-1990s, followed by renewed acceptance at a stronger level. The initial credibility of DNA profiling can be attributed to an uncritical acceptance by scientists and the courts, while the later acceptance is often justified by noting that DNA profiling had ‘passed the test’ becoming a reliable scientific technique.\(^{102}\)

After similar extensive analysis in the UK, Lord Taylor CJ in \textit{R v Gorden} illustrated the acceptance of the technique by stating ‘we do not doubt the validity and value of DNA evidence in general’.\(^{103}\) The leading UK cases surrounding the admissibility of DNA evidence are \textit{R v Deen}\(^{104}\) and \textit{R v Doheny and Adams}.\(^{105}\) In \textit{R v Krager} in Australia, the reliability and accuracy of DNA profiling was accepted in the absence of proof to the contrary.\(^{106}\) In another Australian case in \textit{R v Pantoja},\(^{107}\) Hunt CJ commented that ‘DNA testing has been accepted by the courts for some years as an acceptable scientific technique for the identification of the source of bodily samples’. Similarly, in New Zealand the scientific reliability of DNA profiling was also accepted in \textit{R v Pengelly}.\(^{108}\) In Ireland, the reliability of DNA profiling technology was accepted in the \textit{People (DPP) v Mark Lawlor}.\(^{109}\) In the \textit{People (DPP) v Horgan} the appellant attempted to undermine the validity of the science behind the process. However, the court, after a lengthy trial, eventually upheld the science and adduced evidence from the process.\(^{110}\)

Despite the legal acceptance of DNA technology it is important to look beyond the ‘veil’ of this acceptance. As the following sections will elucidate despite the acceptance of the science behind the DNA profiling process the evidence adduced in court still continues to be subject to a myriad of legal challenges. For example, the use of DNA profiling within the


\(^{103}\) \textit{R v Gorden} (1995) 1 Cr App R 290.

\(^{104}\) \textit{R v Deen} (CA, 21 December 1993).


\(^{106}\) \textit{R v Krager} [2001] SASC 64.


\(^{109}\) \textit{People (DPP) v Mark Lawlor} (Central Criminal Court, 2 December 1995); (Court of Appeal 26 February 2001). See also Smyth M, ‘DNA in the Dock’ [1995] 2 (6) \textit{Lab Link} 1.

\(^{110}\) \textit{People (DPP) v Horgan}, unreported, (Irish Examiner, 25 June 2002).
investigative phase of the criminal process will be subject to a range of legal (i.e. evidential admissibility) and practical constraints.

Therefore, the following section and remainder of this chapter will attempt to present an introduction to the science and the procedures behind the DNA profiling and databasing process. The overview is intended as a basic introduction. It is not intended to be an exhaustive manual of the scientific and procedural issues involved but an introductory map within the context of this thesis. It is important to garner a working knowledge of the science and procedures involved in the DNA process to allow for reasoned and accurate discourse in the subsequent sections of the thesis.\textsuperscript{111}

\subsection*{2.3.1. DNA principles}

One of the mesmerising aspects of DNA is its sheer simplicity. The DNA molecule contains the complete genetic information of an organism, in the form of genetic sequences or codes known as the ‘genome’.\textsuperscript{112} Key developments in biology and principally genetics in the 1940s resulted in a number of exciting discoveries. During this period it became apparent that DNA was the principal factor in genetic hereditary: i.e. DNA retains and transfers genetic information from one generation to the next.\textsuperscript{113} This was verified in 1953, when James Watson and Francis Crick, at Cavendish Laboratory in Cambridge, England, revealed the structure of DNA.\textsuperscript{114} Each molecule of DNA consists of two strands which coil round each other to form a double helix, a structure analogous to a twisted ladder (the image one now habitually finds on the cover of textbooks or DVD box sets dealing with crime scene investigation).\textsuperscript{115} Each rung of the ladder consists of a pair of chemical groups known as bases joined together by hydrogen bonds.\textsuperscript{116} There are four types of bases (nucleo-bases): adenine, guanine, cytosine, and thymine, often referred to by their initial letters – A, G, C,
and T. A fundamental and vital aspect of DNA is that the two strands will only link according to a particular rule, referred to as the ‘complementary rule’. Specifically, A and T pair together while G and C pair together. For example, if the sequence on one strand is AGATTCTG then the opposite chain must have the sequence TCTAAGAC. As will be elaborated in a subsequent section it is the simplicity of the complementary rule that allowed DNA to become a useful biological identifier.

<table>
<thead>
<tr>
<th>Strand 1 - AGATTCTG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strand 2 - TCTAAGAC</td>
</tr>
</tbody>
</table>

DNA can broadly be divided into two distinct categories: ‘coding’ DNA and ‘non-coding’ DNA. It is important to briefly explain the difference. The fraction of coding DNA in the human genome is relatively small and constitutes approximately 1 to 2 percent of the molecule. The coding regions from one individual to the next are primarily identical as a result of selection pressures that occur during evolution to maintain their specific function:

118 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. The structure of DNA itself shows that it is suited to 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. 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 this specific sequence of bases which constitutes the genetic information. See Semikhodskii A, Dealing with DNA Evidence: A legal Guide (Routledge 2007), 4.
119 The coding section of the DNA provides instructions for the creation and application of genes. A gene is the unit of inheritance, a segment of the genetic material that determines the inheritance of a particular genetic trait or characteristic, such as hair/eye colour or susceptibility to a particular disease. Genes, however, appear to be concentrated in random areas, or ‘loci’, along the genome, with vast stretches of non-coding DNA sequences in between. Essentially, genes are a particular sequence of base pairs along the DNA strand. The length or sizes of genes vary, but the average gene consists of 3,000 bases. 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. 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 approximately 30,000–40,000. Semikhodskii A, Dealing with DNA Evidence: A legal Guide (Routledge 2007), 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.
one may say that it is the _coding DNA_ that essentially makes us human.\textsuperscript{120} The remaining DNA is referred to as _non-coding DNA_ and is thought to have either no function or the function is not yet identified.\textsuperscript{121} These regions are often described as _genetic junk_ as the sequences in these areas mutate more rapidly from one generation to the next without affecting the function of the DNA or organism.\textsuperscript{122} Although given the developing nature of DNA technology commentators are becoming increasingly reluctant to refer to these regions as _junk DNA_: as Steinhardt argues _I reject the term _junk DNA_” because as the Human Genome Project and other studies continue, those loci may well turn out to contain other useful genetic information”.\textsuperscript{123} Despite the developing disputes over terminology the reason why these regions are important is that the majority of mutations in the non-coding areas are usually transmitted to the offspring, resulting in a vast increase in genetic variability. It is also in the non-coding areas that _hyper-variable regions_ can be found: in other words where there is a high degree of variation between individuals (the importance of these _hyper-variable_ regions will become apparent when discussing the science behind the DNA profiling process).\textsuperscript{124}

To delve deeper into the exact location of DNA, it is useful to utilise an analogy. Finding the DNA of an individual can be likened to a Matryoshka Doll. A Matryoshka Doll is a Russian nesting doll which consists of a set of dolls of decreasing sizes one inside the other. The human body has a similar dynamic: it comprises approximately 100 trillion cells; inside each cell (except red blood cells) is a nucleus (brain of the cell); inside the nucleus is genetic material known as chromosomes; contained within the chromosomes is the complete genetic sequence of an individual known as a genome; inside the genome is DNA; DNA can be split into coding and non-coding DNA; while a DNA profile is derived from predetermined points (loci) from the non-coding section of the DNA.

\textsuperscript{120} LRC Consultation Paper, \textit{Law Reform Commission Consultation Paper on the Establishment of a DNA Database} (LRC CP 29 – 2004), 16.


A DNA sample has been described as a person’s ‘blue print to life’, it contains an individual’s most sensitive and intimate information such as family relationships, ethnicity, susceptibility to disease and potential behaviour patterns. And it has been referred to as the ‘coded future diary’. As technology continues to develop the DNA code will continue to be broken revealing more about present realities and future possibilities. Consequently, access and retention of an individual’s DNA sample present considerable ethical and normative issues not just for the criminal justice system but also for society itself. Importantly though from the perspective of this thesis (i.e. the use of DNA in the criminal process), it is the non-coding regions of DNA that are used during a DNA profiling process. This is important because currently it is believed that the non-coding area of the genome does not contain or reveal discernible genetic characteristics, such as susceptibility to disease, thereby alleviating a number of the potential ethical arguments against the use of DNA profiling within the criminal justice system. As Butler notes DNA markers ... are in non-coding regions of the DNA and are not known to have any association with a genetic disease or any other genetic predisposition. Thus, the information in the database is only useful for human identity testing.

2.3.2. DNA profile

DNA profiling refers to the process of identifying individuals through their DNA. It was discovered in 1984 by British geneticist, Sir Alec Jeffreys at the University of Leicester.

---

125 See Manuel VM, “State DNA database and Data bank expansion laws: Is it time for California to expand its DNA data base law to include all convicted felons?” (2003-2004) 31 W St UL Rev 339.

126 For an interesting analysis of genetics and criminal behaviour see Anderson GS, Biological Influences on Criminal Behaviour (CRC Press 2007).


128 Butler JM, Fundamentals of Forensic DNA Typing (Academic Press, Elsevier 2010), 279. The issues surrounding the retention of a DNA sample or DNA profile will be examined in chapter five and six.

While conducting medical research and examining various DNA sequences within genes, Jeffreys observed basic building blocks made of repeated sequences within the DNA which were 10 or 15 bases long.\textsuperscript{130} He isolated two of these blocks, mass-produced them and made them radioactive. Labelling these regions as hyper-variable regions', Jeffreys began to examine whether these regions were similar among individuals.\textsuperscript{131} Samples were taken from members of a family to determine whether this method could reveal the relationships. The hyper-variable regions appeared as dark bands in columns against a white background on an X-ray film.\textsuperscript{132} 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.\textsuperscript{133}

In reality Jeffreys discovered this new identification technique by accident. His research had been attempting to locate unique genetic markers that would identify familial lineages and hereditary indicators, similar to Galton's fingerprint research almost a century earlier. As Cole explains:

Like Galton, Jeffreys initially had little interest in identification; he was pursuing a far loftier goal – the ability to render inheritance visible, using the late-twentieth-century biological marker, the fingerprint. And like Galton, Jeffreys, in his pursuit of hereditary markers, had almost accidently stumbled across a new identification technique.\textsuperscript{134}

Jeffreys realised immediately that his discovery could be utilised as a means of identification. Although, initially it was thought that its main benefit would be not for criminal investigation but for controlling immigration.\textsuperscript{135}

\textsuperscript{130} Lynch M, ―God's signature: DNA profiling, the new gold standard in forensic science‖ (2003) 27 (2) Endeavour 93, 94.


\textsuperscript{134} Cole S, Suspect Identities: A history of Fingerprinting and Criminal Identification (Harvard University Press 2001), 289.

\textsuperscript{135} Jeffreys AJ, Turner M and Debenham P, ―The Efficiency of Multilocus DNA Fingerprint Probes for Individualisation and Establishment of Family Relationships, Determined from Extensive Casework‖ (1991) 48 Am J Hum Genet 824–840. In Britain at the time a law allowed immigrant children to be united with their parents who were living legally in the UK. See Saad R, ―Discovery, development and current applications of DNA identity testing‖ (2005) 18(2) Proc (Bayl Univ Med Cent) 130–133; McKie R, ―Eureka moment that led to the discovery of DNA fingerprinting‖ The Observer (24 May 2009). See also Jeffreys AJ, Brookfield J and
However, given the technology's ability to differentiate between two DNA samples, its potential use for criminal investigation became quickly apparent. As was documented in chapter one, its first recorded use was in playing a central role in the apprehension of the ‘Black Pad’ murderer, Colin Pitchfork, in the mid 1980s. The logic behind its use is identical to the Locard principle of exchange theory postulated over a century ago, that a crime scene or a victim may contain biological or trace evidence that can be used to link the perpetrator to the crime. Therefore its potential to both rapidly link and exclude suspects during a criminal investigation became an exciting possibility.

Since its discovery and initial use in forensic investigation DNA profiling has been subject to rapid development. The choice of profiling technique now depends on the type of sample available (e.g. mixed sample) or the quantity or quality of the sample. There has been a significant evolution and progression of DNA testing techniques and marker systems. The rise and fall in popularity of different marker types reflects continuous improvement of technology and the changing methodology of the way genetic variation is examined and assessed. New profiling techniques supersede old ones in terms of information obtained, reliability of interpretation and cost.

The original DNA profiling technique, discovered by Jeffreys, namely Restriction Fragment Length Polymorphism (RFLP) was quickly replaced by Multi-Locus Profiling (MLP) and

Semeonoff R, ‘Positive identification of an immigration test-case using human DNA fingerprints’ (1985) 317 Nature 818–819. Problems arose though with the large number of immigrant children attempting to claim entry status under this rule. As a result, UK immigration began to tighten its immigration protocols. This began to stem the entry of ‘bogus’ parental claims; however, it also began to create difficulties for those entitled to entry under the law as they encountered difficulty verifying their biological relationship to their parents. In 1985, Jeffreys applied the new identification technique in an immigration case involving a dispute between a Ghanaian boy and immigration. Cole SA, Suspect Identities: A history of Fingerprinting and Criminal Identification (Harvard University Press 2001), 291. Immigration claimed that the individual was not a son of the Ghanaian woman but a nephew, so thereby he was not entitled to enter the country. However, Jeffreys new technique proved that the individual was in fact the son of the Ghanaian woman and was entitled to British residency. For further details on this case see Wambaugh J, The Blooding (Bantam 1989), 86–95.

138 RFLP was the first DNA profiling technique used in forensic science. In this technique DNA is extracted from samples and cut by a sequence-specific enzyme (‘restriction enzyme’) before being separated by electrophoresis on an agarose gel on the basis of molecular weight. After being transferred by capillary action (‘blot technique’) to a nylon membrane the polymorphic mini-satellite regions of the DNA are then examined by the addition of radioactively labelled pieces of a single-stranded DNA – referred to as ‘probes’. See Interpol Handbook on DNA Data Exchange and Practice: Recommendations from the Interpol DNA Monitoring Expert Group (2009), 90. A probe binds to its complementary sequence on the membrane, allowing it to be seen and compared with standards when the membrane is exposed to X-ray film. VNTR, also referred to as ‘minisatellites’, was the first marker system successfully used for human identification. Discovered by Jeffreys in 1984, VNTRs are short identical segments of DNA aligned head to tail in a repeating fashion. They are interspersed in the human genome but often clustered near the end of chromosomes. The most common method of VNTR analysis uses Restriction Fragment Length Polymorphism (RFLP) to uncover genetic variation. This
Single Locus Profiling (SLP). These original profiling techniques were highly accurate ways of linking a DNA profile from a crime scene to a comparator sample. However, they were unsuitable for widespread use in criminal investigation because of the large quantities of biological material needed for analysis and both the time and recourse costs involved in the profiling process. Therefore because of the potential benefits of DNA profiling to the criminal investigation process major investment was made in producing an automated and quicker DNA profiling system. This resulted in the development of PCR (Polymerase Chain Reaction) based DNA marker systems, such as STR (Short Tandem Repeats) which enabled automation of the DNA profiling process. PCR is crucial for modern profiling techniques. It has been likened to a photocopier; it utilises the concept that DNA has the ability to replicate itself. The relevant DNA sequences are identified and PCR then copies these specific parts of the DNA molecule, resulting in large amounts of identical copies of the

method of detection is founded on the ability of certain enzymes, called restriction enzymes, to recognise and cut a specific DNA sequence. The resultant small DNA fragments are then separated on a gel under electric current by the process of DNA electrophoresis. After the separation the DNA fragments are transferred onto a nylon membrane and made visible by a radioactively labelled DNA probe which has a homologous sequence to the fragment of interest and under special conditions, recognises and binds to it. See Cohen J, –DNA fingerprinting for forensic identification: potential effects on data interpretation of subpopulation heterogeneity and band number variability” (1990) 46(2) Am J Hum Genet 358, 359; Martin PD, Schmitter H and Schneider PM, –A brief history of the formation of DNA databases in forensic science within Europe” (2001) 119 Forensic Sci Int 225–231. Although VNTR was a very useful DNA marker system it had several disadvantages which limited its application. Radioactively labelled DNA probes are usually used for detecting VNTR, so special premises equipped for radioactive work are needed. It usually takes several days or even weeks to obtain a VNTR profile. The technology also relies on starting with a large volume of biological material and good quality DNA. Both these requirements are rarely met by samples collected at crime scenes. While effective at producing highly discriminating patterns, VNTR genotyping technology is slow, cumbersome, manual and cannot be automated.

Early profiling techniques involved the simultaneous analysis of minisatellite regions of the DNA. Referred to as Multi Locus Probes they resulted in Multi Locus Profiles. This profiling technique required large amounts of DNA, (approximately two micro grams) (see Interpol Handbook on DNA Data Exchange and Practice: Recommendations from the Interpol DNA Monitoring Expert Group (2009), 90). Unfortunately criminal investigations often result in only being able to locate small amounts of DNA and often such samples contain mixed DNA; consequently Multi-Locus Profiling was largely unsuited to the majority of criminal investigations. MLP was replaced by Single Locus Profiling in the early 1990s. Differing from MLP, which analysed serious regions of a DNA sample simultaneously, SLP analysed one point (locus) on the human genome. The frequency of each DNA sequence located is estimated from a population database. Results are based on probability. To increase the chance of discrimination (the likelihood that another individual has the same DNA profile), the process has to be repeated using probes for additional loci. Unlike, MLP, SLP methods can be used on mixed samples and low quantities of DNA, thereby making it more applicable for criminal investigations. However, it still needs large quantities of DNA compared with today’s standards (approximately, 0.5 to 1 micrograms) (see Interpol Handbook on DNA Data Exchange and Practice: Recommendations from the Interpol DNA Monitoring Expert Group (2009), 90).

139 Early profiling techniques involved the simultaneous analysis of minisatellite regions of the DNA. Referred to as Multi Locus Probes they resulted in Multi Locus Profiles. This profiling technique required large amounts of DNA, (approximately two micro grams) (see Interpol Handbook on DNA Data Exchange and Practice: Recommendations from the Interpol DNA Monitoring Expert Group (2009), 90). Unfortunately criminal investigations often result in only being able to locate small amounts of DNA and often such samples contain mixed DNA; consequently Multi-Locus Profiling was largely unsuited to the majority of criminal investigations. MLP was replaced by Single Locus Profiling in the early 1990s. Differing from MLP, which analysed serious regions of a DNA sample simultaneously, SLP analysed one point (locus) on the human genome. The frequency of each DNA sequence located is estimated from a population database. Results are based on probability. To increase the chance of discrimination (the likelihood that another individual has the same DNA profile), the process has to be repeated using probes for additional loci. Unlike, MLP, SLP methods can be used on mixed samples and low quantities of DNA, thereby making it more applicable for criminal investigations. However, it still needs large quantities of DNA compared with today’s standards (approximately, 0.5 to 1 micrograms) (see Interpol Handbook on DNA Data Exchange and Practice: Recommendations from the Interpol DNA Monitoring Expert Group (2009), 90).

140 Gill P, Fereday L, Morling N and Schneider PM, –The evolution of DNA databases –Recommendations for new European STR loci” (2006) 156 (2) Forensic Science International 242–244. Although traditional profiling techniques are no longer used by accredited UK, US and European forensic laboratories, results obtained by this system before the advent of STR genotyping are occasionally presented by the prosecution in cases when a link between a defendant and a crime committed before 1994 or 1995 is alleged. Semikhodskii A, Dealing with DNA Evidence: A legal Guide (Routledge 2007), 14.

relevant DNA sequences.\textsuperscript{142} The result of this technology has been that it increases the amount of DNA available for testing and enables even very small stains obtained from a crime scene to be tested successfully.\textsuperscript{143} As a result, ‘trace’ biological samples obtained from cold cases are now capable of being re-examined for a DNA profile.\textsuperscript{144}

STR profiling is a method which uses the PCR technique to target short sequences of DNA. Modern commercial kits analyse between 10 and 16 loci (\textit{loci} are specific points on an individual’s DNA sequence). Therefore a STR profile is essentially a ‘snapshot’ of an individual’s entire DNA sequence.\textsuperscript{145} In Ireland and the UK the current STR (PCR) profiling technology used is called SGM Plus and consists of 10 particular points (loci).\textsuperscript{146} To see the reason why forensic science moved to using STR over the traditional profiling methods (RFLP, SLP and MLP methods), one only need examine the quantities of DNA required to perform STR analysis. To obtain reliable results as little as 10–20 picograms of DNA (one picogram is equal to one thousand billionth of a gram) are needed.\textsuperscript{147} STR profiling techniques are also extremely useful for dealing with mixed samples. Add to this its ability to produce highly discriminating results (based on statistical probability) for a full DNA profile and the compatibility of these statistical results with an automated system, make it an extremely powerful tool for criminal investigation.\textsuperscript{148} Currently, there are three further DNA profiling techniques that may be utilised in particular criminal investigations: these are SNP,\textsuperscript{149} mitochondrial DNA (‘mtDNA’\textsuperscript{150}) and Y chromosome analysis.\textsuperscript{151} However, for a

\textsuperscript{142} For a detailed explanation of the PCR process see Butler JM, \textit{Fundamentals of Forensic DNA Typing} (Academic Press, Elsevier 2010), chapter 7.
\textsuperscript{144} Developing technology such as LCN DNA profiling is now capable of deriving DNA profiles from minute biological samples. The concerns involved with these ‘trace’ developments will be discussed further towards the end of this chapter.
\textsuperscript{146} It has been used since June 1999, for profiling DNA samples on the NDNAD. It looks at 11 areas (10 areas plus a sex indicator area) to give a DNA profile. The average discrimination potential for an SGM Plus is one in a billion. See UK Forensic Science Service: Fact Sheet, available at: http://www.forensic.gov.uk/pdf/company/foi/publication-scheme/communications/What_is_DNA.pdf.
\textsuperscript{147} Interpol Handbook on DNA Data Exchange and Practice: Recommendations from the Interpol DNA Monitoring Expert Group (2009), 90.
\textsuperscript{148} A choice of kits is available for STR analysis. See Appendix 2 for a table outlining a list of the currently available STR kits. Information for table obtained from Interpol Handbook on DNA Data Exchange and Practice: Recommendations from the Interpol DNA Monitoring Expert Group (2009), 92.
\textsuperscript{149} A new class of DNA marker, known as single nucleotide polymorphisms (SNPs) or ‘snips’ has been generating significant interest among forensic scientists. They have several properties that make them particularly attractive for genetic and forensic studies. SNPs are more frequent than traditional STR markers or ‘micro satellites’. Because of the large quantity of SNP’s it enables analysis of highly degraded DNA samples when STR genotyping would normally fail to produce results. SNPs are also cheaper to analyse than STR and are especially suitable for highly automated testing. However, a disadvantage of SNP markers is poor performance when working with mixed DNA samples, which are often the type of samples obtained from a
number of reasons (including lack of resources, lack of appropriate equipment and lack of demand for these procedures) at present none of these techniques are undertaken by the Forensic Laboratory in Ireland.\(^\text{152}\)

An examination of a crime scene may reveal biological sources (such as bodily fluids, skin cells and hair follicles) all of which now allow a DNA profile to be generated.\(^\text{153}\) However, the success of generating a useful DNA profile from any biological sample relies significantly on the biological sample involved.\(^\text{154}\)

---

\(^{150}\)DNA is found in the nucleus of each cell; however, a small amount of DNA is also present outside the nucleus and within each cell, in small structures known as mitochondria; these structures provide energy to the cells. The advantage is that there are numerous copies of mtDNA present in a cell and they are minute compact molecules with significantly few coding regions, and are less susceptible to degradation. Where nuclear DNA has degraded and broken down, it may still be possible to find sufficiently intact elements of the mtDNA. See Hageman C, Prevett P and Murray W, *DNA Handbook* (Butterworths Canada Ltd 2002), 35. However, mtDNA is solely maternally inherited: therefore mothers, their children, full siblings, maternal half-siblings, maternal cousins and all on the maternal line will have an identical mitochondrial pattern. Also, because mtDNA is much shorter in length than nuclear DNA, there are significantly 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. See FSS website: [http://www.forensic.gov.uk/forensic/foi/foi_docs/41L_Mitochondrial.pdf](http://www.forensic.gov.uk/forensic/foi/foi_docs/41L_Mitochondrial.pdf)\(^\text{151}\)

\(^{151}\)This method is most useful in cases where male DNA is overwhelmed by an excess amount of female DNA: therefore it is particularly useful in analysing certain mixed samples. Gill *P et al.*, “DNA Commission of the International Society of Forensic Genetics: recommendations on forensic analysis using Y-chromosome STRs” (2001) 114(6) International Journal of Legal Medicine 305, 305. 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, in which case 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 to only his male offspring. Although, as there is no clear distinction between paternal lines, i.e. brothers, fathers and sons, it will give an indication of the source of the sample and perhaps narrow the field to a certain degree, Y chromosome testing will not allow for the same level of individualisation as STR testing. See further Hageman C, Prevett P and Murray W, *DNA Handbook* (Butterworths Canada Ltd 2002), 37–38.\(^\text{152}\)

\(^{152}\)Information garnered through contact with the Director of the State Laboratory in Ireland.


\(^{154}\)For example, a blood stain on most surfaces has a 90% chance of generating a DNA profile. Contrast the impact of saliva on differing surfaces: saliva on a balaclava has a success rate of 43%, but on a cigarette butt it is 67% while on a plastic utensil it has a success rate of 17%. See Law Reform Commission, *Consultation Paper on the Establishment of a DNA Database* (LRC CP 29 – 2004), 26. Hairs have only a 25% chance of producing a DNA profile (this is because hair that falls out is dead at the roots). In contrast, hair that is plucked has a much better success rate. See New South Wales Legislative Standing Committee on Law and Justice, *Review of the Crimes (Forensic Procedures) Act 2000* (Report No. 18, 2000), para 2.15.
The ability to find DNA on a crime scene is potentially extremely useful for a criminal investigation. Its primary benefit stems from its capability of providing the silent witness: the ability to match DNA found at a crime scene or obtained from a victim to a comparator sample obtained from a suspect. For pre-trial investigation it is particularly useful for expediency and accuracy purposes: i.e. it enables police to rapidly include or exclude individuals from an investigation. As evidenced in the Pitchfork case it provides a level of objectivity and a bulwark against potential miscarriages of justice created by mistaken forms of traditional evidence (such as eyewitness testimony or forced confessions).

Unsurprisingly given the success and potential of DNA profiling in aiding criminal investigation (in particular in its ability to solve signal crimes), there has been a rapid increase in the adoption of DNA profiling technology within the criminal process around the globe. A 2009 Interpol report documented that of 188 Interpol member countries 120 now regularly utilise DNA profiling during criminal investigation.

2.4. DNA Database

Despite a number of early success stories involving DNA profiling, similar to fingerprinting, it was not until the development of an automated database system that it began to illustrate its true potential for criminal investigation. In effect before the introduction of a database, DNA profiling was similar to other types of trace evidence gathered from a particular crime scene. It formed part of the traditional reactive police approach to solving a criminal offence: i.e. police obtained a DNA sample from a crime scene, a DNA profile was then derived from the sample and it was then compared with samples from individual suspects who had been identified through traditional methods of investigation.

The Interpol handbook provides a wide variety of sources from which a DNA sample may now be gathered: for example, bite marks, bed linen, utensils, door knobs, clothes, envelopes. As technology develops the areas from which to source DNA will continue to develop. For a full list see Interpol Handbook on DNA Data Exchange and Practice: Recommendations from the Interpol DNA Monitoring Expert Group (2009), 23.


In order to garner a global overview of the use of DNA profiling in criminal investigation, Interpol has conducted three surveys among its 188 member countries since 1999; the latest survey, completed in 2009, contains replies from 172 member countries and 120 of those countries reported utilising DNA during criminal investigation. Interpol Handbook on DNA Data Exchange and Practice: Recommendations from the Interpol DNA Monitoring Expert Group (2009), 52.
This dynamic began to change with the development of PCR STR profiling techniques in conjunction with the ability to create an electronic representation of a DNA profile which could be loaded on to an automated database system.\textsuperscript{159} Essentially, a _DNA database is a repository of DNA profiles which have been obtained from the relevant DNA samples_.\textsuperscript{160} While the concept of identification databases is over a century old, it is the speculative, searching capacity of modern computerised databases that creates the appeal of a DNA database.\textsuperscript{161} As Wilson and Johnston state:

the subsequent ability to construct digital representations of profiles and store them in continuously searchable computerised databases, together with widening police powers to take and retain biological samples from individuals, has made possible a vastly expanded role for DNA profiling. In particular, police investigators are now able to apply this technology inceptively rather than reactively.\textsuperscript{162}

Therefore, similar to other _trace_ or forensic identification databases, DNA databases allow police to _shape an inquiry_. Instead of using a DNA profile to purely confirm or exonerate a suspect after traditional policing methods have identified an individual: it allows police to begin an investigation from the premise of a _hit_. A hit or a _match_ will be established once the biometric identifier taken from the crime scene or victim locates a match on the database retaining previously obtained biometric identifiers.\textsuperscript{163} Developments in technology have allowed forensic laboratories and the police to derive biometric identifiers such as DNA

\begin{footnotes}
\footnote{Semikhodskii A, \textit{Dealing within DNA evidence: A legal guide} (Routledge 2007), 12.}
\footnote{See Butler JM, \textit{Fundamentals of Forensic DNA Typing} (Elsevier 2010), 262.}
\footnote{Databases date back to the _rogues galleries_ of photographs used in the nineteenth century, the _signaletic_ cards developed by Alphonse Bertillon in Paris and the fingerprint classification systems developed in India and Argentina. See Cole S, \textit{Suspect Identities: A History of Fingerprinting and Criminal Identification} (Harvard University Press 2001).}
\footnote{The words _match_ and _hit_ are sometimes used in different ways. For example, the Dutch police use the word _match_ if DNA-profiles of crime related stains are identical and the word hit if a DNA-profile of a crime related stain is identical to a DNA-profile of a reference sample. Alternatively, in the US the word _match_ is used if two DNA -profiles in the CODIS DNA-database (the American database system) correspond to each other and the word _hit_ is used if a match is confirmed by a DNA expert. This thesis adopts the ENFSI (European Forensic Science Institute) definition, which does not differentiate between a _hit_ and a _match_. The ENFSI report defines a _Hit/Match_: as —A confirmed match between DNA profiles discovered by a database search at a single instant in time. It can be stain to stain or stain to person._ See ENFSI DNA Working Group: Review and Recommendations (October, 2011), 19. In this thesis the word _match_ will be primarily used.}
\end{footnotes}
profiles from a dramatically larger array of crime scene samples, thereby providing police with a potentially valuable policing mechanism.\footnote{164}

First it is important to clarify what exactly is a DNA database. One of the criticisms that can be levied at the discourse in this area is the interchangeable nature of the terminology used by politicians and the media. This is a concern as the terminology involved refers to fundamentally differing issues. For example, in its 2002 report, \textit{Inside Information: Balancing interests in the use of personal genetic data}, the UK’s Human Genetics Commission notes the common confusion between a DNA sample and a DNA profile:

\begin{quote}
It is worth noting that many responses [to the HGC’s consultation] drew no distinction between the DNA profile (the numbers stored on the National DNA Database] and the original sample provided by a suspect or volunteer. We believe that there are important distinctions to make between these two seemingly interchangeable terms. The DNA profile contains a very limited amount of what we consider to be personal genetic information. With some possible minor exceptions, it does not contain any predicative information about a person’s likelihood of future disease. It does, potentially, enable conclusions to be drawn about parentage or relationships, but only if it is compared to other identifiable samples. On this basis, it does not appear to constitute ‘sensitive genetic information’... the sample on the other hand contains the full genetic information of the individual and it would be possible to derive information about that person and about others. It therefore has the potential to be used to generate personal genetic information. It should also be subject to the normal considerations of respect for persons, such as privacy and confidentiality.\footnote{165}
\end{quote}

\footnote{164} For a list of sources from which DNA can now be derived see \textit{Interpol Handbook on DNA Data Exchange and Practice: Recommendations from the Interpol DNA Monitoring Expert Group} (2009), 23. Butler describes process of obtaining a match on the US database: ‘When CODIS identifies a potential match, the laboratories responsible for the matching profiles are notified and they contact each other to validate or refuse a match ... after the match has been confirmed by qualified DNA analysis, which often involves retesting of the matching convicted offender DNA sample, laboratories may exchange additional information, such as names and phone numbers of criminal investigators and case details. If a match is obtained within the Convicted Offender Index, the identity and the location of the convicted offender is determined and an arrest warrant is produced.’ See Butler JM, \textit{Fundamentals of Forensic DNA Typing} (Elsevier Academic Press 2010), 439 \footnote{165} See Report by Human Genetics Commission, \textit{Inside Information: Balancing interests in the use of personal genetic data} (May 2002), chapter 10. A summary of the report is available at: \url{http://www.hgc.gov.uk/UploadDocs/Contents/Documents/iintroduction.pdf}.}
Given the sensitive nature of the issues involved it is vital that a clear public understanding of the various repositories is achieved. Thus, two frequently misquoted and interchanged terms are the concept of a ‘DNA database’ as opposed to a ‘DNA databank’. Importantly, the content of a DNA database is vitally different from the content of a DNA databank: as Butler states, ‘A [DNA] database is a collection of computer files containing entries of DNA profiles that can be searched to look for potential matches.’ The DNA profiles are derived from the DNA samples obtained from crime scenes or designated individuals. A DNA databank is a collection of the original DNA samples. As outlined earlier, a DNA sample contains an individual’s entire genetic information. Therefore the retention of biological samples is, unsurprisingly, a more controversial issue.

In relation to a DNA database, the profiles are stored electronically on an automated system which can be speculatively searched against DNA profiles obtained from crime scenes. The potential benefits of a database are manifold: inter alia for, identifying links between crime scenes, for identifying serial offenders, for the rapid inclusion or exclusion of individuals following a speculative search of the database (the ‘cold hit’ where a speculative search matches an individual on the database). The importance of the cold hit is that it can help resolve crimes where the police have no prior suspects: i.e. it will create a line of inquiry for police that would not have previously existed. Thus in short, the primary rationale behind a DNA database is that a search is conducted on the basis of attempting to match an unknown crime scene profile to existing known profiles retained on the database. This process can


167 A third database is also mentioned as a DNA database, specifically a population database. A population database is ‘Information on allele frequencies from a group or groups of representative samples is included in a population database.’ Again, this refers to a collection of DNA profiles. A population database is not directly used for identification or matching purposes during a criminal investigation. Instead, it is used to estimate random match probabilities based on allele frequency measurements from a group of usually 100 or more individuals selected to represent a specific group of interest.’ Butler JM, *Fundamentals of Forensic DNA Typing* (Elsevier 2010), 262. The individuals from whom DNA profiles are generated for use in a population database are completely anonymous and only classified and grouped by their self-identified ethnicity. In the US, the CODIS software, a computer program known as Popstats, performs the match probability calculations using allele frequencies from a previously typed set of samples the STR profiles of which comprise the various classifications of the population database. (e.g. African American, Caucasian). Match probabilities, using allele frequencies, are used to calculate the strength of DNA evidence where the profile obtained from the crime scene corresponds with the suspect’s profile. In essence, match probability calculations answer the question, ‘what is the probability that someone other than, and unrelated to, the suspect, has this same DNA profile?’ Butler JM, *Fundamentals of Forensic DNA Typing* (Elsevier 2010), 262.

168 The issue will receive further consideration in chapter five.

equally be done the other way around: i.e. search a suspects DNA against the unknown crime scene profiles. As the Law Reform Commission observes: “the primary aim of any DNA database is to link individuals to unsolved offences and unsolved offences to each other by means of DNA profiling”.\textsuperscript{170} It is beneficial because:

In the absence of a DNA database, DNA profiling can only be useful once police have identified a suspect through traditional investigative means. With a DNA database, the investigative process itself becomes more effective and efficient. 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 be expended on time-consuming door-to-door enquiries may not be required.\textsuperscript{171}

A typical DNA database will contain a number of indexes, for example, a crime scene index and a comparator index (the contents of which will depend on the particular requirements of a jurisdiction: i.e. those convicted or suspected of a particular offence). The UK National DNA database (NDNAD) is instructive in illustrating how a database operates. The NDNAD contains DNA profiles from three different sources:\textsuperscript{172} Crime scene profiles – these are profiles from unknown persons, gathered from crime scene samples (such as blood, semen, sperm, saliva or other biological material); Comparator profiles – these are reference profiles collected from a range of individuals (predominately those convicted or suspected of a recordable offence and volunteers who consent to the entry of their profile on the database);\textsuperscript{173} and Elimination profiles – these are another source of reference profiles

\textsuperscript{170} The Law Reform Commission, Report on The Establishment of a DNA Database (LRC 78 – 2005), 9.
\textsuperscript{171} Ibid. 10.
\textsuperscript{172} The DNA samples and the corresponding profiles which are derived from the samples belong to the individual police forces from which they originate, even when the profiles are entered into the NDNAD. The majority of the profiles on the database have been tested by the FSS, with the remaining 20 per cent being profiled in the accredited laboratories of five private organisations. See UK National DNA Database Annual Report, 2005–6.
\textsuperscript{173} In the UK each comparator profile also contains the following information: unique barcode reference number linking it to the stored DNA sample; Arrest Summons Number, which links it to the record on the Police National Computer (PNC) containing criminal records and police intelligence information; the person’s name, date of birth, gender and ‘ethnic appearance’ (ethnic appearance is designated by the arresting officer.); information about the police force that collected the sample; information about the laboratory that analysed the sample; sample type (blood, semen, saliva, etc.); and DNA profile as a digital code (the code comprises twelve numbers for SGM profiles and twenty for SGM Plus profiles, plus a gender indicator. Records for SOC profiles contain information about the crime rather than the (unknown) individual). See Genewatch UK report, The Police National DNA Database: Balancing Crime Detention, Human Rights and Privacy (January 2005), 16.
obtained from individuals who may potentially contaminate a crime scene during the course of their work (such as a crime scene investigator).  

Every morning, the NDNAD automatically searches all the DNA profiles housed in the database against each other in an attempt to locate a hit or match. A hit can be a direct match (i.e. it matches at all 10 loci) or, if the database is instructed, a partial match (i.e. a search may be instructed to search for matches with 6 or more loci). In essence, a match for a DNA profile will depend on the search stringency of a particular DNA database system. For example, in the United States, CODIS (Combined DNA Index System) is capable of searching at a number of stringencies. High-stringency means that all alleles of the loci which are present in both DNA-profiles must be equal. Moderate-stringency means that of two DNA-profiles the alleles of a locus with the least number of alleles must be present in the corresponding locus of the other DNA-profile. This stringency can be useful for comparing mixed DNA-profiles with single DNA-profiles. Low-stringency means that in each locus which is compared in two DNA-profiles at least one allele of that locus must be present in the other DNA profile. This stringency is useful for predicting genetic relationships. Thus it is central to the technique of familial DNA profiling, which is becoming an increasingly useful intelligence tool for modern criminal investigation.

Once a match between a comparator profile and crime scene profile (or vice versa) has been detected the relevant police force are informed that there has been an intelligence match. While a match does not automatically imply guilt, it indicates that the person whose profile was matched to the database could potentially have been present at the scene of the crime, thereby potentially creating a useful lead for the police. However, it is imperative that the value of a match is subject to extensive scrutiny: thus it is important that a match should not be allowed to be automatically subsumed by the growing phenomenon of the _CSI_ effect (i.e.

---

174 For an overview of the UK database see Bramley B, “DNA databases” in Williams R and Fraser J (eds), _Handbook of Forensic Science_ (Willian Publishing 2009), chapter 12.
175 In the case of a crime scene, police may have recovered a biological sample. If degraded, the forensic laboratory would only be capable of generating a partial DNA profile. While a partial DNA profile can still be used as a means of including or excluding individuals from an investigation, the less DNA markers available the higher the statistical probability that there may be another individual with the sample marker, thereby undermining the impact of the DNA evidence.
178 The ethical concerns surrounding the use of familial searching will be discussed in a later section.
179 Such matches are often beneficial for solving cold cases, providing an investigative lead for an old unsolved crime.
the conflation of a DNA match with guilt). For example, a match could be the result of a number of factors, such as coincidence, transfer, foul play, adventitious match, legitimate reason, or it may have been subject to contamination or simply a mistake. Therefore, to understand the probative value of a DNA match it is necessary to examine the DNA profiling process.

2.4.1. Examining the Process of DNA Analysis

Once biological material is located at a crime scene (e.g., blood, semen, saliva, skin cells, hair follicles) or a swab taken from an individual (a swab taken from an individual predominately involves swabbing the inside of an individual’s mouth using a cotton bud, known as a buccal swab), it is transported to a relevant forensic laboratory for testing. Essentially the process for the current DNA profiling technology (SGM Plus) involves five primary steps; Extraction (the removal of DNA from the sample); Quantitation (the amount of suitable DNA available for testing is quantified); Amplification (PCR is used to copy and increase the amount of suitable DNA for testing); Electrophoresis (separates DNA into fragments corresponding to size for display in electropherogram (EPG)) and Analysis (the results are analysed to determine probative value).

---


181 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. The pure extracted DNA is resuspended in a buffer or distilled water and made ready for the next stage; see LRC Consultation Paper, Consultation Paper on the Establishment of a DNA database (LRC CP – 39 -2004), 27.

182 The amount of extracted DNA from the cells is determined using a commercially produced kit. The concentration of extracted DNA varies strongly depending on the nature and size of the biological sample that is being investigated. It usually ranges between zero and 200 hundred nanograms. Modern profiling techniques require approximately 20 cells to obtain a successful DNA profile: this equates to approximately 130 picograms of DNA. Ibid.

183 An exact amount of DNA is added to the PCR, which amplifies selected regions of DNA to detectable levels. PCR achieves this by splitting each DNA molecule (double helix – two strands) into two single strands. The two separated strands form the basis for the new DNA molecules. The missing strands are rebuilt on to the two separated strands, creating two new double helix DNA molecules. Importantly, the two new molecules are identical to the initial DNA molecule. This process is repeated, between 25 and 35 times in a row. Ibid.

184 The electrophoresis step takes the amplified DNA produced after the PCR stage and separates the different DNA fragments that it contains based on their size. This allows the size of the fragments to be measured and from this information an STR based DNA profile can be obtained. Ibid.

From this the number of STR repeat units that a person has at each locus is determined. For example, at a particular locus the sequences may read:

<table>
<thead>
<tr>
<th>Allele 1</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>AATTCG</td>
<td>ATGG</td>
<td>ATGG</td>
<td>ATGG</td>
<td>ATGG</td>
<td>ATGG</td>
<td>ATGG</td>
<td>CGTTAA</td>
</tr>
<tr>
<td>TTAAGC</td>
<td>TACC</td>
<td>TACC</td>
<td>TACC</td>
<td>TACC</td>
<td>TACC</td>
<td>TACC</td>
<td>TACC</td>
</tr>
<tr>
<td>Allele 2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>GGCCTA</td>
<td>ATGG</td>
<td>ATGG</td>
<td>ATGG</td>
<td>ATGG</td>
<td>ATGG</td>
<td>ATGG</td>
<td>ATGG</td>
</tr>
<tr>
<td>CCGGAT</td>
<td>TACC</td>
<td>TACC</td>
<td>TACC</td>
<td>TACC</td>
<td>TACC</td>
<td>TACC</td>
<td>TACC</td>
</tr>
</tbody>
</table>

In this example, the sequence in Allele 1 (ATGG/TACC) repeats 7 times, whereas the sequence in Allele 2 repeats 8 times. Therefore this locus will be represented as (7, 8). This process is conducted for each of the selected loci (as mentioned already in Ireland and the UK, the DNA profiling technology identifies 10 specific loci). This results in the creation of an STR DNA profile that is characteristic for that individual. 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.

The time taken to generate a DNA profile can vary dramatically. For example, the type of biological sample may result in the extraction taking longer.\(^{186}\) Currently the process of generating a DNA profile takes approximately 24 hours,\(^{187}\) although this is dependent on the type of sample being profiled. It is important to consider the multiple variables that may be relative to a particular biological sample: for example, there may be no DNA in the sample or any DNA that may be present may be completely degraded (therefore a DNA profile would be unable to be generated); or the sample may be a mixed sample, such as in a rape case, which means obtaining an accurate DNA profile is much more difficult.

On a more practical level, the period of time in which a DNA profile may be generated is also dependent on the workload or the volume of cases that a laboratory has at any particular time. Staffing levels and the experience of the laboratory technicians would also be a relevant factor. As will be illustrated in later chapters countries have continued to expand their national collection and retention regimes. However, a factor that is often unconsidered when expanding police powers to collect and retain DNA information is the significant additional

\(^{186}\)For example extraction for a blood sample takes approximately 90 minutes; semen stain approximately 6 hours (or overnight); hairs approximately 5 hours (or overnight); cigarette ends overnight soak plus 2 hours. LRC Consultation Paper, *Consultation Paper on the Establishment of a DNA database* (LRC CP – 39 -2004), 28.

resources that will be needed and costs that will be incurred in maintaining an efficient DNA analysis system. For example, in the United States, despite the "DNA collection and retention' drive that has been widening the scope of when (and from whom) a DNA sample can be taken, the efficiency of their DNA policies have been seriously undermined by the increasing backlog of DNA samples in both national and state databases. Thus it is important to consider practical issues (such as adequate resources and finance) surrounding the implementation of new criminal justice legislation.

For the purposes of the present discussion we will assume that the forensic laboratory is adequately resourced and the DNA sample is suitable for forensic analysis. Thus once a sample is successfully analysed a DNA profile is generated. This data is transferred on to a computer system which then gives a digital representation of a person’s DNA in relation to the specific targeted regions that have been profiled. The following examples are the DNA profiling results of a hypothetical rape case. The first example is an illustration of how the DNA profile will appear on a computer screen:

188 The issue of backlogged DNA samples has been an issue from the beginning in the US. The government attempted to resolve the issue with the passing of the DNA Analysis Backlog Elimination Act 2000. However, the issue still remains problematic. In 2010 the National Institute of Justice implemented the DNA Backlog Reduction Program. The program offered states the opportunity to apply for funding that would enable states to implement procedures, practices and infrastructure that would increase the capacity of states laboratories in processing DNA samples, thereby alleviating the backlog. See Hassell C, “FBI efforts to eliminate the DNA Backlog” Statement before the House Committee on the Judiciary, Subcommittee on Crime, Terrorism, and Homeland Security (20 May 2010). Available at: http://www.fbi.gov/testimony. For details of the DNA Reduction programme see "DNA Backlog Reduction Program" http://www.dna.gov/funding/dna-backlog-reduction/.

For example at locus D3 (the first marker in the top left hand corner) in the above diagram, the profiled individual has a short four base DNA sequence AGAT repeated 15 times at this location on one strand of the maternally derived chromosome and 16 times on the corresponding paternal chromosome. This provides a DNA profile measurement of (15, 16) at this particular locus (point). To help elucidate this point, please refer to the following example:

<table>
<thead>
<tr>
<th>STR loci</th>
<th>Amel (Sex)</th>
<th>D3</th>
<th>VWA</th>
<th>D16</th>
<th>D2</th>
<th>D8</th>
<th>D21</th>
<th>D18</th>
<th>D19</th>
<th>THO1</th>
<th>FGA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crime Scene (Un-sub)</td>
<td>X,Y</td>
<td>17,17</td>
<td>17,19</td>
<td>13,14</td>
<td>17,24</td>
<td>12,13</td>
<td>29,30</td>
<td>14,15</td>
<td>13,14</td>
<td>6,7</td>
<td>21,22</td>
</tr>
<tr>
<td>Victim</td>
<td>X,X</td>
<td>15,16</td>
<td>17,19</td>
<td>11,12</td>
<td>20,26</td>
<td>10,14</td>
<td>30,30</td>
<td>14,16</td>
<td>14,15</td>
<td>7,9</td>
<td>24,26</td>
</tr>
<tr>
<td>Suspect 1</td>
<td>X, Y</td>
<td>17,17</td>
<td>17,19</td>
<td>13,14</td>
<td>17,24</td>
<td>12,13</td>
<td>29,30</td>
<td>14,15</td>
<td>13,14</td>
<td>6,7</td>
<td>21,22</td>
</tr>
<tr>
<td>Suspect 2</td>
<td>X, Y</td>
<td>15,18</td>
<td>16,22</td>
<td>13,14</td>
<td>10,11</td>
<td>8,9</td>
<td>35,37</td>
<td>14,15</td>
<td>13,14</td>
<td>10,11</td>
<td>20,21</td>
</tr>
</tbody>
</table>
Interpreting a DNA profile is a two stage process: the first step is to determine whether the profiles are a match. As evident from the above example, the attackers DNA profile and Suspect 1’s profile are a direct match (the 10 loci share identical alleles). The second step is to determine the significance and the weight that can be attributed to a particular profile match. As regards the second stage, of particular importance is determining how common or rare a particular DNA profile is in the general population. The difficulty is that unless the DNA from every person in a particular population is examined it is impossible to determine exactly how many individuals share common or similar DNA profiles.

To overcome this problem, as currently sampling the entire population may not be deemed feasible from a fiscal, practical or human rights perspective, an evaluation of the infrequency of a DNA profile is estimated utilising frequency or population databases. For example, a sample population database containing the profiles of a sample collection of individuals in a population (ranging from 50–300) is used to estimate how often a DNA sequence or allele occurs within that section of the population. As evident in the earlier example, it is frequent that individuals will share common DNA sequences at the designated loci (for example, both Suspects 1 and 2 share three identical sequences at D16, D18 and D19). To promote distinction it is necessary to target additional loci. As documented earlier the current SGM Plus technique that is used in Ireland and the UK uses 10 loci. Other countries have increased the number of loci used during testing in recent years. For example the US uses a 13 loci system, while New Zealand have recently upgraded their profiling technique to a 15 loci system – to reiterate the more loci tested the greater the statistical chance that a particular DNA profile will be unique to an individual.

---

191 Ibid. 30.
192 These issues will be addressed in detail in subsequent chapters of the thesis.
194 See rape case example, on VWA (DNA on chromosome pair 12) both have the same number of repeat units at that locus or point, (17, 19).
198 The advantages of increasing the number of loci will be discussed in further detail towards the end of the chapter. See http://www.esr.cri.nz/competencies/forensicscience/dna/Pages/currenttechniques.aspx
In summary, while each DNA sequence or allele may be relatively common among a population, the basic laws of probability and statistics propose that when a number of common events are combined the resulting probability of them all happening becomes highly unlikely. To help develop this point, the Law Reform Commission provides a useful example involving a deck of ordinary playing cards. The probability of picking the Ace of Spades from a standard playing pack of 52 cards is 1 in 52. If this ace is then returned to the deck then the probability of picking the Ace of Hearts is again 1 in 52. However, the probability of picking the Ace of Spades and then the Ace of Hearts is 1 in 2,704 (i.e. 1/52 multiplied by 1/52). Consequently, the more events that are combined the less chance of the event occurring or repeating (the chance of removing the four aces from a pack is 1 in 7,311,616). In relation to a DNA profile of 10 loci, the combination of these particular 10 loci having the same individual DNA sequences in a particular population would constitute a very rare event indeed. In general, this probability could be in the order of 1 in several billions, which implies that any one profile is probably extremely rare in the general population, if not unique. The SGM Plus technique used in Ireland and the UK, which targets 10 loci, claims to have an average discrimination rate of 1 in a billion. Interestingly it is important to note that while an inclusion or a match is based upon a statistical likelihood, an exclusion or non-match (free from contamination or mistake) is a virtual certainty.

2.5. Opening the ‘Black Box’

Latour describes a ‘black box’ as that which hides complexity and controversy from view. A black box, once it has been successfully closed appears to be a ‘machine’ operating to produce what are considered to be reliable and meaningful outputs: as Latour later suggests ‘when a machine runs efficiently, when a matter of fact is settled, one needs to focus only on its inputs and outputs and not on its internal complexity’. In science, black boxing is similar to the making of a scientific fact. Expounding this point, Epstein argues that ‘masked beneath their hard exterior is an entire social history of actions and decisions,

202 Ibid.
204 Ibid.
experiments and arguments, claims and counterclaims – often enough a disorderly history of contingency, controversy and uncertainty. It is this plethora of competing voices, experiences and interests that the black box renders invisible. As Epstein observes _the process of closing a black box is successful when contingency is forgotten, controversy is smoothed over, and uncertainty is bracketed_. Thus the black box is seen as creating a sense of external order over internal chaos, complexity and uncertainty.

The concept of black boxing can refer to the manner in which scientific and technical practices can been hidden or made invisible by the success of the technique in question. As Dahl notes, _When something runs efficiently, or when a question of fact is settled, the processes of interpretation and negotiation creating the _fact_ are often rendered invisible, leaving visible only inputs into and outputs from the processes but none of their internal complexity._ An interesting issue is that each black box may contain an unknown number of additional black boxes and thus only individuals with the required level of knowledge may be capable of deciphering all of the potential black boxes (however, even such an individual may be unable to open developing or tangential black boxes). The concern is that an unqualified individual may be unable to adequately evaluate the contents of the box (never mind recognising that there may be a number of black boxes that require opening). As a result they may automatically accept the information produced from the box without adequately assessing the mechanisms that produced the relevant information. Dahl suggests that this is often the case when DNA evidence is examined in court; she provides an example when a lawyer is afraid and ill-equipped to question an expert during trial:

There is too little knowledge. We don‘t have enough knowledge to ask good enough questions. There are only a few of us [defence lawyers] and of the prosecutors that know enough about DNA. This results in the questioning of things ... as a participant in court [an active participant, hence defence lawyer, prosecutor or judge] and not wanting to appear a fool because one is asking silly questions. Then one refrains from asking questions that might have made the

---

207 Ibid. 28.
208 Ibid.
209 Dahl JY, _DNA the Norway: black-boxing the evidence and monopolising the key_” in Hindmarsh R and Prainsack B (eds), _Genetic Suspects: Global Governance of Forensic DNA Profiling and Databasing_ (Cambridge University Press 2010), 204.
210 Ibid.
Thus, even if the science behind DNA profiling may be deemed reliable, it is important to remember that the role of DNA profiling in the criminal process incorporates more than just science. DNA profiling is heavily reliant on human interaction and interpretation from its collection at a crime scene, to its analysis in the laboratory, to its presentation in court. The moment human interaction is involved, infallibility is no longer a viable concept – mistakes are part of human nature: even the most diligent, err on occasion! Therefore it is important to address the various concerns that undermine the perception of infallibility surrounding DNA evidence.

As was outlined earlier in the chapter, the technology of DNA profiling has achieved universal acceptance in various courts of law around the world. Thus while the reliability of the results produced by DNA profiling may be questioned, the theory and the science behind the technique has not been refuted to date. Despite the universal acceptance of the technique during criminal investigations and the acceptance of its results in a court of law (subject to the boundaries of evidential admissibility), it is important to discuss the issues that will undermine the value of a match. As Aronson observes when examining the continuing problems associated with DNA profiling, errors continue to arise despite the fact that the controversies over the validity and reliability of DNA evidence have been resolved for nearly a decade now.

Thus when assessing the veracity of a DNA match, it is vital to consider two factors. First, as a DNA profile is based upon the concept of probability, is there a chance of a coincidental or adventitious match (in short, this means when two different people have an identical DNA profile). Secondly, is the probability that the result is a false positive?

---

212 While the informant continued “This is not a problem particular to DNA. It concerns all types of evidence.” The interviewee suggested that DNA evidence was exceptional and extraordinary evidence. Dahl JY, “DNA the Norway: black-boxing the evidence and monopolising the key” in Hindmarsh R and Prainsack B (eds), Genetic Suspects: Global Governance of Forensic DNA Profiling and Databasing (Cambridge University Press 2010), 204.


may result because of misinterpretation, contamination or handling errors either at the crime scene or in the laboratory. The problem is that either an adventitious match or a false positive will result in an erroneous match being produced. Thus it is important to consider the probability of an adventitious match and a false positive when considering the probative value of DNA evidence.\(^{216}\) This section will begin by discussing the latter.

### 2.5.1. Chain of Custody

The _chain of custody_ denotes the process of documenting the manner in which evidence is collected, analysed, stored and protected, from initial collection at the crime scene until it is presented in court. Essentially the chain of custody _verifies that the evidence was handled carefully and has not been damaged, tampered with or changed in anyway_.\(^{217}\) To illustrate the importance of the chain of custody for a DNA sample, Lynch _et al_, provide a fascinating account of the _career\(^{218}\)_ of a DNA sample, describing the circumstances involved in _R v Smith_ in the United Kingdom in 1995.\(^{219}\) Smith was eventually convicted of the offence, but the incriminating DNA evidence was subject to a strong challenge from the defence on the basis that there were discrepancies in the chain of custody – in particular the transfer of a DNA sample from the laboratory in Huntington to the laboratory in Aldermaston.\(^{220}\) The case illustrated that a _chain of custody extends well beyond the laboratory and includes personnel_

\(^{216}\) Ibid.

\(^{217}\) **Interpol Handbook on DNA Data Exchange and Practice: Recommendations from the Interpol DNA Monitoring Expert Group** (2009), 42.

\(^{218}\) Lynch _et al_ acknowledge that they borrow the concept of a _career_ from Erving Goffman but utilise it in a different context. See Lynch M _et al_, _Truth Machine: The Contentious History of DNA Fingerprinting_ (The University of Chicago Press 2008), 121. Goffman used the _career_ analogy to describe the _moral career_ an individual passed through until attaining a recognised moral status. (See Goffman E, _Asylums: Essays on the Social Situation of Mental Patients and Other Inmates_ (Doubleday-Anchor 1961), 154. Similarly Sykes used the _career_ metaphor to describe the ways in which an individual may end up in prison. See Sykes G, _The Society of Captives_ (Princeton University Press 1958).

\(^{219}\) The case involved the violent murder of a young Asian woman in Dunstable, a town near Luton, Bedfordshire in the United Kingdom. The woman had been assaulted, dragged to a secluded location, then subjected to an attempted sexual assault before or after being strangled. The police located videotapes of the night in question which revealed the victim leaving a nearby nightclub with an identified individual. The police revealed stills of this individual to the local media, hoping to locate the man in question. An acquaintance of the identified man came forward and identified the individual as Smith. The individual who came forward informed police that Smith was in fact on leave from prison where he had been serving time for a previous sexual assault. The police quickly located and arrested Smith in his brother’s house in Luton. DNA obtained from the victim (and bloodstains obtained from Smith’s shoes) were a direct match to the samples from the crime scene and the victim. On the basis of this evidence Smith was convicted of the offence. See Lynch M _et al_, _Truth Machine: The Contentious History of DNA Fingerprinting_ (The University of Chicago Press 2008), 290.

\(^{220}\) The issue centred on a photocopied signature of a clerk who had authorised the transfer from Huntington to Aldermaston. It subsequently transpired that four different lorries were used to transfer the sample from Huntington to Aldermaston (which had not been declared in the original chain of custody). Lynch _et al_ use an interesting _paper doll_ analogy to illustrate the hidden individuals who can be involved during the transfer of evidence from one place to another. See Lynch M _et al_, _Truth Machine: The Contentious History of DNA Fingerprinting_ (The University of Chicago Press 2008), 291.
besides laboratory technicians and staff scientists. Viewed retrospectively and inferentially, a chain of custody reaches back from the lab all the way to the crime scene. Thus it is vital that all those who may be involved in the chain of custody should be aware of the importance of their role in ensuring that the integrity of a sample is not unnecessarily undermined. Particularly, given the general acceptance of the science behind the DNA profiling process, legal counsel now tend to focus their efforts on undermining the initial collection and/or storage of a DNA sample even before it has entered the laboratory. Sometimes referred to as _pre-analytical errors_, such legal strategies focus on the _low end_ collection regimes utilised by a police force such as in the case in question. This tactic was famously (and successfully applied) in the O.J. Simpson case where the jury was convinced by the _junk in-junk out_ theory put forward by the defence. The defence argued that while the process of DNA analysis when conducted correctly is sound, in the case in question police incompetence and perhaps deception had undermined the integrity of the DNA sample, which consequently undermined any derived results.

Therefore all procedures (in and pre-laboratory) surrounding collection, scene preservation and access, and handling and transport should be meticulously documented. However, it is important to note that while documentation is vital in ensuring the integrity of a sample, care needs to be taken to avoid two possible pitfalls: namely rigid protocols and/or illusory standards. Whilst clear, transparent, step by step and consistent protocols are vital to ensure the integrity and consistency of samples, this should not result in pedantic protocols that actually prevent or severely inhibit the actors involved from completing their designated tasks appropriately. Secondly, it is important that if we do create and establish protocols and methods of best practice that we ensure that the actors involved in the process implement the

---

221 See Lynch M et al, _Truth Machine: The Contentious History of DNA Fingerprinting_ (The University of Chicago Press 2008), 128, _the chain also extends prospectively into the courtroom, and it encompasses an entire series of material, clerical, and other referential practices that make up the local history of a sample_” Ibid.
222 Ibid. 115, _Errors committed at an early stage in the evidence collection process are sometimes called _preanalytical errors_; though such errors can also occur within a laboratory when samples are mislabelled, switched, or cross-contaminated while being prepared for analysis.”
224 It is believed that the jury discounted the powerful DNA evidence (which had shown matches of blood from the victim to Simpson’s car and to a bloody glove found outside his home) because of the defence’s claims that the problems surrounding the collection of the DNA evidence undermined the quality of the results.
225 This is grounded in the essential incompleteness of instructions, the argument being that tasks require an element of ambiguity or discretion to ensure the regular enactment of a system. Essentially based on the common sense reasoning that it is impossible to document everything. See Garfinkel H, _Studies in Ethnography_ (Prentice Hall 1967).
established policies. A culture which creates protocols or standards, but turns ‘a blind eye’ to their implementation is arguably more of a concern than a culture which has yet to implement such practices, as it can result in misleading accounts of practice and procedures, resulting in an environment of ‘illusory’ safeguards. While there will often be a tension between established protocols and actual practice, it is important that such tension is minimised. Thus it is important that illusory standards are addressed by creating effective and independent monitoring and audit procedures.

2.5.2. Contamination of samples

DNA samples can become contaminated by contact with another person. This can happen if the sample is mishandled by the police while collecting evidence or the laboratory staff carrying out the analysis. Even trace amounts of what is referred to as ‘outsider’ DNA in a crime scene or comparator analysis can complicate an analysis. To prevent such contamination the majority of jurisdictions employ trained crime-scene examiners who are experts in sample collection. Both police and the crime scene examiners are trained to take precautionary steps to try to prevent and avoid contamination. These steps include controlling access to the crime scene; wearing gloves and face masks; and carefully packaging, sealing and labelling evidence. At the processing stage, laboratories use controls and checks to assess the quality of DNA profiles and to check for contamination. When a problem is identified, the sample can sometimes be reanalysed to produce a valid result. Additional tests can also eliminate profiles from laboratory staff and the police.

The number of cases, involving DNA, embroiled in contamination controversy is steadily growing. For example, in New Zealand in 1998 an individual in Christchurch had his DNA sample taken after being the victim of an assault. His DNA profile subsequently matched the DNA profile derived from previous murder scenes in Wellington. The man was subsequently arrested by police in relation to the murder and was subject to ‘extensive police enquiries’ for approximately three months. It was subsequently discovered that the individual involved had never been to Wellington where the murders had occurred. In 1999 an inquiry conducted

227 Elimination databases have been set up specifically for this purpose. These are searched only at the request of a senior officer if there is concern that contaminated samples will be identified.
228 The government launched the Sharman inquiry to investigate the events of this case. It was initially thought that a male relative of the individual might have been the culprit, until it was stated that the individual had no living male relatives. This was countered by the rather preposterous sounding argument that he might have had
by Sir Thomas Eichlbaum and Professor John Scott found that there had been accidental contamination of the samples in the laboratory during an early stage of processing.229

A pertinent point is that we perhaps place too much emphasis on the ability of forensic sciences such as DNA profiling to ‘crack a case’ or too much weight on the forensic evidence to link an individual to a crime. As Roberts warns there are ‘grave consequences which can attend over-reliance on apparently powerful scientific evidence’.230 Ironically, forensic science, which is often portrayed as an avenger of justice, has been involved in a number of high profile miscarriages of justice.231 The concern is that given the illusion of infallibility surrounding DNA profiling, it will be extremely difficult for an accused individual to dispute DNA evidence.

A recent high profile miscarriage of justice in Australia involving DNA evidence echoes these concerns. In 2008 Mr. Farah Abdulkdir Jama was convicted of rape on the basis of DNA evidence and sentenced to six years in prison. Jama was convicted of raping a 48-year-old woman found semi-conscious in a nightclub toilet cubicle in Doncaster, Victoria. The woman was taken to a local hospital and subsequently had no recollection of the event. On physical examination at the hospital, routine internal swabs found semen that was later matched via a DNA database to Jama. On sentencing Jama, Judge Paul Lacava stated that ‘the attack was offensive, repugnant and intolerable in this society‘, continuing ‘you raped her when she was in a most vulnerable state … You obviously saw her and sized up the situation. Instead of assisting her … you raped her for your own immediately and short-lived sexual gratification.’ Concluding he stated that he was ‘guarded about [Mr. Jama’s] chances of rehabilitation despite his youth because he had shown no remorse’.232

231 In particular, seven high profile miscarriages of justice have cast a shadow over forensic science and the criminal justice system in the UK in the early 1990s: those involving: John Preece; ‘The Birmingham Six’; ‘The Maguire Seven’; ‘The Guildford Four’; Stefan Kiszho; Judith Ward; and ‘The Tottenham Three’. These led to the establishment of the Royal Commission on Criminal Justice in 1991. As Williams and Johnson note the Commission’s remit was to undertake an extensive examination of the criminal justice system from the point at which an individual is arrested, through the investigative process and the collection of evidence, to the prosecution of an individual in court. See Williams R and Johnson P, Genetic Policing: The use of DNA in criminal investigations (Willan Publishing 2008), 48.
It subsequently transpired why Jama had shown no remorse: he was innocent of the offence. Approximately 14 months later, it was discovered that the same forensic laboratory technician had taken a swab from Jama’s mouth in a separate and unrelated investigation on the previous day. His DNA had been placed on the database less than 48 hours before he was matched to the semen sample from the rape incident. The Vincent Report (the title of the enquiry launched to investigate the incident) revealed an extraordinary case of contamination coupled with a lack of checks and balances in the DNA sampling procedure as the primary causes of the miscarriage of justice. 233 Worryingly the report found that the DNA evidence in the case was perceived to possess _an almost mystical infallibility that enabled its surroundings to be disregarded_; 234 particularly worrying as there were no fingerprints, witnesses, CCTV footage or any other physical or biological evidence that a rape had been committed. Jama also argued that he had never been to the club or met the woman, and had been at home with his family on the night of the incident. 235 The Jama case and the subsequent report produced to investigate its findings are illustrative of the potential problems associated with using forensics (particularly DNA evidence) in criminal trials, particularly those with little or no corroborative evidence. 236

2.5.3. Errors in data handling

Another potential problem involves data handling errors. Such errors can occur when samples are mislabelled during processing or when data is not entered correctly on to the computer. While it is accepted that mistakes are inevitable, it is important that they do not occur as a consequence of unsatisfactory work practices or procedures. For example, in the US in 2001 a lab worker realised that a colleague had been using an incorrect procedure to eliminate police DNA profiles from samples from the scenes of crimes. This mistaken practice cast doubt on over 100 previously conducted DNA tests. The first sample to be retested in

---

233 The report found that the standard of cleaning of the examination rooms was inappropriate, given the presence of DNA. The level of cleaning was directed at maintaining infection control, not avoiding the spread of DNA and the cleaning required of surfaces and equipment in the laboratory in order to remove all traces of DNA was not carried out. See The Vincent Report, Vincent F, Report: Inquiry into the Circumstances that Led to the Conviction of Mr Farah Abdulkadir Jama (Victorian Government Printer 2010). Available at: http://www.justice.vic.gov.au/wps/wcm/connect/5a103e804263c8da810e832b0760a79a/VincentReportFinalMay2010.pdf?MOD=AJPERES, 11.

234 Ibid.


Houston, Texas showed that the DNA profile was used to convict a man serving 25 years for a rape that he could not have committed. The US government described the incident as an ‘isolated incident’ and that it should not undermine public confidence in forensic laboratories.237

It is important that measures and procedures are put in place that will minimise potential mistakes. Automated systems have and continue to be developed to reduce the number of times that individuals have to handle samples, therefore reducing the potential risk of human error.238 However, it is important to emphasise that reliability of the results is still reliant on subjective human analysis. To ensure best practice, laboratories conducting the testing should be: accredited, independently monitored, publish regular reports and be subject to regular review and audit.239

2.5.4. Misinterpreting DNA profiles

A full DNA profile compared against another full DNA profile (free from contamination or mistake) should not prove problematic when attempting to confirm or refute a match. Therefore speculative searches on a database (involving full DNA profiles) will often not present problems surrounding misinterpretation. However, the nature of crime is that samples obtained from a crime scene may not always be of desirable quality. They may be old or degraded, thereby preventing the construction of a full DNA profile. An incomplete DNA

238 Parson W and Steinlechner M, ‘Efficient DNA database laboratory strategy for high throughput STR typing of reference samples’ (2001) 122 Forensic Science International 1–6. The ENFSI recommends ‘The occurrence of errors in DNA-databases as a result of human mistakes associated with data entry should be avoided as much as possible by automating the allele calling and the DNA-database import process. When DNA-profiles are entered manually into the DNA-database this should be done by a process which detects typing errors, for example by double (blind) entry of data.’ See ENFSI DNA Working Group: Review and Recommendations (October 2011), recommendation 19.
239 In the UK for example, these requirements are overseen by the FSS’s Custodian of the NDNAD and are as follows. Accreditation: the laboratories that carry out the DNA analysis have to pass a proficiency test before they are allowed to put profiles on the database. They have to prove they can consistently produce DNA profiles that are reliable and compatible with those provided by other suppliers. Performance monitoring: the laboratories have to prove that they are continuing to meet the required standards through a programme of internal and external quality audit. They have to repeat the analysis of 5–10% of the samples to show they get consistent results and demonstrate that they can maintain an error rate below 0.05% (no more than one error in every 2,000 samples analysed. Audit and assurance: the Custodian and the team are also subjected to regular independent audits to ensure they are maintaining both the IT infrastructure and the quality of the data, as well as managing the flow of information between the central database, the forensic labs and the police. See Bramley B, ‘DNA databases” in Fraser J and Williams R (eds), Handbook of Forensic Science (Willan Publishing 2009), 317–320.
profile is referred to as a partial profile. Aging of a sample occurs slowly if the sample is carefully preserved but can occur rapidly when the samples are exposed to unfavourable conditions such as warmth, moisture or sunlight. A partial sample will have an incomplete number of or missing STRs, which will cause difficulty during interpretation. DNA profiles also contain spurious STRs or DNA markers that result from technical artifacts. These artifacts arise during the process of producing a DNA profile in the laboratory and analysing it by computer; they are unavoidable. It is normally possible to distinguish them from real STRs, but this may not always be the case. There are no generally accepted criteria to discriminate between artifacts and genuine data: therefore forensic analysts rely on their professional experience when analysing a profile.

Interpreting DNA profiling is particularly difficult when a sample contains a mixture of DNA from more than one person. This is quite common in the case of crime scene samples. The high sensitivity of the tests makes it easier to detect DNA from everyone present at a crime scene, even if they only leave a minute trace. The strongest profile does not always come from the person who last held an object but is dependent on the individual’s genetic make-up. Thus genetic profiles from an object handled by several people, for example a door handle, may be very difficult to unravel.

Interpreting DNA is a complex process and misinterpretations have led to a number of people being wrongly convicted in the US. DNA profiling is subject to human interpretation:

---

246 In 1997, Timothy Durham of Tulsa, Oklahoma, was released from prison after serving four years for a rape that he could not have committed. At his trial, he was able to produce 11 alibi witnesses who placed him in another state at the time of the crime but he was still convicted of raping an 11 year old girl and sentenced to 3,000 years in prison. The prosecution’s case rested on three pieces of evidence: he was identified by the victim; a hair found at the crime scene was shown to be similar to his; and a DNA test showed that his profile matched that of the semen recovered from the girl. A repeat DNA test later revealed that the initial result was a false positive that had arisen because of errors in interpreting a mixed sample. The laboratory technician had failed to completely separate the male and female DNA and the combination of STRs from the two sources produced a profile that could have included Durhams. See Thompson W, Taroni F and Aitken C, “How the Probability of a False Positive Affects the Value of DNA Evidence” (2003) 48(1) J Forensic Sci 3.
therefore there is also a danger of a DNA analyst being intentionally or unintentionally biased.\textsuperscript{247} When confronted with unclear or ambiguous results, an analyst may be inclined to interpret the evidence in a way to aid the case.\textsuperscript{248} Contextual bias has been the subject of growing examination.\textsuperscript{249} Recently, the issue was discussed at length in a lengthy report by the National Academy of Sciences in the US:

Human judgement is subject to many different types of bias, because we unconsciously pick up cues from our environment and factor them in an unstated way into our mental analyses. Those mental analyses might also be affected by unwarranted assumptions and a degree of overconfidence that we do not even recognise in ourselves. Such cognitive biases are not the result of character flaws; instead, they are common features of decision making, and they cannot be willed away. A familiar example is how the common desire to please others (or avoid conflict) can skew one’s judgment if co-workers or supervisors suggest that they are hoping for, or have reached, a particular outcome. Science takes great pains to avoid biases by using strict protocols to minimise their effects.\textsuperscript{250}

Bias can be minimised by ensuring that DNA profiling is conducted in an independent environment where the analyst is unaware of the identity or relevance of a particular DNA sample. A number of jurisdictions attempt to minimise errors (including bias) by requiring an accused to provide a secondary sample to be analysed and produced as evidence in court, rather than the sample of the original match.\textsuperscript{251}

It is impossible to eradicate all errors from interpretative results. Subjective analysis will always be open to interpretation and contrasting opinion. It has been suggested that a minimum of two independent analysts should work on the examination of criminal DNA


samples to attempt to ensure a minimum risk of misinterpretation.\textsuperscript{252} It is important to reinforce the message that while DNA evidence is statistically compelling it is not infallible.

2.5.5. Adventitious matches

As documented earlier, there have been a number of technological advancements in DNA profiling technology. For example, as a result of these amendments there are two types of DNA profiles on the UK DNA database: those obtained between 1995 and 1999 and those retained since. The original profiling system used was the Second Generation Multiplex (SGM), based on identifying six loci, with an average discrimination power of 1 in 50 million.\textsuperscript{253} It was necessary to replace SGM in 1999 with SGM Plus (raises the number of loci to 10) to reduce the chance of an adventitious match. An adventitious match is a chance match between the two profiles of two different people and it gives a false positive result.\textsuperscript{254} These statistical anomalies occur quite frequently, usually between identical twins or close relatives but also between unrelated individuals, and can result in wrongful arrest.\textsuperscript{255} The primary reason for the change was such a wrongful arrest of Raymond Easton in 1999. Easton was visited by Swindon Police and asked to _volunteer_ a blood sample in relation to a burglary that had occurred over 200 kilometres away.\textsuperscript{256} Mr. Easton submitted a sample but informed police that on the night in question he had a number of alibis to confirm his attendance at home. He was suffering from Parkinson disease and was unable to drive or even walk for prolonged distances unaided. When submitting the sample he was unaware that his DNA profile, obtained a number of years earlier in relation to a domestic dispute, had matched the DNA profile which had been obtained from the crime scene where the burglary had taken place. Subsequently Mr. Easton was arrested for the burglary on the basis of the


\textsuperscript{253}This analysed six short tandem repeat (STR) loci plus a locus for sex designation.

\textsuperscript{254}Twenty two thousand comparator profiles were upgraded from SGM to SGM Plus because they were reported as matching crime scene profiles. Six thousand of these were recompared with the crime scene samples they originally matched. Of these, 52\% confirmed the original match, 19\% showed that the previously reported SGM match was adventitious and eliminated the suspect and no comparison was possible for 29\% because the crime sample profiles were no longer on the database. On the assumption that 19\% of the latter would also have been false positives, it was concluded that 26\% of the matches reported using the SGM would have been adventitious (UK DNA National Database Annual Report, 2003–4:16).


\textsuperscript{256}Rebecca Fowler _DNA, the second revolution_ The Obsever (27 April 2003). Available at: [http://www.guardian.co.uk/uk/2003/apr/27/ukcrime7](http://www.guardian.co.uk/uk/2003/apr/27/ukcrime7).
matching DNA profile and spent several hours detained in a cell. However, further testing of the DNA profiling revealed that Mr. Easton's match had been the result of _an adventitious cold hit_ – a false match that occurred by chance.\textsuperscript{257} The test was conducted using the six SGM loci test and the chance that a similar adventitious cold hit will occur again has been reduced greatly by extending the test to 10 loci. The new DNA profiling system, AmpF/STR SGM Plus test, results in a reduced chance of an adventitious match occurring. The chance that two unrelated people will match at all ten loci is 1 in 1 billion.\textsuperscript{258} To date no two people have been found to match at all ten loci; however, there is still a statistical chance that an adventitious or false match may still occur.\textsuperscript{259} Jeffreys has suggested that as the DNA Database grows larger, it is only a matter of time before a speculative search will reveal an adventitious match (as a DNA match is based upon probability).\textsuperscript{260}

2.5.6. **LCN DNA Profiling**

The science and technology behind the DNA profiling process has been deemed reliable and, more importantly from the perspective of this thesis, the evidence garnered as a result of this process (subject to the general rigors of the adversarial process) has been general accepted in a court of law. However, recent developments in DNA technology which allow an increasing range of DNA samples to be obtained from a crime scene have begun to cause difficulties for DNA within the legal arena; particularly the development of Low Copy Number (LCN) DNA Profiling. LCN profiling enables DNA to be extracted from extremely small quantities or badly degraded samples of DNA where it was impossible to generate an ordinary SGM Plus profile. This technique can be described as _super-sensitive_, and while it takes much longer than SGM Plus profiling, it has produced some spectacular successes, particularly in relation

\textsuperscript{257} Goodwin W, Lincare W and Hadi S, _An introduction to Forensic Genetics_ (Wiley 2007), 99.

\textsuperscript{258} See 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](http://www.forensic.gov.uk/forensic/foi/foi_docs//36L_DNA_LCN.pdf); Interpol DNA Handbook on DNA data exchange and Practice (December 2009), 57. Available at: [http://www.interpol.int/Public/Forensic/dna/handbook.asp](http://www.interpol.int/Public/Forensic/dna/handbook.asp); Champod C, _Identification and Individualization_ in Jamieson A and Moenssens A (eds), _Wiley Encyclopaedia of Forensic Science_ (Wiley 2009).

\textsuperscript{259} Goodwin W, Lincare A and Hadi S, _An Introduction to Forensic Genetics_ (Wiley 2007), 99.

\textsuperscript{260} Add to this, that the probability of an adventitious match increases when partial profiles or the profiles of related individuals are compared. Fifty per cent of SOC profiles are only partial because the source samples are degraded or involve low quantities of DNA. The standard for including partial profiles in routine speculative databases searches is that they must comprise genotypes from at least four loci. At the end of March 2003, of the 168,308 scenes of crime profiles on the database, 22,649 were partial. See Williams R, Johnson P and Martin P, _Genetic Information & Crime Investigation: Social, Ethical and Public Policy Aspects of the Establishment, Expansion and Police Use of the National DNA Database_ (Welcome Trust 2004). The probability of a chance match between full SGM Plus profiles of full siblings is 1 in 10,000 compared with the conservative estimate of 1 in 1,000,000,000 for unrelated individuals. See UK National DNA Database Annual Report, 2004-5.
to ‘cold cases’. However, the main issue with LCN profiling, as with all forensic evidence, is that its results must be carefully examined and any weight attached should be subject to stringent examination. Specifically, because of the sensitivity of the technique, any DNA that is detected is extremely susceptible to contamination.

In the well publicised Omagh Trial the prosecution relied upon LCN DNA to link Sean Hoey with a series of bombings in Northern Ireland. The defence, however, were able to demonstrate that the collection and storage of exhibits had not been undertaken with due diligence. Collection of crime scene materials had been done without what would now be considered standard protective clothing, and there were many instances of confusion over who had collected, and what had been done to, the exhibits. The judge summarised the approach as ‘thoughtless and slapdash ... items were so widely and routinely handled with cavalier disregard for their integrity’, leading him to conclude ‘... I find that the DNA evidence ... cannot satisfy me either beyond a reasonable doubt or to any other acceptable standard.

More importantly, however, the judge went on to cast doubt over the reliability of the LCN DNA technique, commenting that he was concerned at the wide variance of expert opinion whilst noting that LCN DNA has only been adopted for evidential purposes in two other countries. Moreover, the lack of ‘validation’ of the LCN DNA technique prevented calculations of the degree of reliability of the results. In the Omagh case the testing process had given differing results, demonstrating its potential to mislead. Following the ruling, the UK police immediately announced a suspension of the use of LCN DNA to enable a review of all pending prosecutions involving LCN DNA evidence. However, the report found that

---

263 R v Hoey [2007] NICC 49.
264 Ibid. para 61.
265 Ibid. para 62.
266 Ibid.
the technique of LCN DNA profiling is ‘robust’ and ‘fit for purpose’, thus the suspension has since been removed.268

As noted earlier, previous miscarriages of justice have highlighted how flawed or misinterpreted science can have dire consequences. Thus we should not allow the alluring potential of a novel DNA technique to sidestep the necessary protocols to ensure its reliability. While developments in the identification and individualisation techniques in forensic science (in particular DNA) may be becoming more advanced, it is important to reiterate that they are not infallible. LCN DNA may prove valuable to criminal investigations, but it is questionable whether it has yet reached the required standard for use as evidence in a criminal proceeding.269

A recent murder trial in Northern Ireland re-emphasises the difficulties surrounding the admissibility of developing DNA techniques during legal proceedings. The trial centred on DNA evidence linking two men (Colin Duffy and Brian Shivers) to a gun attack which resulted in the murder of two British soldiers (Patrick Azimkar and Mark Quinsey) in Massereene Army base in March 2009.270 Dr. Merlin, an expert witness from the US, used a computer based statistical method (known as TrueAllele technology)271 to assess DNA taken from items in the alleged getaway car, found partially burnt out a few kilometres from the attack.272 He tested DNA samples from a seatbelt buckle, a mobile phone, a latex glove and a single matchstick found in and around the proximity of the burnt out car. Dr. Merlin informed the court that the DNA sample found on the seat belt buckle and latex glove were 5.91 trillion


271 TrueAllele Technology is a system designed by a company in the United States, known as Cybergenetics. Cybergenetics was founded in 1994 by Dr. Merlin Perlin, as a consequence of his research on the Human Genome Project. Describing the origins of the company, its website states: ‘Dr. Perlin created automated STR interpretation and analysis technology that could easily analyse and interpret DNA rapidly, and cost effectively, while reducing human error.’ In relation to TrueAllele technology the website explains that the company offers a wide range of services: ‘Cybergenetics suite of TrueAllele technology products provides any organization processing STR DNA with a sophisticated range of computer automated interpretation, search and match capabilities.’ For further information see: http://www.cybgen.com/company/history.shtml.

times more likely to be Duffy's than another randomly selected individual, while the sample from the phone was 6.01 billion times more likely to belong to Shivers than another randomly selected individual.\textsuperscript{273}

It was the first time that this novel system had been presented in a court of law in the UK (it had been accepted for the first time in the US in 2009).\textsuperscript{274} The defence strongly challenged the admissibility of the evidence, focusing on two issues: the credibility of the method used and Dr. Perlin's vested interest in getting the method legally accepted.\textsuperscript{275} However, despite the challenge, the judge ruled that the DNA evidence provided by Dr. Perlin was both credible and reliable, thus it was deemed admissible.\textsuperscript{276} Ultimately, as a result of Shivers DNA being found in the car and on the matches near the burnt out car, the judge held that there was a strong inference that the defendant was connected to the vehicle and the offence; he was subsequently convicted and sentenced to 25 years in prison for the double murder.\textsuperscript{277} However, Duffy's charges were dismissed as the judge found that there was insufficient evidence to convict him of the murders.\textsuperscript{278} While the judge accepted the DNA evidence linking Duffy to the car, he held that the prosecution had failed to link Duffy to the murder plot. \textsuperscript{4}Consider that there is insufficient evidence to satisfy me beyond reasonable doubt that,

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{273} Massereene murder trial told of DNA doubts” The Irish Times (6 December 2011).
\item \textsuperscript{274} Commonwealth of Pennsylvania v Kevin J. Foley, Indiana County, No. 1170, Crim. 2009). In April 2006, John Yelenic was slashed to death in Blairsville in Pennsylvania. The murder weapon was never recovered but DNA was collected from under the victim's fingernails, although only a tiny amount of DNA was recovered. During the police investigation it was discovered that the victim's estranged wife's boyfriend (Kevin Foley) had a scratch on his forehead. DNA collected from Foley matched the DNA obtained from the victim. However, given the tiny quantities of recoverable DNA, the FBI were unable to produce a full DNA match, resulting in low match statistics. The prosecutors employed Dr. Perrin to utilise his TrueAllele system to analysis the results of the DNA match, in an attempt to increase the statistics of the match. The system returned a match probability figure of 189 billion. The evidence was admitted at trial and Foley was subsequently convicted of first degree murder. See Perrin M and Sinelnikov A, —An Information Gap in DNA Evidence Interpretation” (2009) 4(12) PLoS One 6.
\item \textsuperscript{275} Massereene judge to rule on Dr. Mark Perlin's DNA evidence” BBC News (1 December 2011). See http://www.bbc.co.uk/news/uk-northern-ireland-15972837.
\item \textsuperscript{276} Judge allows DNA evidence in Massereene trial” RTE News (1 December 2011), available at: http://www.rte.ie/news/2011/1201/massereene.html. Mr. Justice Anthony Hart held that I am satisfied that the stage has now been reached in the case of this system where it can be regarded as being reliable and acceptable and I am satisfied that Dr. Perlin has given his evidence in a credible and reliable fashion ... In the light of this conclusion, I can see no basis under which I could possibly exercise my discretion to exclude this evidence and I therefore admit it in evidence.” Judge allows DNA evidence in Massereene trial” RTE News (1 December 2011).
\item \textsuperscript{277} McDonald H, —Massereene murders: Brian Shivers jailed for 25 years” The Guardian (February 2012). Available at: http://www.guardian.co.uk/uk/2012/feb/10/massereene-murders-brian-shivers-jailed. Justice Hart accused Shivers that he had invented an alibi for the night in question and noted “Taking all of these matters together, I am satisfied that the prosecution has proved beyond reasonable doubt that Shivers set fire to the Cavalier at Ranaghan Road (where the car was abandoned) and I therefore find him guilty on each count.” See Republican guilty of Massereene barracks murders” The Independent (UK) (20 January 2012). Available at: http://independent.co.uk/news/uk/crime/republican-guilty-of-massereene-barracks-murders-6292361.html.
\item \textsuperscript{278} Ibid.
\end{itemize}
\end{footnotesize}
whatever Duffy may have done when he wore the latex glove or touched the seatbelt buckle, meant that he was preparing the car in some way for this murderous attack. And I therefore find him not guilty.”

In essence, the issues surrounding LCN DNA technology (and other novel techniques that enable an individual to be linked to a crime scene) are indicative of the benefits and concerns that surround the broader use of DNA within the criminal process. It is difficult to dispute their potential value for a criminal investigation. However, despite this recognition, it is imperative that it is also recognised that the probative value of a DNA ‘match’ needs to be subject to sufficient scrutiny to maximise the veracity of the ‘match’ in question (incorporating issues such as the relevance of the sample, the methods used to gather the sample and whether necessary safeguards are in place and were adhered to).


280 In addition the admissibility of the evidence adduced from these novel scientific techniques raises interesting questions for the criminal process. Forensic evidence in a trial setting is presented by a forensic expert. In law an expert is defined as an individual who, by virtue of specialised training, particular knowledge or experience, ‘is able to assist the legal system (a) in determining what the facts are, relevant to a particular case, and (b) by offering opinion about what the facts might mean for the reconstruction of a course of events or the outcome of a decision”. See Smith R and Wynne B (eds), Expert Evidence Interpreting Science in the Law (Routledge 1989), 4. As the use of forensic science has expanded, so too have the concerns surrounding the admissibility of derived evidence, often on the issues of reliable and unreliable expert evidence. For interesting criticisms of the law’s tendency to admit unreliable evidence see Huber PW, Galileo’s Revenge: Junk Science in the Courtroom (Basic Books 1993); Giannelli PC, ‘Junk Science’: The Criminal Cases” 84 Journal of Criminal Law and Criminology 105. The reliability of scientific evidence has received relatively little debate in Ireland, which resulted in Professor Imwinkelried, a leading authority in the law of evidence, to argue that Ireland should adopt a similar approach to the United States, by introducing reliability as a formal admissibility requirement. See Imwinkelried EJ, ‘Junk Science’ in the Courtroom: Will the Changes in the American Law of Expert Evidence Influence the Irish Courts” (2004) 26 DULJ 83. The ‘general acceptance’ test postulated by Frye v United States 293 F 1013 (DC1923) is a seminal case for the admissibility of evidence in the US. In short, it requires a person who is an expert witness to show that the scientific evidence being adduced has been validated or endorsed by the large majority of other experts within that particular field. The Frye standard was amended by the Daubert v Merrell Dow Pharmaceuticals (1993) 509 US 113. In Daubert the US Supreme Court, while recognising that evidence should be relevant and reliable, placed emphasis for admissibility on the 1975 Federal Rule of Evidence 702. However, the new standard placed the duty to assess the veracity of scientific evidence at the discretion of the judge who would consider a number of factors when arriving at such a decision: whether the theory or technique can be (or has been) tested, whether it has been subject to peer review; whether the potential error rate is known and whether the procedure and its results have been the subject of general acceptance within the scientific community. It has been argued that allowing the judiciary the role of assessing the veracity of a scientific technique is problematic; see Foster KR and Huber PW, Judging Science (MIT Press 1999), 226–228. However, Heffernan has argued that the adoption of the current US procedures in Ireland would currently be procedurally problematic, as Ireland does not operate a pre-trial admissibility hearing (which is usually conducted in cases involving scientific evidence in the US). For further commentary on the Irish system see also Heffernan L, Scientific Evidence: Fingerprints and DNA (First Law 2006).
2.6. Tackling the ‘CSI Effect’

Despite the concerns outlined above surrounding the potential problems associated with DNA profiling (chain of custody issues, contamination, data handling errors, misinterpretation and adventitious matches), it is important to re-emphasise that when used correctly and within the appropriate context (assuming the necessary safeguards and checks and balances are established) DNA profiling can be a useful tool for criminal investigation and a powerful form of evidence adduced in a court of law. However, herein rests one of the major concerns in using DNA profiling within the criminal justice system. As mentioned earlier currently there is a public perception of infallibility surrounding the evidence adduced from DNA technology. Phrases such as _CSI Effect_ and _Tunnel Vision_ have become regular ‘buzz’ words when referring to the interaction of DNA and the criminal process (in relation to the conflation of DNA evidence with guilt). Thus it is vital if the state is to continue (and expand) the use of DNA within the criminal process that it addresses a number of potentially problematic areas, _inter alia_, the overuse of rhetoric and lack of objective analysis when discussing DNA, the misconceptions surrounding the probative value of a DNA match and the need to improve the presentation of DNA in the trial setting.

---

281 Schweitzer NJ and Saks M, “The CSI Effect: Popular Fiction about Forensic Science Affects the Public's Expectations about Real Forensic Science” (2006-2007) 47 Jurimetrics 357, 358. This perception of DNA evidence as irrefutable or infallible is often referred to as the ‘CSI effect’. Traditionally it postulates that a juror’s judgments and perceptions of evidence in a case are potentially clouded when presented with DNA evidence. Research in the U.S. has indicated that jurors often associate DNA with guilt and have difficulty separating the two. In the absence of empirical evidence to the contrary it would seem reasonable to proceed on the assumption that Irish jurors are equally susceptible to the CSI effect. The main problem created by the ‘effect’ is the impact it will have on an individual’s right to a fair trial, which is guaranteed by Art 38.1 of the Constitution and Art 6 of the European Convention of Human Rights (ECHR). If DNA evidence is to be used it will be necessary to introduce evidential rules which have the capacity to remove the mystique of DNA while retaining the relevance and probative value of a particular piece of DNA evidence. For detailed discussion on the presentation of DNA evidence in court see Heffernan L, _Scientific Evidence: Fingerprints and DNA_ (Firstlaw 2006), chapter 9; LRC Report, _The Law Reform Commission Report: The Establishment of a DNA Database_ (LRC 78 – 2005), Chapter 5. Available at: www.lawreform.ie.


283 The public’s misperception is often fostered and exacerbated by sensationalistic journalism, which is evident in the following passage by an Irish journalist whilst discussing the merits of a DNA database in Ireland: _CSI is one of the most popular programs on television. In fact, we love a good thriller, especially when the unlikely heroes are the white-coated boffins who deftly distil, inspect, probe and scrutinize bodily fluids, prints and minute fibers. Of course, in the real world, it isn’t possible to put a drop of blood in a pipette, whizz it about and display its full DNA strand, all before the ad break. It takes two or three days, at least, to culture the unique, replicating double helix successfully, and then you have to have someone to compare it to before the sharp-suited detective can point the finger. And, in real life, labs aren’t huge, bright, state-of-the-art areas with scientists standing at the ready, and policemen wandering about barking orders. But real life reflects TV in one_
2.7. Conclusion: Genetic Justice

There has been an exponential demand for the use of forensic science during modern criminal investigations, based primarily on the continuing development and potential of forensic science to produce useful information (from both an intelligence and evidential perspective). Of particular interest has been the increasing ability of forensics to aid the intelligence aspect of the pre-trial criminal process. As a recent report of the forensic laboratory in Ireland, the Kopp report, observed:

There is also increased recognition that forensic science should be an integral part of the investigation and justice process. The work of a forensic laboratory does not only concern evidence for the courts but should also give impulses to way: DNA is irrefutable.' See Ryan S, ‘Examining the evidence for an Irish DNA Database’ The Irish Independent (10 August 2007).

284 It is important to consider that no matter how reliable a particular fact finding technique is deemed to be it cannot be considered in isolation from the evidential requirements of the common law adversarial system. Therefore as the IHRC note ‘No matter how reliable the analytical results may be, the investigatory stage cannot be separated from the evaluating stage of the DNA evidence. The entire process is crucial to the overall reliability of DNA evidence in the determination of guilt or innocence of the accused.’ See Irish Human Rights Commission, Observations on the General Scheme of the Criminal Justice (Forensic Sampling and Evidence) Bill 2007 (1 August 2007), 49. Available at: http://ihrc.ie/publications/.

285 A major concern, or as Walker and Stockdale articulate it, ‘a grave danger’ is that juries are _seduced by the purity of the science without fully considering the impurity of its application_. See Walker, C and Stockdale, R, ‘Forensic Evidence’ in Walker, C and Starmer, K (eds), Miscarriages of Justice (Blackstone, 1999), 149. Despite the potentially problematic nature of DNA evidence, it is rarely subject to extensive legal challenge and often becomes conflated with conclusive proof of guilt. Findlay and Grix argue that the reluctance of the legal profession to challenge DNA evidence _has given this evidence form a degree of legitimacy that enhances its attractiveness as a crucial evidentiary element in the prosecution case._ See Findlay, M and Grix, J, _Challenging forensic evidence? Observations on the use of DNA in certain criminal trials_ (2003) 14(3) Current Issues in Criminal Justice 269, 270. A key concern is in relation to the probability ratios presented to a jury that may sway reasonable doubt, particularly in cases based upon circumstantial evidence, with DNA _the centre piece of a circumstantial case and only require corroboration of the slightest form to confirm its significance_. Ibid, 272. Roberts, among others, questions the suitability of jurors _when faced with evidence which they may not be competent to evaluate_. See Roberts, P, ‘Science in the criminal process’ (1994) 14 Oxford Journal of Legal Studies 470 at 496. Thus as alluded to earlier, when considering the impact of DNA on the criminal process, it is important to consider a suspect’s right to a fair trial under Article 38.1 of the Constitution and Article 6(1) of the ECHR. A major concern that is commonly associated with the presentation of DNA evidence is the _prosecutor’s fallacy_. Two important questions can be deduced from a DNA profile matched to a crime scene. First, 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 DNA profile matches that found at the crime scene? 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; as Goode states _the prosecutor's fallacy is that the statistics of the match necessarily translate into the equivalent chance of the accused being guilty_. See Goode M, _Some Observations on Evidence of DNA Frequency_ (2002) 23 Adelaide Law Review 45, 50. For useful accounts of the _prosecutors fallacy_ and the importance of corroborating DNA evidence (and resultant issues) see LRC Consultation Paper, Consultation Paper on the Establishment of a DNA database (LRC CP – 39 -2004), 239–244; Irish Human Rights Commission, Observations on the General Scheme of the Criminal Justice (Forensic Sampling and Evidence) Bill 2007 (1 August 2007), 50. Available at: http://ihrc.ie/publications/.
the investigation process. The findings of the laboratory can often give valuable information that can assist the investigation or can be used as intelligence. Thus there is a need to improve the co-operation between the forensic science laboratory and the police and to improve the forensic awareness in all levels of the police.286

This investigation utility and intelligence capacity of DNA profiling and in particular a DNA database is grounded in a number of factors: inter alia, DNA is found in virtually every cell in the human body (with the exception of red blood cells), this combined with the design of the body to shed cells on a daily basis; the fact that DNA can be extracted from every sample containing a nucleus and each nucleus contains the same information no matter which cell it is derived from; the ability to collect relevant samples from both individuals and crime scenes, from which comparable DNA profiles can be derived; and the more recent intelligence gathering ability of ‘housing’ the collected profiles on a searchable repository allowing individuals to be rapidly included or excluded from an investigation.

A concern is that since its introduction to the criminal process DNA profiling has been afforded an almost ‘white knight’ status. Its potential benefits have seduced both the police and the general public. It is difficult to dispute the fact that in theory, DNA profiling (particularly in conjunction with a DNA database) is a potentially powerful policing instrument. For example, the ability of DNA profiling to reach back through time and provide the ‘silent witness’ for an otherwise unsolvable cold case has created a dangerous and distorted nature to elements of the debate.287 By drawing on this alluring potential and these high profile success stories, it is unsurprising that DNA databases have grown exponentially in recent years. A 2009 Interpol report has indicated that 54 countries have established a DNA database for the purpose of criminal investigation, up from 16 in 1999 and 1 in 1995.288

The difficulty with the DNA debate, similarly to the majority of issues that engage the criminal process, is that two archetypically opposed viewpoints habitually come to the fore:

287 Recent high profile murder cases aided by a DNA profile (such as Sally Ann Bowman in the UK, Katie Sepich in the US and Teresa Cormack in New Zealand, which will all be discussed in the subsequent chapter) have all exemplified this concern. See also M’Charek A, ‘Silent Witness, Articulate collective: DNA evidence and the inference of visible traits” Bioethics 22(9), 519. The phrase often used in Media coverage of DNA cases see —Silent Witness: Police find DNA link in murders of school pupil and Bunny girl” The Daily Mail (27 September 2007).
namely, those strongly in favour and those vehemently against. Those in favour acknowledge the phenomenal potential of DNA profiling for criminal investigation. For example, current technology allows a DNA profile to be obtained from minute biological "traces" obtained from a crime scene (e.g. skin cells on a door handle, saliva on a cup, blood droplets on the floor). They argue for wide DNA sampling powers and lengthy retention periods: i.e. as large a database as possible. The rationale of those in favour is primarily founded on enhancing and realising the investigative potential of this powerful technology. In contrast, those against emphasise the serious ethical, human rights and due process concerns created by utilising DNA within the criminal process. They argue that the sampling, retention and use of an individual's DNA by the state are highly invasive processes which necessitate substantial justifications.

Thus the difficulty lies in attempting to reconcile these competing values and avoiding the impasse that often stifles progressive debate. The purpose of the next chapter is to examine this issue. It will assess the traditional values and protections underpinning the criminal process and question whether DNA, DNA databasing and novel DNA techniques can be incorporated in a manner that pays homage to the diverging schools of thought in the area of DNA profiling by adopting an approach that seeks to utilise the developments (and potential criminal investigation benefits) afforded by this technology but in a manner that ensures that those targeted by the process are adequately (and continually) protected from these developments.

Beyleveld suggested that the DNA debate can be separated into two camps; "Camp Enthusiastic" and "Camp Hostile". Beyleveld D, "Ethical issues in the forensic applications of DNA Analysis" (1997) 88 Forensic Science International 3–15.
3. ‘Striking the Right Balance’: DNA and Criminal Justice Values

3.1. Introduction

The adoption and continued incorporation of DNA within the criminal process is presenting exciting criminal investigation opportunities for the state. However, the use of DNA during a criminal investigation also creates significant human rights and due process concerns for those individuals subject to its use during an investigation. Thus, similarly to all fact finding or intelligence gathering technology, the use of DNA within the criminal process will have to be reconciled with the traditional boundaries and values of the criminal process in which it is operating.

A difficulty is that often dialogue on this issue (particularly within political discourse) is located within the concept of ‘striking the right balance’. However, as will be elucidated within this chapter, the concept of balance is extremely complicated. It should not be seen as a default setting for the discourse and debate surrounding criminal justice policy, often to the detriment of individual rights and due process values. Instead infringements of individual rights and due process values should be located within clear and reasoned justifications which are predicated upon and developed through a process of independent analysis and civic engagement. Given the enhanced threat to individual rights and due process values within an increasingly punitive criminal justice system, it is imperative that we are vigilant against an overuse of and under-justified reliance on the concept of balance. This chapter will introduce a normative ‘reflective’ framework for the use of DNA profiling within the criminal process, as an amenable solution to the unique problems presented and exacerbated by this technology.

3.2. Criminal Justice Values

Recent criminal justice policy has regularly seen increases in the powers and provisions afforded to the coercive arm of the state (the police) to investigate crime, such as increased powers of stop and search, of search and seizure, of arrest and detention for the purposes of police questioning and of gathering evidence (including sampling individuals for bodily
While these powers impact heavily on individual human rights (such as privacy, liberty and bodily integrity) and due process values (such as the right to silence, the presumption of innocence, the privilege against self-incrimination, the right to legal counsel, time limits for police detention and authorisation requirements for certain police procedures (such as a search or seizure)), the right of a state to investigate crime is seen as a legitimate and necessary facet of an operating society. Therefore, generally proportionate interference with the aforementioned human rights and due process protections are accepted when justified and conducted in accordance with the law.

To help achieve this proportionality a number of safeguards, buffers, obstacles and equalising measures have developed to ensure that an adequate balance is struck between the state’s right to investigate and detect crime and the rights of those who are targeted by the process. The extent of these protections and buffers is heavily dependent on cultural and jurisdictional systems. They will often reflect the values or priorities of a particular society in relation to pursuing, identifying and subsequently arresting and convicting those guilty of an offence.

Determining such boundaries or values (involving issues of preference and/or priority) has long been subject to intensive debate. Such debate is understandable: criminal justice is a popular staple of the media culture in modern society, filling the prime time television slots while regularly occupying the front pages of both our ‘fact’ and ‘tabloid’ media outlets. This obsession is predicated on the belief that the criminal justice system is perceived as necessary in modern society, to keep us safe, by providing protections and mechanisms to ward off and safeguard us against the ‘barbarians at the gate’.

Details and examples of such will be discussed from an Irish context in chapter seven.

For an excellent introduction to the various approaches to criminal justice see Zedner L, Criminal Justice (Oxford University Press 2004).


When assessing the diverging values that drive criminal justice policies it is useful to return to Packer's seminal work *The Limits of the Criminal Sanction*. Packer developed two conflicting value systems that compete for priority in the operation of the criminal process. Neither was considered to represent the actual reality and neither was offered as a normative model. Rather they were to reflect a spectrum, upon which the successive stages of the criminal process could be represented. As Saunders and Young note, "Use of the models enables one to plot the position of current criminal justice practices at each stage, as well as to highlight the direction of actual and foreseeable trends along any given spectrum." Packer proposed two theoretical models of the criminal process: namely the due process model and the crime control model. In attempting to understand and reconcile the "conflicts" within the criminal process it is helpful to retain Packer's notion that the criminal justice system can be characterised as a "constant series of minute adjustments" between crime control measures and the relevant due process values. He summarised the tension between the two criminal process models as follows:

... two models merely afford a convenient way to talk about the operation of a process whose day to day functioning involves a constant series of minute adjustments between the competing demands of two value systems and whose normative future likewise involves a series of resolutions of the tensions between competing claims.

Packer postulated that those who prefer the crime control model, desire quick police investigations and high detection and conviction rates, encourage a dependency on police judgments and promote a system which affords "minimal opportunities for challenge". Within this value system the police are given large levels of trust and power, in the belief that effective fact-finding powers result in a more efficient system or "conveyor belt", consequently resulting in more crimes being solved. In this model, expediency is promoted as the central concern of the criminal process and consequently rights such as the right to silence are abridged by adverse inference and judicial control is substituted for executive supervision. As Packer states: "If there is confidence in the reliability of informal

---

299 Ibid.
300 Ibid.
administrative fact finding activities that take place in the early stages of the criminal process, the remaining stages of the process can be relatively perfunctory without any loss in operating efficiency.\textsuperscript{301} And as Packer concludes, the crime control model, when _reduced to its barest essentials and operating at its most successful pitch … offers two possibilities: an administrative fact-finding process leading (1) to exoneration of the suspect or (2) to the entry of a plea of guilty_.\textsuperscript{302}

Packer juxtaposed the crime control model directly with a model based upon due process values. The due process model is predicated on the rights of individuals engaged in the process by providing _obstacles_ along the _assembly_ line of the criminal process, such as the right to silence in pre-trial investigation, strict judicial oversight of police investigatory powers and the establishment of formal accountability bodies.\textsuperscript{303} The due process system, while still looking to prosecute offenders, is founded on ideals such as the presumption of innocence and respect for the rights of those engaged in the criminal process. Consequently, it emphasises that the courts as opposed to the police should be the arbiters of justice. While the police may be legitimately granted powers by the legislator to investigate and detect crime, those powers must be considered against the background of the rights of individuals in society. Therefore as the police are precluded from determining the guilt or innocence of individuals in society, the powers they are afforded must be proportionate, accountable and subject to accountability and rigorous safeguards.

In contrast to the crime control model, the due process model lacks confidence in _informal fact finding processes_.\textsuperscript{304} The due process model’s emphasis on the danger of informal fact finding procedures has proved appealing in recent years. Numerous high profile miscarriages of justice have illustrated the dangers of placing too much reliance on informal and indeed formal pre-trial investigatory procedures. These miscarriages of justice have been based upon errors (deliberate and accidental) in pre-trial investigation, ranging from forced confessions to mistaken eyewitness accounts to the application of forensic science in pre-trial

\textsuperscript{301} Ibid. 160–161.
\textsuperscript{302} Ibid. 162–163. The crime control model includes acceptance that minor mistakes will occur when identifying the guilty and innocent but considers this a proportionate price to pay for the effective repression of crime.
\textsuperscript{303} Ibid.
\textsuperscript{304} Saunders A. and Young R, Criminal Justice (3rd edn, Oxford University Press 2007), 21.
investigation.\textsuperscript{305} As Ashworth and Redmayne note about the importance of maintaining an element of scepticism over facts garnered during the pre-trial processes:

Moreover, events which occur early in the process – a mistaken identification, a false confession – can have profound implications later on. The fragility of various types of evidence should caution us to view claims about the ‘facts’ of cases, or about innocence and guilt, with a degree of scepticism.\textsuperscript{306}

Therefore, the due process model would emphasise the importance of providing protections for those engaged in the criminal justice system, at all stages of the criminal process, to attempt to prevent miscarriages of justice. It promotes the prevention of miscarriages of justice and the protection of the innocent as central, ‘The aim of the process is at least as much to protect the factually innocent as it is to convict the factually guilty’.\textsuperscript{307} Saunders and Young summarise the key conflicts between the two systems:

At the risk of over-simplification, one can summarise the main conflict in values between the two models in the following way. Crime control values prioritise the conviction of the guilty, even at the risk of the conviction of some (fewer) innocents, and with the cost of infringing the liberties of suspects to achieve its goals; while due process values prioritise the acquittal of the innocent, even if risking the frequent acquittal of the guilty and giving high priority to the protection of civil liberties as an end in itself.\textsuperscript{308}

Current discourse suggests that criminal justice policy, in western democracies such as the US, UK\textsuperscript{309} as well as Ireland,\textsuperscript{310} has been shifting from systems traditionally focused upon due process ideals to systems predicated on crime control. On this issue Garland’s seminal thesis, the \textit{Culture of Control: Crime and Social Order in Contemporary Society}, is highly


\textsuperscript{307} Packer H, \textit{The Limits of Criminal Sanction} (Stanford University Press 1968), 165.


\textsuperscript{309} See Garland D, \textit{The Culture of Control: Crime and Social Order in Contemporary Society} (Oxford University Press 2001).

persuasive.\textsuperscript{311} Garland argues that penal welfarism,\textsuperscript{312} based upon a rehabilitative ideal, which had dominated political penal policy during the early to mid twentieth century began to collapse in the UK and US in the 1970s.\textsuperscript{313} The reason for the collapse of the penal welfare state was a result of a number of factors. As Kilcommins \textit{et al}, note the penal-welfare model collapsed because its political, economic and cultural supports gave way under the weight of massive social change;\textsuperscript{314} particularly relevant were the cultural adaptations to two underlying social forces ... late modernity and the free market.\textsuperscript{315} In its place developed a schizophrenic crime control complex,\textsuperscript{316} which witnessed a decline in the rehabilitative ideal towards a more punitive, culturally conditioned and expressive form of justice.\textsuperscript{317} He argues that modern criminal justice policy is bifurcated by an adaptive strategy characterised by community partnership and a sovereign state strategy that emphasises coercive control of offenders. This divide can be attributed to a number of developments within late modernity such as the normalisation of high crime rates, the loss of faith in the rehabilitative ideal and loss of public confidence in the state to fulfil its obligation of keeping its citizenry safe.\textsuperscript{318} As a result of these factors, Garland argues, contemporary crime control policies are increasingly

\begin{footnotesize}
\begin{enumerate}
\item Garland D, \textit{The Culture of Control: Crime and Social Order in Contemporary Society} (Oxford University Press 2001).
\item Garland describes the era after World War Two as the golden age of penal welfarism. It consisted of two main ideas: i) social reform together with affluence would eventually reduce the frequency of crime and ii) the state is responsible for the care of offenders as well as their punishment and control. It embodied a belief that individuals could be reformed through expert intervention. Offenders were viewed as the creation of society as opposed to naturally evil.
\item Ibid. 23.
\begin{enumerate}
\item The dynamics of capitalism which presaged the end of a \textit{job for life} culture introduced a significant degree of economic and personal insecurity into the lives of citizens.
\item Changes in the structure of family and household made the transfer of social mores less certain.
\item Changes in urban infrastructure through the spread in ownership of the private car and the development of suburban dwellings. These in turn, partly accounted for the increasingly mobile and less communal character of social life.
\item Radio and, especially, television helped to create a consumer society through advertising and led to a demand for a greater level of accountability from political leaders, inculcating the \textit{something must be done} syndrome.
\item The democratization of social life meant that hitherto unquestioned values and norms began to be interrogated.
\end{enumerate}
\item Ibid. 26.
\item Garland D, \textit{The Culture of Control: Crime and Social Order in Contemporary Society} (Oxford University Press 2001), x.
\item The twelve indices are:
\begin{enumerate}
\item the decline of the rehabilitative ideal;
\item the re-emergence of punitive sanctions and expressive justice;
\item changes in the emotional tone of crime policy;
\item the return of the victim;
\item the imperative of protecting the public;
\item politicisation and the new populism;
\item the reinvention of the prison;
\item the transformation of criminological thought;
\item the expanding infrastructure of crime prevention and community safety;
\item civil society and the commercialisation of control;
\item new management styles and working practices;
\item a perpetual sense of crisis.
\end{enumerate}
\item Garland D, \textit{The Culture of Control: Crime and Social Order in Contemporary Society} (Oxford University Press 2001), 139.
\item Ibid. 141.
\end{enumerate}
\end{footnotesize}
dominated by punitive sanctions, expressive justice, the return of the victim and the politicisation of criminal justice issues.\textsuperscript{319}

Returning to the issue at hand (DNA and criminal justice), within Packer’s framework, the type of DNA sampling, retention and usage regime applied would differ in accordance with whether a due process or crime control value system was pre- eminent within a particular system. A model emphasising crime control would promote the applicability of DNA during a criminal investigation. The capacity of DNA analysis to rapidly include or exclude suspects from an investigation would seem to directly link with the administration ‘assembly line’ ideal of the crime control model. Within such a model the power to utilise DNA would be entrusted to the executive authority, on the rationale that the police are the appropriate arbiters of DNA collection, retention and usage while issues such as collection and retention should be assigned to as wide a range of people as possible. The capacity of DNA for the location and identification of a suspect would enable an individual to rapidly progress through the system. The concept of a DNA database would be particularly amenable to a crime control ideology. The ability to store the information of those suspected of crimes or known to the police, who can be subject to a rapid search on the location of DNA at a crime scene, is particularly appealing to those of a crime control persuasion. As Epstein notes ‘it [a DNA database] helps to identify offenders, make earlier arrests, secure more convictions and provide critical investigative leads for police investigations’.\textsuperscript{320} Under the crime control regime questions that currently surround retention, such as ‘who should be subject to sampling?’ and ‘for how long?’ would be answered by as large a database as possible (possibly a universal database), if it were deemed to be the most efficient means of achieving the desired level of crime control.

In contrast those of a due process persuasion would argue that while DNA profiling has the potential to be a useful procedure for the criminal process, given the potential impact that it may have on individual rights, its application should be minimised and subject to restriction and oversight. Steps to prevent ‘fishing expeditions’ and flagrant use of DNA sampling would involve police officers satisfying standards (such as the two step test: the individual is reasonably suspected of the crime and the DNA sample is relevant to the investigation of the offence) before an application for a DNA sample could be sought from an supervising body (such as a judicial authority). In addition, those favouring a due process approach would call

\begin{footnotesize}
\textsuperscript{319} Ibid.
\end{footnotesize}
for adequate governance and supervisory regimes to regularly review and audit the DNA mechanisms afforded to the state so as to ensure that those targeted by the process are adequately protected. Those in favour of the crime control model would argue that such procedures and protections are overly idealistic and in the practicality of modern everyday policing would be inefficient, a waste of both time and resources and would therefore be less effective in solving crime.

The difficulty for discussing the DNA debate from a dualist perspective is that we inevitably become trapped in a _revolving door_ debate, in which those from the crime control school will maintain their support for the wide applicability of DNA profiling within the criminal process, while those of a due process persuasion will advocate its minimal use. Therefore to avoid this impasse it would seem necessary to adopt a framework with an inbuilt reconciliatory mechanism. Ashworth and Redmayne, who have been stern critics of Packer's two models, put forward such a framework in the form of a principled rights-based approach. The main criticism they level at Packer's framework is that the models fail to resolve the inherent conflicts within the criminal justice system between the competing interests involved: i.e. suspects, victims and society at large. For example, Ashworth and Redmayne's principled approach includes rights for victims (both to respect and to receive compensation) which attempt to fill the _victim void_ in Packer's models. In addition to the _victim void_, Packer's framework has also been accused of failing to incorporate other important stakeholders. Therefore as Saunders and Young state, _Despite the clarification_

---

322 Ibid. 39.
324 For example, Choonagh argues that Packer's models fail to address a pertinent issue in relation to a significant number of arrestees. See Choonagh S, _Policing the Dross: A Social Disciplinary Model of Policing_ (1998) 38 British Society of Criminology 623. Choonagh asserts that a large number of arrestees are subjected to arrest for a social control purpose as opposed to strictly entering the criminal process: _Arrest and detention is not, for this group of individuals, the stepping stone onto Packer’s conveyor belt or the first stage of the obstacle course. It represents instead a self contained policing system which makes use of a legal canopy to subordinate sections of society viewed as anti-police and innately criminal._’ Ibid 623, 625. Choonagh believes a _social disciplinary_ model needs to be added to Packer's original theory. A social disciplinary model is premised on the principle that: _an acceptable and efficient way to police society is to identify classes of people who in various ways reject prevailing norms because it is amongst these classes that the threat of crime is at its most intense ... the police are then justified in subjecting them to surveillance and subjugation, regardless of whether the individuals selected for this treatment are violating the criminal law at any given moment._’ Ibid. 623, 627.
provided by Packer’s models, their value is limited. In particular, they do not attempt to prescribe what the goals of the criminal process should be.\footnote{Saunders A and Young R, “From Suspect to Trial” in Maguire M, Morgan R and Reiner R (eds), \textit{The Oxford Handbook of Criminology} (3rd edn, Oxford University Press 2007), 955.} Thus Ashworth and Redmayne attempt to clarify this in their principled rights-based theory of the criminal process, arguing that the process should have the twin goals of regulating the processes for bringing suspected offenders to trial so as to produce accurate determinations, and of ensuring that fundamental rights are protected in those processes.\footnote{Ashworth A and Redmayne M, \textit{The Criminal Process} (3rd edn, Oxford University Press 2005), 55. Ashworth A, \textit{The Criminal Process: An Evaluative Study} (2nd edn, Oxford University Press 2009), 315–316.}

The principled approach, developed originally by Ashworth in respect of the criminal process, is predicated on principles and human rights. The approach emphasises the importance of safeguarding rights against consequentialist claims in relation to community welfare.\footnote{Saunders A and Young R, \textit{Criminal Justice} (3rd edn, Oxford University Press 2007), 24. Saunders and Young are correct in observing that while policing is an important element within the criminal process, policing itself incorporates a myriad of tasks from directing traffic, to offering information, to providing an intangible sense of protection to a local community. Ibid. 25. Therefore it would have been incorrect for Packer to adopt an all encompassing view of policing within the formal criminal justice process. Packer did note that the crime control model encompassed elements of ‘social disciplining’. However, these elements were to be considered part of the crime control ideology as opposed to a separate model of the criminal process. For example, the crime control model rejects the concept of reasonable suspicion: _people who are known to the police as previous offenders should be subject to arrest at any time for the limited purpose of determining whether they have been engaging in anti-social activities ..._. Packer, H. \textit{The Limits of Criminal Sanction} (Stanford University Press 1968), 177. Contrast Choonagh’s assertion that _Having arrested individuals once, this in itself becomes reason for keeping them under surveillance … an individual becomes permanently suspect rather than a suspect for a particular offence._ See Choonagh S, \textit{Policing as Social Discipline} (Clarendon 1997). Saunderson V. See Saunders and Young criticise this approach as they argue that Packer was constructing models of the criminal process, not of policing – therefore it is not surprising that ‘social disciplining’ was not central to his analysis. Saunders A and Young R, \textit{Criminal Justice} (3rd edn, Oxford University Press 2007), 24. Saunders and Young are correct in observing that while policing is an important element within the criminal process, policing itself incorporates a myriad of tasks from directing traffic, to offering information, to providing an intangible sense of protection to a local community. Ibid. 25. Therefore it would have been incorrect for Packer to adopt an all encompassing view of policing within the formal criminal justice process. Packer did note that the crime control model encompassed elements of ‘social disciplining’. However, these elements were to be considered part of the crime control ideology as opposed to a separate model of the criminal process. For example, the crime control model rejects the concept of reasonable suspicion: _people who are known to the police as previous offenders should be subject to arrest at any time for the limited purpose of determining whether they have been engaging in anti-social activities ..._. Packer, H. \textit{The Limits of Criminal Sanction} (Stanford University Press 1968), 177. Contrast Choonagh’s assertion that _Having arrested individuals once, this in itself becomes reason for keeping them under surveillance … an individual becomes permanently suspect rather than a suspect for a particular offence._ See Choonagh S, \textit{Policing as Social Discipline} (Clarendon 1997). Saunderson V.} Thus the approach attempts to place the rights of the individual at the centre of the process, while allowing the use of a procedure once particular grounds have been satisfied (such as reasonable suspicion accompanied by effective safeguards); it attempts to minimise the human rights violations that accompany the application of these procedures. It derives its basis from the growing importance and increasing recognition of rights within modern society, in particular the European Convention on Human Rights. Morgan has praised the principled rights model as more nuanced, subtle and multi-dimensional than models which
tend to reduce the world to black and white’. From the perspective of this thesis, it is particularly useful given the existence of a written constitution in Ireland that outlines a series of personal rights for the individual and the recent incorporation of the European Convention on Human Rights into Irish law in 2003.

For the purposes of thoroughness it is important to acknowledge that Packer was not alone in attempting to construct models of the criminal process. For example, similarly to Packer’s polarised spectrum, Goldstein separated the debate, into two camps, ‘idealists’ and ‘realists’ (each reflecting public sentiment in relation to the criminal process): ‘Idealists were willing to sacrifice efficiency in the criminal process in order to prevent abuse of official power ... realists wanted to repress crime with as few procedural restrictions as possible.’ Other commentators have attempted to build upon Packer’s modelling framework in an attempt to encompass the values and interests neglected by it. For example, Bottoms and McClean offer a third ‘liberal bureaucratic model’ to encompass the economic concerns that are vital to an operating criminal justice system. Similarly, King drafted an additional ‘multi-theoretical approach’ consisting of four models, namely medical model, status passage model, power model and bureaucratic model, focusing on the desire of the state to rehabilitate, manage, denOUNCE, and dominate suspects and offenders. Roach argued that Packer’s models were reflective of the time and place in which they were written. It is an open question how applicable Packer's models are outside of the 1960s. Thus he proposed two models necessary to update Packer's framework, the ‘punitive model of victims’ rights’ and the ‘non-punitive model of victims’ rights’.

---

329 Section 2 of the European Convention on Human Rights Act 2003 imposes an obligation on the Irish courts to interpret statutory provisions and rules of law with regard to the European Convention on Human Rights. Moreover, enacted legislation should also be constructed in a manner so as to be consistent with ECHR. While s. 3 obliges every organ of the state to exercise its functions in accordance with ECHR.
331 See Bottoms A and McClean J, Defendants in the Criminal Process (Routledge 1976).
From the perspective of this thesis, a pertinent modelling process was proffered by Corns. He argued that the development of DNA technology can be divided into three models of interpretation: a legal model, a libertarian model and a scientific model. The legal model (similar to Packer’s crime control model) is premised on the rationale of convicting the guilty. The libertarian model (similar to the due process model) questions whether the utilitarian benefits of DNA outweigh the abandonment of sacred cows such as the right to silence, burden of proof resting upon the Crown, and the right against self incrimination. The scientific model focuses on the scientific issues surrounding DNA technology such as sampling errors and probability issues. Corns correctly observes that the problems associated with adopting a single model by noting what is missing from these models are links between the deployment of DNA technology and broader socio-political trends in the context of criminal justice.

In the context of this thesis an important element of Corns’ models is the recognition of the interdisciplinary relation created by utilising DNA within the criminal process, namely law and science. Word constraints prevent a detailed analysis of this area but it is worth noting

338 Ibid.
339 Thornton provides a useful overview of the inherent difficulties in the relationship between law and science: Basic conflicts that influence the practice of forensic science become apparent at the interface of law and science. Law and science on occasion have conflicting goals, each having developed in response to different social attitudes and intellectual needs. The goal of law is the just resolution of human conflict, while the goal of science traditionally has been cast, although perhaps too smugly, as the search for truth. Certainly there is nothing intrinsically dichotomous in the pursuit of these goals: the court or jury strive in good faith to determine the truth in a given situation as a way to resolve conflicts. But proof is viewed somewhat differently by law and science, as are the application of logic and the perception of societal values. Numerous writers have commented on these differences, including Glanville Williams in his Proof of Guilt (1958): The principles of [the legal system] are not the product of scientific observation, but embody a system of values. These values do not necessarily have to be changed with the march of knowledge of the material world ... The rule conferring upon an accused the right not to be questioned ... may be a good or a bad rule, [but it] has certainly not been made better or worse by the invention of printing or the aeroplane. How, then, do these differences between law and science lead to abuse of forensic science? They do simply because all the players want to win and are likely to use any ethical means at their disposal to do so. The attorneys in a case are aligned with only one side, and it is entirely appropriate under the adversary system for them to advocate a particular point of view, even without full and fair disclosure of all relevant facts. Subject only to the rules of evidence, and the rules of procedure, and the Code of Professional Responsibility, attorneys are free to manipulate scientific evidence to maximise the opportunity for their side to prevail. Not only is behaviour of this sort countenanced by the law, it is the ethical responsibility of counsel to attempt to do so.” Thornton JL, ‘Uses and Abuses of Forensic Science’ in Thomas W (ed), Science and Law: An Essential Alliance (Westview Press), 86–88. For further reading on the relationship between law and science see Van Kampen PTC, Expert Evidence Compared: Rules and Practices in the Dutch and American Criminal Justice System (Intersentia Rechtswetenschappen 1998), 2; Heffernan L, Scientific Evidence: Fingerprints and DNA (First Law 2006); Roberts P, ‘Science in the Criminal Process’ (1994) 14 OJLS 469; Petherick W, Turvey B and Ferguson C, Forensic Criminology (Elsevier Academic Press 2010), 89; Wonder AKY, ‘Science and Law, A Marriage of Opposites’ (1989) 29 J For Sci Soc 75; Rubin EL,
a subsequent article by Corns in which he examines the fascinating relationship between science, law and criminal justice. Arguably Corns’ most interesting observation in the article is the notion that science (particularly DNA profiling) is appropriating the procedures and values underpinning the criminal justice process. As Walsh notes, ‘The efficiency associated with new technologies, the concept of infallible scientific truth and the neutrality of DNA science are seen as factors driving the appropriation process.’ Corns justifies this approach by explaining that science is represented as having no ideological or political interest in the outcome of the case, [and that] the apparent neutrality and infallibility of science becomes the ideological justification for what politically are more repressive criminal laws and practices.

The potential implications resulting from this alleged appropriation are extremely significant. It moves a criminal justice system away from a foundation which heavily relies upon the exercise of discretionary powers, subjective judgements and the application of values towards one based on a scientific method that connotes a value free, objective systemisation of decisions and processes where discretionary and subjective judgements are minimised, if not totally eliminated [and] the truth assumes a mathematical perspective. Corns argues that the technological evidence that is appropriating the criminal justice system is an example of how the system is moving away from the mind of the offender and towards the tangible nature of the accused, i.e. the body of the offender. Corns suggests that this is just the beginning of a trend, that technology will eventually eliminate the need for juries or judges to adjudicate on questions of a subjective nature. While such an assertion is highly debatable,
it is a point that should not be ignored.\textsuperscript{346} Thus as technology continues to develop and becomes progressively more intertwined with the criminal process, it will be increasingly important for us to consider the long-term ramifications of this escalating reliance on technology.\textsuperscript{347} A key question to address is that by adopting a scientific technique or allowing a scientific technique such as DNA profiling to have such a profound impact upon the criminal justice system is the system at risk of subjugating core values and principles in the face of a desire to utilise DNA evidence?\textsuperscript{348}

Returning to the modelling process, while the attempts to add further models to Packer's framework illustrate that Packer's original framework is perhaps too selective to adequately encompass the workings of the criminal process, it is suggested that additional modelling regimes suffer from similar deficiencies.\textsuperscript{349} As observed by Walker and Telford a major concern with the modelling approach is that in essence we could continue to draft models for example, Kellie DL, "Justice in the age of technology – DNA and the criminal trial” (2001) 26 Altern Law Journal J 173–176.\textsuperscript{346} Recent developments may suggest that such controversial assertions may be closer to fulfillment than one might first imagine. A current example is the technology of Brain Fingerprinting, which is gaining momentum in a number of jurisdictions at present. Brain Fingerprinting is a controversial forensic science technique that uses brain-reading techniques to determine whether specific information is stored in a subject's brain. It does this by measuring electrical brainwave responses to words, phrases, or pictures that are presented on a computer screen. See Patowary AJ and Bairagi KK, "Lie detection: different methods with special discussion on brain fingerprinting” (2010) 10(2) Medico-Legal Update - An International Journal 37.\textsuperscript{346} The concept of 'function creep' or 'mission creep' has been clearly evident in the use of DNA within the criminal process. However, an additional concern that we should perhaps begin to be considering is the concept of 'function leap'. The Human Genetic Committee defines 'function leap' as 'collateral uses of [genetic information] that would move it significantly away from its original function by exerting a pull towards a wholly new set of functions. Rather than these functions being additional to the original function, they would supplant it, co-opting the resource to a more urgent or important objective'. The example the Commission uses is the material on the UK DNA database moving from being exclusively a criminal identification database to a society wide biometric identification system. Thus it is important to consider the normalisation of genetic and biometric retention in modern society. Such normalisation in combination with vague parameters for the use of retained genetic material creates an atmosphere in which the concept of 'function leap' may become a bona fide possibility. See Human Genetics Commission, Human Genetics Commission (UK), Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance and use of the National DNA Database (November 2009), 82–83.\textsuperscript{346} Walsh JS, "Legal perceptions of forensic DNA profiling Part I: A review of the legal literature” (2005) 155 Forensic Science International 51–60, 53.\textsuperscript{346} The debate surrounding the purpose of a criminal justice system or the values that should be enshrined within such a process is a deeply complicated area and a definitive conclusion is beyond the scope of this thesis. For an example of the complexities of the subject, see the fascinating, spirited and often conflicting debates surrounding the area in the mid 1990s in the British Journal of Criminology. See Smith D, "Case Construction and the Goals of the Criminal Process" (1997) 37(3) The British Journal Criminology 319–346; Duff D, "Crime Control, Due Process and The Case for the Prosecution" (1998) 38(4) British Journal of Criminology 611–615; McConville M, Sanders A and Leng R, "Descriptive or Critical Sociology: The Choice is Yours” (1997) 37(3) British Journal of Criminology 347; Smith DJ, "Reform or Moral Outrage – The Choice is Yours” (1998) 38(4) British Journal of Criminology 616. Although not related specifically to the previous debates, see also Garland D, "The Limits of the sovereign state: strategies of crime control in contemporary society” (1996) 36(4) British Journal of Criminology 445; Henham R, "Human Rights, Due Process and Sentencing” (1998) 38(4) British Journal of Criminology 592.
from varying perspectives and interest groups ‘ad nauseam’; however, it is submitted that in the absence of an adequate means of reconciliation such an approach will only result in amplifying the tensions and potential impasses that exist within the criminal process.\(^\text{350}\)

Thus, as was introduced above, others (such as Ashworth) have abandoned the concept of model building in favour of principles and values that should underpin the pre-trial stages of the criminal process.\(^\text{351}\) A central advantage of this approach is its ability to construct a normative approach to the pre-trial process; as Zedner observes, ‘The evaluative or principled approach has the advantage of furnishing a theoretical framework that is explicitly normative rather than descriptive.’\(^\text{352}\) A central advantage of a normative principled rights-based approach is that it enables current practices to be juxtaposed with and situated against the rights and values of a particular society.

However, it is important to note that building a normative framework upon rights will not alleviate the potential conflicts that undermine the modelling (dualist) position: the main reason for this is that rights themselves tend to vary in terms of importance and represent an array of societal and communal interests.\(^\text{353}\) For example, within the European Convention on Human Rights there are a number of ‘qualified or prima facie rights’. These rights are justifiably infringed in particular circumstances. For example, Article 8 (right to privacy), allows the right to be subject to derogation ‘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 rights and freedom of others’.\(^\text{354}\) Traditionally derogation from these rights is generally only permissible if it is ‘necessary in a

---


\(^{352}\) Zedner L, Criminal Justice (Oxford University Press 2004), 119.

\(^{353}\) When discussing a rights-centric framework, it is important to note that the weight accorded to rights in any particular context depends heavily upon the current commitment to rights within a particular community. This commitment is influenced by cultural attitudes, political climate and historical context. As Zender notes ‘Promotion of rights is a variable entity extending from strong adherence to a much more attenuated conception of their place in judicial decision making.’ Zedner L, ‘Securing Liberty in the Face of Terror: Reflections from Criminal Justice’ (2005) 32(4) Journal of Law and Society 507, 519.

\(^{354}\) ECHR Article 8(1), ‘Every has the right to respect for his private and family life, his home and his correspondence’. For further reading on Article 8 see Roberts P, ‘Privacy, Autonomy and Criminal Justice Rights: Philosophical Preliminaries’ in Alldridge P and Brants C (eds), Personal Autonomy: the Private Sphere and Criminal Law: a comparative study (Hart Publishing 2001).
democratic society' and is bound by the principles of proportionality. The main difficulty for rights is that often reconciliation is located in the narrative of striking the right balance, which is complicated by the competing interests that are often involved in the process (ranging from competing individuals rights to individual rights competing with the rights of society).

Before examining and assessing the difficulties of balancing in the criminal process it is worth noting that there are those who suggest that the need to reconcile competing values within the criminal process can be avoided by adopting a dominant single value model. Such models are not new: consequential theories and utilitarian theories were famously

---


356 Braithwaite and Petit argue that the predominant value or sense of purpose should be the republican ideal of liberty. The consequentialist theory suggests that the inherent clashes in society between individual rights and public interests should be reconciled by assessing on an approach which promotes ‘dominion’ on a larger scale. ‘Dominion’ is defined as non-interference by others, secured by society and the community so as to become the expectation of each person. Braithwaite J and Petit P, Not Just Deserts: A Republican Theory of Criminal Justice (Oxford University Press 1990). The theory recognises vague limits upon state intervention in individual lives; thereby it is questionable to what extent individual human rights might be usurped in an overall pursuit of liberty. Ashworth and Redmayne have criticised this approach as leaving ‘individuals too much at the mercy of the state’. Ashworth A and Redmayne M, The Criminal Process (3rd edn, Oxford University Press 2005), 44.

357 One such example is the social integration and exclusion model. Faulkner outlines the ‘exclusion’ model as one in which ‘crime is to be prevented by efficiency of detection, certainty of conviction and severity of punishment ... criminals’ are to be seen as an ‘enemy’ to be defeated and humiliated, in a ‘front line’ in which the police are seen as the ‘front line’…’. Faulkner D, Darkness and Light: Justice, Crime and Management for Today (Howard League 1996). Faulkner directly contrasts this with Locke’s view that ‘the end of law is not to abolish or restrain but to preserve and enlarge freedom.’ As Locke states, ‘So that however it may be mistaken, the end of law is not to abolish or restrain, but to preserve and enlarge freedom. For in all the states of created beings, capable of laws, where there is no law there is no freedom. For liberty is to be free from restraint and violence from others, which cannot be where there is no law: but freedom is not, as we are told, liberty for every man to do what he lists (for who could be free when every other man’s humour might domineer over him?), but a liberty to dispose, and order as he lists, his person, actions, possessions, and his whole property, within the allowance of those laws under which he is, and therein not to be subject to the arbitrary will of another, but freely follow his own.’ Locke J, The Second Treatise of Government (originally published in 1690) ed. Macpherson, C.B. (Hackett Publishing 1980), chapter 6, paragraph 57. The inclusionary approach is that authority will not be respected if it is simply imposed: it had to be accountable and it has to be legitimate... solutions to the problem of crime have to be sought by inclusion within the community itself’. Faulkner D, Darkness and Light: Justice, Crime and Management for Today (Howard League 1996), 6. The inclusionary approach is similar to the restorative justice movement that attempts to bring together all the stakeholders involved in a particular offence (including the victim) to discuss the ramifications of the crime. On restorative justice see Hoyle C and Zedner L, ‘Victims, victimisation and criminal’ in Maguire M, Morgan R and Reiner R (eds), The Oxford Handbook of Criminology (3rd edn, Oxford University Press 2007), chapter 15 and Morgan R and Newburn T, ‘Youth Justice” in Maguire M, Morgan R and Reiner R, The Oxford Handbook of Criminology (3rd edn, Oxford University Press 2007), chapter 30. The inclusion/exclusion models of justice have been articulated by numerous theorists. For persuasive examples see Young J, The Exclusive Society (Sage 1999) and Garland D, The Culture of Control (Oxford University Press 2001). Problems surrounding a reorientation of the system towards inclusion have been articulated by Faulkner D, Crime, State and Citizen: A Field Full of Folk (Wareside Press 2001) and Saunders A, ‘Victim Participation in Criminal Justice and Social Exclusion” in Hoyle C and Young R (eds), New Visions of Crime Victims (Hart Publishing 2002). Saunders and Young argue that the inclusion/exclusion models are beneficial because they combine the comprehensiveness of the human
advocated by Bentham and Mill in the nineteenth century. While there are varying forms of these approaches, in general they tend to advocate social policies predicated upon recognising the interests of the majority over those of the few. In the context of values the argument is that the dominant value will *trump* all other values. It will provide a *focal point* or central aspiration when faced with conflicts between values. All values and conflicts would be resolved in a manner which best represents the aspirations of the dominant value.

A modern example of a single value theory is the freedom model proffered by Saunders and Young. They argue that criminal justice is rife with conflict:

> the criminal process involves conflicting values, aims, and interests, such as: convicting the guilty, protecting the innocent from wrongful conviction; protecting human rights by guarding against arbitrary or oppressive treatment; protecting victims; maintaining order; securing public confidence in, and cooperation with, policing and prosecution; and achieving these goals without disproportionate cost and consequent harm to other public services.

The difficulty is that despite illusions that each of these goals is equally achievable, the reality of the matter is that choices have to be made. Certain choices will have to be made to prioritise one set of interests over the interests of others. The choices are value choices or philosophical standpoints. In reality, no matter what perspective one adopts whether it is pro-suspect, pro-victim or even a neutral standpoint, you will inevitably be confronted by a choice. One of the difficulties is that value choices are highly subjective and reflective of an individual's cultural background. Therefore a single value or sense of purpose may have merit in attempting to bring some clarity to an extremely complex issue.

Within this single value rationale, Saunders and Young proffer *freedom* as the paramount value of the criminal justice system. They suggest that all the interests and goals of a criminal justice system in a liberal democracy can be connected to this underlying goal. They suggest:

---


Prosecution is not a valuable activity in itself: by censuring wrongdoing it should reinforce law-abiding instincts and habits, and the punishment or treatment of offenders aims to reduce their propensity to commit crime. Either way, the freedom of past and potential future victims should be enhanced through having their fear of crime reduced. Similarly we expect prosecutors to respect the rights of suspects and defendants not because protection is a goal in itself but to promote their freedom. And prosecutions are brought as one method of upholding order not because an orderly society is desirable in itself but because a degree of order is needed to enable individuals and communities to pursue their own ends.\textsuperscript{363}

Saunders and Young acknowledge that their model will not be free from conflict but they contend that \textit{under this model we keep in focus the ultimate aim of the system and can opt for compromises that are likely to maximise overall freedom}.\textsuperscript{364} Accordingly they suggest \textit{all we have to do is to prioritise the goal that is likely to enhance freedom the most}.\textsuperscript{365} While they recognise individual human rights they suggest that human rights should be seen as an \textit{ingredient} in a purposeful balancing approach aimed at \textit{achieving the overriding goal of freedom}.

There are a number of concerns with this approach. Particularly problematic is the adoption of freedom as the principal goal.\textsuperscript{366} The word freedom is a widely debated and contestable issue as Ashworth and Redmayne note: \textit{The meaning of freedom is highly contestable and when the authors state that they would include freedom \textit{of the community at large}} the glass becomes rather dark.\textsuperscript{367} They argue that the theory is \textit{under-determined} and fails to outline clearly what weight will be attributed to the \textit{competing goals, interest and rights} that are essential.\textsuperscript{368}

An additional concern is that by adopting a consequentialist or single purpose theory such proponents promote a system in which a meta-goal or value will be allowed to dominate over

\textsuperscript{363} Saunders A and Young R, \textit{From Suspect to Trial}” in Maguire M, Morgan R and Reiner R (eds), \textit{The Oxford Handbook of Criminology} (3rd edn, Oxford University Press 2007), 956.
\textsuperscript{364} Ibid.
\textsuperscript{366} For a classic essay on negative and positive liberty see Berlin I, \textit{Two Concepts of Liberty” in Quinton A (ed), Political Philosophy} (Oxford University Press 1967).
\textsuperscript{367} Ashworth A and Redmayne M, \textit{The Criminal Process} (3rd edn, Oxford University Press 2005), 44.
\textsuperscript{368} They certainly recognise the need to assign weight to them, but their confidence in \textit{the language of freedom} to smooth the path by providing a \textit{common currency} may be overdone’. Ibid.
individual human rights in pursuit of the outlined single goal or value; as Ashworth and Redmayne argue:

These theories try to reduce everything to a single value. When one considers the sheer number of different values recognised in a complex society, many of which conflict, it is difficult to believe that they can all be reduced to a single core value ... One should be suspicious of theories that attempt, as consequentialist theories do, to reduce all human values to a single metric.\textsuperscript{369}

Moreover a fundamental problem of consequentialist theories is that they essentially enable the interests of the majority to dominate individual or minority rights; as Ashworth and Redmayne observe _an obvious criticism of such a consequentialist approach is that its chief concern is with aggregate benefits and that it may therefore ride roughshod over particular individuals (or minorities) in order to benefit the majority_.\textsuperscript{370}

Therefore it is submitted that single value theories are essentially flawed, thus forcing us to return to other means of reconciling values within the criminal process. The two outlined in this thesis are dyadic models or a principled rights-based approach. Between these two choices it is submitted that the principled rights-based approach is a preferable means of resolving the inherent conflicts that occur within the criminal process. The philosophy of this approach which is based on pursuing the goals of the criminal process (such as accurate determinations) within a human rights framework is admirable, particularly in the current security conscious society.

However, a major criticism that can be leveled at the principled rights framework is that while it promotes a strong protection of human rights, it recognises that there will be occasions where an encroachment on rights may in fact be necessary, thereby returning us to the problem of conflict that undermines the dualist model system. For example, Saunders and Young suggest that it _creates as many problems as it solves_.\textsuperscript{371} Similarly, Cape notes there is a lack of reconciliatory guidance provided to deal with the inevitable conflicts that will occur between suspects, defendants and victims.\textsuperscript{372}

\textsuperscript{369} Ibid. 45.
\textsuperscript{370} Ibid. 43.
\textsuperscript{372} Cape E, Reconcilable Rights? Analysing the Tension Between Victims and Defendants (LAG, 2004).
A concern is that within a principled rights-based framework the reconciliation mechanism often proffered is the concept of ‘balance’. As Ashworth correctly observes ‘balance’ ‘is a rhetorical device of which one must be extremely wary’.\textsuperscript{373} Elaborating he states:

At worst, it is a substitute for argument: ‘achieving a balance’ is put forward as if it were self-evidently a worthy and respectable goal. Of course the criminal process is often the scene of conflicting aims and interests. Of course one would want the criminal process to be well balanced. But the difficulty is that many of those who employ this terminology fail to stipulate exactly what is being balanced, what factors and interests are to be included or excluded, what weight is being assigned to particular values and interest.\textsuperscript{374}

Within the current security conscious society the concept of balance has been subject to significant debate. Seminal writers including Dworkin,\textsuperscript{375} Schulhofer,\textsuperscript{376} Waldron\textsuperscript{377} and Zedner\textsuperscript{378} have provided fascinating accounts of the issues inherent in the balancing process. The articles predominately focus upon the ‘war on terror’ and its impact on civil liberties. Growing trends of risk and security are placing increasing pressures on some of the traditional boundaries between the individual and the state. The concern is that, as Zedner states, ‘In the name of security, things that would ordinarily be politically untenable become thinkable.’\textsuperscript{379} Freedman elaborates ‘censorship can be imposed, political rights suspended, young men conscripted, and aliens deported all in the name of security.’\textsuperscript{380} The concept of security is often presented to negate concerns in relation to civil liberties and stifle accompanying debate surrounding the necessity of the measures. Zedner uses an interesting

\begin{footnotesize}
\textsuperscript{374} Ibid.
\textsuperscript{376} Schulhofer S, —Liberty and Security After September 11” (2003) 14 American Prospect 1.
\textsuperscript{379} Zedner L, Security (Routledge 2009), 12. The practice of enhancing security is an age old concept: from arming ourselves with sticks, to swords, to guns, to building moats and fortified castles, to establishing a provisional state police force, to the introduction of biometric surveillance systems, such as CCTV and DNA databases. As Valerde observes ‘[t]he abstract noun —security” is an umbrella term that both enables and conceals a very diverse array of governing practices, budgetary practices, political and legal practices, and social and cultural values and habits’. Valerde M, —Governing security, governing through security” in Daniels R, Macklem P and Roach K. (eds), The security of freedom: Essays on Canada’s anti-terrorism Bill (Toronto University Press 2001), 83–92.
\textsuperscript{380} Freedman L, —The concept of security” in Hawkesworth M (ed), Encyclopaedia of government and politics (Routledge 2003), 752.
\end{footnotesize}
analogy of an over-eager fire engine to emphasise the problems surrounding the discourse of modern security; “... security has all the qualities of a fire engine, replete with clanging bells and flashing lights, whose dash to avert imminent catastrophe brooks no challenge, even if it risks running people down on the way to the fire”.  

In general the arguments of the aforementioned theorists (both principled and pragmatic) often arrive at similar conclusions: inter alia, that fundamental rights are non-derogable and that allowing such rights to be infringed allows the terrorists to win; liberties sacrificed in case of emergency are not easily reinstated; abuse of _suspect_ rights is adding fuel to the terrorists fire and that such abuses are not producing justifiable benefits. Thomas elucidates the tenor of the modern academic literature when he notes _the idea of trading off freedom for safety on a sliding scale is a scientific chimera ... balance should not enter the equation: it is false and misleading_.

Despite this academic hostility, the evidence for the use of the _balance_ concept within modern society is unsurprising; as Dworkin observes _the metaphor of balancing the public interest against personal claims is established in our political and judicial rhetoric, and this metaphor gives the model both familiarity and appeal_. This is a perennial problem in the criminal justice arena, where as Ashworth observes elected officials and policy makers often regard themselves as holding the powers of the state and the liberties of the individual in equilibrium. An overly developed obstacle course will frustrate the process and enable those guilty of offences to walk free. Those tasked with maintaining law and order in society habitually argue that the balance has swung too far in favour of the accused and have rendered their job impractically difficult; whilst those of the civil liberty persuasion argue that the expansion of state powers unjustifiably erodes the rights of the individual. Zedner observes _the lesson of criminal justice is that the metaphor of balance is used as often to justify and defend changes as to challenge them. Typically, conflicting interests are said to be “balanced” as if there were a self-evident weighting of or priority among them_.

---

381 Zedner L, _Security_ (Routledge 2009), 12. Zedner suggests that in order to understand security one must examine it under five separate headings: objective, subjective, pursuit, practice and symbol. Ibid. 14.
385 Zedner presents the case of the Royal Commission on Criminal Justice 1993 in the UK, in which the balancing of interests was advanced as a key justification for the recommendations made, though little attention
The problem is that the interests involved are rarely objectively examined or the calibration of the scales made clear. As Zedner notes, “Balancing is presented as a zero-sum game in which more of one necessarily means less of the other.”\(^3\)\(^8\)\(^6\) Similarly, as Ashworth observes, achieving a balance is put forward as if it were self-evidently a worthy and respectable goal.\(^3\)\(^8\)\(^7\) However, it is important to clearly consider the consequences that may occur after the adoption of a balancing approach; as Zedner observes, “the experience of criminal justice is that balancing is a politically dangerous metaphor unless careful regard is given to what is at stake.”\(^3\)\(^8\)\(^8\) Usefully she provides three questions that should be examined when considering utilising a balancing: “What tips the balance?”; “In whose interests?” and “What lies in the scales?”\(^3\)\(^8\)\(^9\) A major concern is that often those in favour of increasing the powers of the state to combat crime will claim that the current system has “tilted off balance” and is in need of recalibration. They will cite a current problem or high profile event (such as a well documented murder) as an example of how far our system has “swung” in favour of the accused, often to the detriment of other interests group such as victims or the general public.\(^3\)\(^9\)\(^0\) As Zedner notes, “Single events, such as heavily publicised murder, have repeatedly provoked popular demands for greater police powers at the expense of protections for suspects.”\(^3\)\(^9\)\(^1\) Therefore if the claimed need to rebalance is not to be a reckless use of political self-justification, we need to accurately identify the external elements that may necessitate an adjustment of the scales.

\(^3\)\(^8\)\(^9\) Ibid. 511–518.
\(^3\)\(^9\) As will be discussed in chapter seven, Ireland has not been immune to this phenomenon. For example, in 2006 former Minister for Justice Micheal McDowell spoke strongly on this matter in a speech entitled “Rebalancing Criminal Justice”: “Many of the legal principles and values have become cornerstones of our law and are almost sacrosanct in how we perceive and interact with them. And this is where our dilemma lies. Those same principles have originated and developed from a different era when many defendants could not read or write and it was necessary for the legal system to devise means and ways to ensure that protections and safeguards were available. Those values, concepts and principles have been honed, shaped and developed over a long period and generally have served us very well. In broad terms, they have ensured justice was done and seen to be done for those who came into contact with the law. However, along the way a consequence of that development and reform of the law may have been that the needs, concerns and rights of victims of crime may have unintentionally become secondary to the rights and protections for the criminal.” See McDowell M, “Rebalancing Criminal Justice – Remarks by Tánaiste in Limerick” (October 20, 2006). Available at: http://www.inis.gov.ie/en/JELR/Pages/Speech_rebalancing_criminal_justice.
Where rebalancing is attempted under the guise of increasing public protection or security, the question is, whose interests are generally being presented as being in ‘all’ our interests? In general, laws are universally applicable: thus laws afforded to the police are non-discriminatory and apply to all members of society. The balance debate is commonly placed between the protection of the majority and the rights afforded to those within the criminal process. A trade-off involving the aggregate majority (us) versus the minority (them) will inevitably tip the balance in favour of the former. Claims to rebalance in the ‘public interest’ are played as trump cards against which minority or individual rights cannot compete. The concern is that the powerful tone (often consisting of a sensationalised media and political rhetoric) focus upon sectional interests (such as victims and community rights), resulting in a lack of participatory debate, objective clarification or clear justifications surrounding how in practice the resultant measures will aid in achieving this desired balance (i.e. how it will help to swing the ‘balance’ back in favour of the law abiding community). This criticism is not to dismiss the rights of victims or the community but to criticise the sweeping generalisations and undeveloped policies that are often proffered in an attempt to enhance the rights (such as community safety) of the majority but in reality result in an unjustified deterioration of the rights and due process protections of those targeted by the process (which includes everyone in society).

392 It is important to consider that we are all susceptible to changes that occur within the criminal process. Thus we need to be conscious of not falling victim to the ‘innocent have nothing to hide rhetoric’ that often surrounds such debate. Ashworth provides a useful example for considering this issue from a procedural rights perspective: ‘I want to start this first lecture with a hypothetical case. Let us suppose it is an autumn evening. You have to go out to a meeting. You have a son or a brother aged about 18, and you leave him at home with another young man of the same age who is visiting him. You arrive back home at 9 p.m. to find a police car nearby. On enquiring what has happened, you are told that a burglary has been reported at a house a short distance away; that two young men were seen in the street adjacent to the house; that they had evidently been drinking; and that they were asked to go to the police station for questioning and declined, so they were arrested on suspicion of burglary and taken to the police station. It transpires that one is your son (or brother), and the other is the young man who was visiting him. How would you wish them to be treated by the police? Should it be for the police to decide how long and under what conditions they are kept, or should they have rights? This example might usefully be borne in mind, and used as a kind of thought experiment, as we consider the case for procedural rights.’ See Ashworth, A, Human Rights Serious Crime and Criminal Procedure (Sweet and Maxwell 2002), 5–6. The concern, as Kennedy observes, is that we do not often consider such issues from such a perspective but with our focus concentrated upon the rights of the other, ‘We always think it is ‘other’ people’s liberty that is being traded, which somehow makes it all right. We do not realize liberty is not divisible this way.’ See Kennedy H, Just Law: the Changing Face of Justice and Why it Matters to Us All (Chatto and Windus 2004), 8.

We need a method of balancing that avoids juxtaposing the various interests of stakeholders within society or creating dualist battles between ‘rights’. Pugilistic contests are fought on the aspiration of achieving a victor; however, in terms of rights and due process values we need to avoid thinking in terms of winners but to consider the broader context of the kind of society in which we as a society wish to reside.\(^{394}\) Thus it is important not to become overly myopic when considering the dissolution of an individual’s rights or due process protections when placed against the persuasive demands of public protection.\(^{395}\) When designing and implementing policing practices we should recognise that they may be used against us as well as them. Rawls suggests that this would require us to design a system according to ‘principles which are free and equal persons would assent to under circumstances that are fair’.\(^{396}\) Conceiving of justice as fairness would prevent the common tendency to assume that policing measures are implemented to protect ‘us’ against ‘them’\(^{397}\). Thus by recognising that we may all be subject to policing measures as opposed to being just a beneficiary of enhanced police powers may aid in ensuring that due process and civil liberties are afforded to all.\(^{398}\)

For those that would accuse this ideal of being overly utopian, it is important to recall that emergency powers often become normalised over time.\(^{399}\) One can point to the origins of the erosion of the right to silence, traditionally justified as being necessary in the United Kingdom to facilitate the interrogation of IRA terrorist suspects. An erosion that was expanded to include all suspect offenders under the Criminal Justice and Public Order Act 1994. Thus while the provision was originally implemented to combat the threat of terrorism, it has now become a staple of the modern criminal process. Gross elaborates upon this point:

\(^{394}\) Kilcommins notes the difficulty, ‘What we want for ourselves, our families, our friends and wider society is to be able to flourish in our lives without risks of assaults on our persons or property. This is clear. But in a society premised on respect for human rights and civil liberties, a reasonable balance must be maintained between the individual’s right to liberty and freedom and society’s right to protection.’ See Kilcommins S, ‘Risk in Irish Society, moving to a Crime Control Model of Criminal Justice’ Irish Probation Journal 2(1) (2005), 33.


\(^{397}\) Garland ominously notes the current trend, ‘We allow ourselves to forget what penal-welfarism took for granted: namely that offenders are citizens too and their liberty interests are our liberty interests. The growth of a social and cultural divide between “us” and “them”, together with new levels of fear and insecurity, has made many complacent about the emergence of a more repressive state power. In the 1960s, critics accused penal-welfare institutions of being authoritarian when they wielded their correctional powers in a sometimes arbitrary manner. Today’s criminal justice state is characterised by a more unvarnished authoritarianism with none of the benign pretensions,’ see Garland D, The Culture of Control: Crime and Social Order in Contemporary Society (Oxford University Press, 2001), 123.


we should (but rarely are) also be aware of the danger that exigencies may lead to a redefinition, over time, of the boundaries of groups, even those which were deemed well defined in the past, making certain members of the original _non-terrorist_ group into outsiders against whom emergency powers may be _properly_ exercised.400

A current concern is that given the security conscious society in which we now reside, the normalising process is no longer an inevitability but a starting point.401

A pertinent example of this trend within the DNA debate was the passing of the Police and Criminal Evidence (Northern Ireland) Order in 1989.402 The Act conferred the police powers contained in the Police and Criminal Evidence Act 1984 (PACE) on the Royal Ulster Constabulary (RUC) in Northern Ireland.403 The Order, however, contained a number of interesting provisions that were exclusive to Northern Ireland. For example, schedule 14 of the Order included buccal swabs (mouth swabs) under the definition of non-intimate samples, thereby allowing members of the RUC to obtain DNA samples in the form of a buccal swab without consent. The categorisation of buccal swabs as non-intimate samples differed from the categorisation within PACE in the UK which had categorised it as _intimate_ (which resulted in the taking of the sample being associated with additional protections).404

---


403 PACE incorporated a number of procedural issues which regulated police activities while implementing codes of best practice. PACE placed the taking of bodily samples, including fingerprints, and intimate and non-intimate samples, on a legislative footing for the first time. It regulated who was authorised to take samples and when consent was necessary. For a detailed discussion of the Act see Zander M, _The Police and Criminal Evidence Act 1984_ (Sweet & Maxwell 1990).

404 Section 62 and s.63 of PACE outlined the relevant provisions. Under the UK provisions parliament defined non-intimate samples as (s.65) _a sample of hair other than pubic hair; a sample taken from a nail or from under a nail; a swab taken from any part of a person’s body other than a body orifice; a footprint or a similar impression of any part of a person’s body other than a part of his hand_. Parliament defined intimate samples as (s.65) _a sample of blood, semen or any other tissue fluid, urine, saliva or pubic hair, or a swab taken from a person’s body orifice_. The taking of an intimate sample was also subject to a two step test: there had to be reasonable suspicion that a person was involved in a serious arrestable offence and that the taking of an intimate sample would include or exclude the individual from the investigation, i.e. the sample had to be relevant to the investigation. Moreover, intimate samples such as dental impressions, blood samples, semen, saliva, urine, pubic hair and swabs obtained from body orifices of an individual, could only be obtained with consent and had to be taken by a designated medical person such as a doctor or a dentist. The taking of intimate samples had to be authorised by a superintendent. A non-intimate sample, including a hair sample (plucked from the head), contents under a person’s fingernail or footprint could be obtained without garnering an individual’s consent. In addition to outlining the guidelines for collection, the act addressed the issue of the acquired fingerprints and bodily samples. The Act stated that fingerprints and samples were to be destroyed if the person were cleared of the offence, not prosecuted, or not suspected of having committed the crime. See ss.61–65 of PACE.
difference was presented as being necessary because of the increased security concerns and terrorism prevalent in Northern Ireland during this period: “in particular circumstances of Northern Ireland ..., it seems to us to be entirely reasonable and necessary, in the interests of protecting the law abiding public, to give the police powers to take a mouth swab, if necessary without the suspect’s consent”. It is worth noting that these increased police powers were not restricted to terrorist subjects. Unsurprisingly, the amendments to the Northern Ireland police powers were subject to considerable criticism: “a wanted terrorist or suspected drug trafficker could be stopped at Belfast airport and a swab taken ... which could establish that he was the wanted person, or just as importantly, eliminate him from the investigation. But once the same man gets to Heathrow airport the Metropolitan police will not be able to take a swab”. However, the divergence was not maintained for long as similar provisions were soon adopted in the UK. In 1993, the Runciman Report re-examined police powers and recommended widening the offences that would be deemed serious arrestable offences, to include offences such as assault and burglary. The report also recommended, in line with the Northern Ireland provisions, that mouth swabs and saliva be reclassified as non-intimate samples, thereby negating the requirement for consent. This normalisation of terrorist legislation has been a persistent trend in the UK and Irish criminal justice policy; thus it is important to remember this trend whenever we are presented with legislative provisions that are ostensibly aimed at “terrorists”. Moreover, an increasing concern is that intrusive provisions are increasingly aimed at a wider audience than those suspected of terrorist offences thus presenting an increasing threat of coercive legislation becoming normalised within the mainstream criminal process.

However, it is important to note that there may be benefit in introducing the concept of balance by considering the various factors involved in a particular decision, including, rights, values, interests of the various stakeholders, the grounds upon which they are included, the weight accorded to each and the extent to which these provisions should apply.\footnote{Gross O, "Chaos and Rules: Should Responses to Violent Crises Always be constitutional?" (2003) 112 Yale Law J 101, 1090.} An initial observation is that we need to avoid the assumption that balancing rights can be compared to a mechanical balancing exercise. Often rights and interests are \textit{incommensurable}; Zedner observes two notable problems namely, \textit{distribution} and \textit{temporal dissonance}.\footnote{Zedner L, "Securing Liberty in the Face of Terror: Reflections from Criminal Justice" (2005) 32(4) Journal of Law and Society 507, 516.} The first is when collective interests are weighed against those of the minority, the second when the known interests are weighed against future uncertainties. The growing concept of risk has been well documented: it is well documented that risk occupies a larger space in our collective psyche than rational calculation would dictate. Precisely because it is unknowable, prospective risk always threatens to outweigh present interest.\footnote{For an interesting account of the predilection for risk in modern society see Sparks R, "Perspectives on Risk and Penal Politics" in Sparks R, Crime, Risk and Insecurity: Law and Order in Everyday Life and Political Discourse (Routledge 2000).} 

The distortion that is created by attempting to reduce often unquantifiable variables to tangible measurements heightens the need to precisely establish what is actually trying to be achieved. Outlining what a particular measure can provide is important when public safety is promoted as the rationale behind the measure, and when such issues are in play we need to go beyond political rhetoric or a perceived or assumed aspiration. Achieving public safety or increasing security is a difficult issue and presents a number of problems.\footnote{Zedner L, "The concept of security: an agenda for comparative analysis" (2003) 23 Legal Studies 152, 154.} There are those who describe security as a sense of being or an end state which can be categorised into objective and subjective conditions.\footnote{Zedner L, "Securing Liberty in the Face of Terror: Reflections from Criminal Justice" (2005) 32(4) Journal of Law and Society 507, 517.} The objective state of security is a continuum, ranging from a hypothetical state of absolute security through the avoidance of risk, to the lesser state of \textit{being protected from}.\footnote{Ibid.} Invariably, it is the latter that influences criminal justice policy. Although, as Waldron warns, if we are to allow liberties to be eroded then we need \textit{an actual prospect that security will be enhanced}, despite the difficulty in assessing certainty.\footnote{Waldron J, "Security and Liberty: The Image of Balance" (2003) 11 J. of Political Philosophy 191, 209.} It is commonly understood that the concept of public security or public safety cannot be achieved in the absolute; thus we are left with the basic questions of what standard of public safety do
we aspire to and consequently, to what extent are we are willing to forego our rights to achieve and maintain this level of protection?

In addition to objective security measures, an important aspect of society is the concept of subjective security. It is a condition that describes the psychological state of a community that may be linked to but is often independent of the actual objective threat. The community’s subjective insecurity has been increasingly used to enact comfort legislation; as Waldron describes: ‘No doubt the psychological reassurance that people derive from this is a consequentialist gain from the loss of liberty. But whether it is the sort of gain that should count morally is another question.’ If the state has a duty to discharge the reassurance function, then it raises questions about how much we should allow public policy to be dictated to by fear and anger over courage and decency. A concern is that by expanding the reassurance function it can have a significant impact upon coercive policing powers.

There are those who strongly argue for the protection of rights: for example Dworkin famously argued that to allow consequentialist claims to ride roughshod over individual rights, destroys the very essence of the concept of rights if rights make sense at all, then the invasion of a strong right must be a very serious matter. It means treating a man as less than a man, or as less worthy of concern than other men. Such a libertarian stance taken to its logical conclusion would suggest that individual rights should trump popular policy claims. Dworkin rejects claims that suggest such conflicts can be reconciled by resorting to balancing; he argues [to assume] the right of the majority is a competing right that must be balanced in this way ... is a confusion that threatens to destroy the concept of individual rights. However, Dworkin while a firm advocate of rights, cannot be regarded as an extreme libertarian; he acknowledges that some grave threat to society or catastrophe might warrant derogation from individual rights such that we need not go so far as to say the State is never justified in overriding that right. Even the European Convention of Human Rights recognises the weighing of rights in particular circumstances. Determining the method

422 Dworkin R, Taking Rights Seriously (Fontana 1977), 199.
423 Ibid.
424 Ibid. 191.
of assessing when and under what circumstances a right may be infringed is less clear. Thus even libertarians such as Dworkin acknowledge that there are circumstances when rights come into conflict and a solution necessitates that one receives preferential treatment over the other.\textsuperscript{425}

Resolving this conflict is undoubtedly a difficult concept. Although Dworkin's use of the word estimate has been subject to criticism. For example, Zedner observes that ‘to talk of estimating merits presumes first that it is possible to rank relative values and, secondly, that the threats to these values are equally present in all cases under consideration’.\textsuperscript{426} A concern is that the word ‘estimation’ associates with an element of uncertainty. Predicting uncertainty draws the concept of risk into the equation and as is well documented in current literature the concept of risk has been heavily influencing policy in criminal justice.\textsuperscript{427} Thus it is important that any mechanism used to reconcile or balance the conflicts of the criminal process engage not only the harm involved in a particular incident but the potential or future harm that may result due to the use or failure to implement a particular policy or decision. While catastrophic disaster scenarios provided within textbooks often present ‘clear-cut’ examples in which it is justifiable to infringe an individual’s rights,\textsuperscript{428} the reality is that in real life such examples are much more difficult to calculate.\textsuperscript{429} It is submitted that this concept is an extremely difficult endeavour. Attempting to definitely pre-empt the potential impact or ramifications of a decision is an impossible task.\textsuperscript{430} To aid in tackling this uncertainty the concept of risk management has become increasingly influential in modern society. However, despite the appeal of risk it is important to remember that risk management is predicated upon uncertainty and future expectations. Therefore we need to take caution when presented with majoritarian examples predicated upon ‘clear-cut’ textbook examples, as no matter what

\textsuperscript{425} Accepting this premise, Dworkin provides the following example: ‘balancing is appropriate when the Government must choose between competing claims of right – between the Southerner’s claim to freedom of association, for example, and the black man’s claim to an equal education. Then the Government can do nothing but estimate the merits of the competing claims, and act on its estimate.’ See Ibid. 199.


\textsuperscript{427} For a useful introduction to the increasing role of risk in criminal justice and the potential impacts see Hudson B, “Punishment, rights and difference: defending justice in the risk society” in Stenson K. and Sullivan R (eds), Crime, Risk and Justice (Willan Publishing 2001), 144.

\textsuperscript{428} See Zender L, “Terrorism, the ticking bomb and criminal justice values” (2008) 73 Criminal Justice Matters 18.


catastrophic example is proffered, in reality it must be acknowledged that the reverberations and ramifications of a decision are impossible to predict with certainty. Thus the inherent uncertainty or unknown impact of a decision should necessitate a reluctance to enthusiastically accept the derogation of our rights or due process values. As Zedner observes this uncertainty should place a ‘heavy restraint upon our willingness to erode rights’.\textsuperscript{431}

The balancing of conflicts is further complicated when a right in the equation is deemed immune from violation. A pertinent example within modern western society is the concept of torture. The majority of western nations prohibit torture from being subject to the scales of balance. For example, Article 3 of the European Convention of Human Rights is a non-derogable provision which states that ‘No one shall be subjected to torture or to inhuman or degrading treatment or punishment.’ Therefore it would seem that within such scenarios the reconciliation measure of balance cannot be utilised, as Gross notes, the goods in question ‘cannot be compared, or balanced, one against the other’.\textsuperscript{432}

It is submitted, however, that rights, civil liberties and due process values cannot be absolute. Similarly Ashworth criticises those who argue that ‘rights must be upheld even if the consequence is death, social catastrophe, or whatever’.\textsuperscript{433} It is important to expand Ashworth’s critique to include situations that may not be a certainty: thus risk and prevention must also be factored into the equation. Zedner believes the problem to be twofold, ‘we can almost never know exactly what degree of risk pertains or what precisely will evaluate’.\textsuperscript{434} Thus it is important to construct a framework that not only attempts to clearly and coherently outline the justifications underpinning the ‘black and white’ circumstances when a right may be violated but also one that allows a degree of fluidity and flexibility which can be adapted and aligned to circumstances where the outcome may be unknown or consist of ‘grey’ permutations.

\textsuperscript{432} Gross O, ―Are Torture Warrants Warranted? Pragmatci Absolutism and Official Disobedience‖ (2004) 88 Minnesota Law Rev 101, 113. In reality the use of torture has been subject to widespread coverage within recent years to gather intelligence on the war on terror. A number of academics have commented that we should attempt to legitimise the use of torture by subjecting its use to a ‘judicial torture warrant’. For example, see Dershowitz A, \textit{Why Terrorism Works: Understanding the Threat, Responding to the Challenge} (Yale University Press 2003).
Although it is a precarious concept, seeking a 'balance' does at the very least introduce a sense of practicality to conflict resolution. Often commentators become trapped in 'an unworldly absolutism ... arguing that “rights” approaches decline to recognise that rights should ever be qualified or limited in practice, arguing as if rights must be upheld even if the consequence is death, social catastrophe or whatever'. An in-depth discussion of legitimacy and justification for individual rights is not possible within the word constraints of this thesis. However, in short, if we are to adopt a system promoting individual rights then we have to resist consequentialist or communitarian arguments for contravening these rights during times when to do so may benefit the majority. This, however, does not result in individual rights being absolute: individual rights may be justifiably breached by strong consequentialist arguments in restricted circumstances. Equally extremely utilitarian beliefs are deemed to be unjustifiable within modern liberal democracies, in which respect for individual human rights are a prerequisite. Therefore it would seem that given the two extreme positions often voiced in human rights debates, namely rights theorists and consequentialist theorists, that a balancing metaphor may perhaps be an unfortunate necessity; 'Both rights theorists and consequentialist sometimes write as if the inevitable conflicts must be resolved by favouring their own perspective. The balancing approach may provide a kind of mechanism and rhetoric for avoiding extreme positions and recognising practical realities.'

Therefore the possibility of 'balance' becoming a feature of a criminal process in which a principled rights-based approach is adopted should not been seen as a terminal element. What is vital is that balance must not be used as a pronouncement for an already decided conclusion. Public policy issues should be clearly and objectively debated and formulated on the basis of clear evidentiary research findings. As Ashworth correctly observes:

They refer to the use of the metaphor as the inevitable conclusion of a lengthy and careful process, whereby rights and interests are identified; arguments for including some and excluding others are set out; appropriate weights or priorities are assigned to particular rights and interests, either generally or in

436 For a detailed discussion on rights see Dworkin RM, Taking Rights Seriously (Fontana 1977).
specific contexts; and so forth. Above all, this must be a properly researched, reasoned, and principled course of argument, not simply the pronouncement of a conclusion. 438

Similarly, Zedner observes that the key is to outline a clear system for the derogation of rights even within extraordinary situations—even in the case of a weighty countervailing objective we need a transparent, structured process of analysis to determine what degree of erosion is justifiable, by what measure, in what circumstances, and for how long. 439

Thus at a glance a principled rights-based framework would seemingly provide an appropriate means of ‘overseeing’ the use of DNA during the pre-trial criminal process. In essence it would allow the use of DNA within a restricted rights framework, thus emphasising the establishment of safeguards and buffers that would minimise interference with and protect the rights and due process safeguards of those targeted by the process. However, as will be elucidated in the next section, DNA presents a number of unique questions (or at the very least exacerbates these questions) for a principled rights-based approach. As a result of the increasing involvement and perception of DNA as a ‘useful’ tool for criminal investigation and in particular because of its capacity to act as a ‘silent witness’ and aid in the solving of ‘signal crimes’, it is submitted that the principled rights-based approach and its inherent ‘balancing’ component may struggle to ‘contain’ the application of DNA profiling within the criminal process.

The concern is that the ‘silver bullet’ aura which is being increasingly associated with DNA profiling (enhanced by the growing number of spectacular success stories associated with the technology) has created a narrative where the ‘truth finding’ capacity of DNA is becoming increasingly persuasive and prevalent in policy debates surrounding DNA. Thus the conflicts and debates that were recognised in the above section are increasingly strained as those in favour of the expanded use of the technology clash with those who argue against the rapidly increasing role and application of DNA profiling in the criminal process. The concern with DNA and the criminal process is that ‘balance’ within these debates is habitually conflated with high profile signal crimes and the truth-finding capacity of DNA leading to the concept of balance becoming increasingly politised — such an environment has created a precarious

atmosphere for rights and due process values. Thus the final section of this chapter will put forward a framework that builds upon the principled rights-based framework, but that attempts to incorporate provisions that will enable an appropriate balance between DNA profiling and rights and due process values to be not only struck but also adequately maintained.

3.3. Signal Crimes

A key problem for those wanting to retain a semblance of objectivity and perspective in the DNA debate is the problem of *signal crimes*. Innes describes *signal* crimes as those *high profile cases that can have an effect on a population as a whole.*  

As Veth and Midgkey state, *Signal crimes can bring to the surface fears that there is something fundamentally wrong with society, resulting in adaptations in behavior or belief systems, and often these crimes linger in the public consciousness for years to come.*

Understandably, there is an added emphasis upon the state to catch the perpetrators of heinous crimes. As Morgan elaborates, *this partly explains why so much police effort is put into the detection of certain crimes, such as particular kinds of murder, which capture the public (and media) imagination and arouse fear: the symbolic importance of success in such cases is considerable.*

As explained in chapter two, given the design of the human body, we secrete DNA (in the form of bodily samples) on a daily basis. Therefore during the commission of a violent crime, it is probable that the perpetrator of a crime will discard a bodily sample (such as a skin cell) at the crime scene, thus providing an evidential clue for the subsequent criminal investigation. The allure of DNA profiling and in particular a DNA database is that they have increasingly produced *Hollywood* style results in a number of jurisdictions. The following section will document a number of these success stories while illustrating the difficulty for individual rights and due process values when placed in competition with the *truth* revealing capacity of DNA.

The difficulty with the DNA debate is that it has become entrenched in a rhetorical battle and has become a deeply politicised issue. One need only look to the political discourse during the last election in the United Kingdom and the debate that has surrounded the introduction of

---

the Protection of Freedoms Bill to confirm the difficulty when debating this issue. During the most recent general election Labour attempted to use the high profile murder of Sally Ann Bowman as a reason to retain a DNA retention policy predicated on arrest. The victim was raped and murdered in London in September 2005.

Although a DNA profile was obtained from the crime scene, it failed to provide a match on the UK DNA database. Nine months after the murder, Mark Dixie was arrested for affray outside a nightclub in West Sussex. Under the UK sampling requirements which enabled an individual to be sampled and his/her profile entered on the National DNA Database upon arrest for a recordable offence, Dixie’s DNA was obtained and his profile entered on the DNA database. Dixie’s DNA profile matched the previously unidentified DNA sample that had been obtained from the Sally Ann Bowman crime scene. He subsequently confessed and was sentenced to 34 years in prison.

The Bowman case and the capture of Mark Dixie are frequently cited as one of the main reasons for not only establishing a DNA database but also for lowering the threshold for DNA collection (and retention) to incorporate those arrested for minor offences. For example, during the recent election Labour attempted to use the outcome of the Bowman case as leverage. Labour accused the Conservative party of being ‘soft on crime’ and that the Conservative party’s plans to expunge large numbers of those on the UK DNA database would have a detrimental effect on criminal investigations, thus impacting upon arrests, convictions and ultimately public safety. In a press conference while accompanied by Sally Anne Bowman’s mother, Gordon Brown, the then leader of the Labour Party, stated that ‘the Conservative party wants to destroy the data that is available to help in the fight against crime’ and ‘because we have insisted on DNA being retained we have been able to find and bring to justice thousands of people guilty of violent crimes, including murder and rape, who would otherwise not be brought to justice’.

---

443 The Bill includes a wide range of measures, including a new framework for the police retention of fingerprints and DNA data. For a full detailed summary and access to the Bill see http://services.parliament.uk/bills/2010-12/protectionoffreedoms.html
444 Travis A, ‘Would Sally Anne Bowman's killer have been caught under Tory DNA policy?’ The Guardian (9 April 2010). Available at: http://www.guardian.co.uk/politics/blog/2010/apr/09/reality-check-conservatives-dna-bowman.
445 Section 63 of PACE.
448 Groves J, ‘Brown accused of 'misleading' public as he hails success of DNA database with mother of murdered teen model’ The Daily Mail (9 April 2010). Available at:
The Conservatives countered Labour's claims by highlighting a policy report produced by Shadow Justice Secretary, Dominic Grieve entitled *Reversing the Rise of the Surveillance State*. In relation to DNA the report claimed that if elected the Conservative party would, _establish clear principles for the use and retention of DNA on the National DNA Database, including ending the permanent or prolonged retention of innocent people's DNA._ Grieve concluded that _this Government's [Labour] approach to our personal privacy is the worst of all worlds – intrusive, ineffective and enormously expensive,_ while adding _As we have seen time and time again, over-reliance on the database state is a poor substitute for the human judgment and care essential to the delivery of frontline public services. Labour's surveillance state has exposed the public to greater – not less – risk._

Published in September 2009 the report is available at: [http://www.conservatives.com/News/News_stories/2009/09/~/media/Files/Policy%20Documents/Surveillance%20State.ashx](http://www.conservatives.com/News/News_stories/2009/09/~/media/Files/Policy%20Documents/Surveillance%20State.ashx). The 11-point plan was a response to Labour's reliance "on mammoth databases and wide powers of data-sharing, on the pretext that it will make government more effective and the citizen more secure". Grieve said the government's approach to personal privacy was the worst of all worlds, being intrusive, ineffective and enormously expensive: _We cannot run government robotically. We cannot protect the public through automated systems. And we cannot eliminate the need for human judgment calls on risk, whether to children or from criminal and terrorist threats._ See Travis A, "Tories outline plans to shrink _surveillance state_" _The Guardian_ (16 Sept 2009). Available at: [http://www.guardian.co.uk/politics/2009/sep/16/conservative-policy-paper-surveillance-privacy](http://www.guardian.co.uk/politics/2009/sep/16/conservative-policy-paper-surveillance-privacy).

http://www.dailymail.co.uk/news/election/article-1264844/General-Election-2010-Brown-accused-misleading-public-hails-success-DNA-database-mother-murdered-teen-model.html#ixzz174Tdw2U. Labour were heavily criticised for their overly emotive approach during the election in relation to the DNA debate. A number of commentators were concerned that Labour were attempting to _mislead_ the public resulting in a distorted debate. As Shami Chakrabarti, director of campaign group Liberty, stated: _Election fever seems to be confusing the debate about DNA retention._


The polarisation of opinions surrounding the future of the DNA database has not been restricted to the recent election campaign. On release of the Protections of Freedoms Bill in February 2011, James Brokenshire, the crime prevention minister, reaffirmed the current government's approach to the DNA database: _We want to make sure that the guilty are put on it and the innocent are taken off._ _DNA profiles to be deleted from police database_ BBC News (11 February 2011). Available: [http://www.bbc.co.uk/news/uk-12433116](http://www.bbc.co.uk/news/uk-12433116). Nick Clegg, the leader of the Liberal Democrats, maintained the disquieting level of political rhetoric when he stated, _Freedom is back in fashion. While our predecessors took it away, we will give it back._ _Nick Clegg; we're restoring hard won British liberties_ "The Telegraph" (11 February 2011). Available: [http://www.telegraph.co.uk/news/politics/8317257/Nick-Clegg-were-restoring-hard-won-British-liberties.html](http://www.telegraph.co.uk/news/politics/8317257/Nick-Clegg-were-restoring-hard-won-British-liberties.html).

Comparing freedom to apparel is a worrying analogy. Such a trivial equivalence perhaps begs the question, how long before freedom becomes unfashionable again? Labour retorted by reiterating their political stance in favour of a broad DNA database, Shadow Home Secretary, Yvette Cooper responded to the announcement of the Bill by stating: _The Government is at risk of putting political rhetoric above the evidence from experts. They are going too far on DNA retention and are going against the evidence that shows it has a significant impact on bringing serious criminals to justice and exonerating innocent people._ Doyle J, _DM3 database purge: Victory for the Mail as records of 1m innocent people removed_ "The Daily Mail" (11 February 2011). Available at: [http://www.dailymail.co.uk/news/article-1356198/DNA-database-purge-Victory-Mail-records-1m-innocent-people-removed.html#ixzz1OM6LkoCt]
leading political parties in the UK is indicative of the impasse that is often reached during
discourse surrounding the use of DNA in the criminal process: objective empirical research is
predominantly supplanted by misleading rhetoric and political scaremongering.

Returning to the impact of ‘signal crimes’ on criminal justice policy, recent developments in
the United States are pertinent to this discussion. In August 2003, Katie Sepich, a 22-year-old
graduate student at New Mexico State University, was brutally attacked just outside her
home.452 She was raped and strangled, and her body set on fire and abandoned at an old dump
site. The police failed to establish any suspects in Katie's case. However, skin and blood were
found under her fingernails, from which a DNA profile was derived. Using CODIS
(Combined DNA Index System) the police entered the unidentified DNA profile into the
National DNA Index System (NDIS) hoping to locate a match. The public misconception of
how the DNA database system operated was evident from Katie's mother's response: ‘They
are arresting people every day, so soon we'll know who killed Katie.’453 However, the
majority of states at the time, including New Mexico, did not retain the DNA of arrestees on
their DNA database.454 Pressure from the police, the media and the public (the public had
been conditioned by saturation coverage and sensationalisation of the case and repeated
emotional interviews with Katie's parents) led to the implementation of 'Katie's Bill'.455 The
Bill required DNA for the majority of felony arrests to be included indefinitely on the New
Mexico database, which would be subsequently transferred to the NDIS. The Bill was passed
by the New Mexico state legislature in only 30 days. The bill was signed into law in March
2006 and went into effect on January 1, 2007.456

452 For media coverage of the case see, Fretwell S, “Homicide victim's mom calls for DNA testing” The State
(South Carolina) (18 May 2011), available at: http://www.thestate.com/2011/05/18/1822840/homicide-victims-
mom-calls-for.html; Simonich M, “Sepich friends push for expansion of DNA database” El Paso Times (Texas)
adopt ‘powerful’ DNA training” The Washington Examiner (31 August 2008), available at:
See also a website detailing the case and the calling for an expansion of the laws surrounding the use of DNA
during a criminal investigation. See http://www.katieslaw.org.
453 See Nakashima E and Hsu S, “U.S. to Expand Collection of Crime Suspects’ DNA” Washington Post (17
April 2009).
454 For an overview of the US retention policies see See Krimsky S and Simoncelli T, Genetic Justice: DNA
Databanks, Criminal Investigations and Civil Liberties (Columbia University Press 2011), chapter two.
455 See Nakashima E and Hsu S, “U.S. to Expand Collection of Crime Suspects’ DNA” Washington Post (17
April 2009).
456 See Toler T, “Katie's Law may prevent future crimes” Princeton Times (28 January 2011). Available at:
http://ptonline.net/princeton/x316123842/Legislators-police. For a critique of the speed of the legislative process
see Crook MJ, “Sacrificing Liberty for Security: North Carolina’s Unconstitutional Search and Seizure of
In December of 2006, the New Mexico DNA database finally matched the unknown profile (from the Sepich case) to Gabriel Avilla, who had been convicted of a felony offence. However, it subsequently transpired that if New Mexico had required a DNA sample for Avilla’s felony arrest in November of 2003, investigators would have linked Avilla to Katie’s murder three years earlier. The news of the arrest of Katie’s killer received widespread coverage and so too did the fact that if DNA samples had been retained from Avilla in 2003 it would have saved the Sepich family three years of anxiety and would not have allowed a dangerous individual to ‘roam the streets’ for a further three years. It was this image and the accompanying rhetoric that was used for a period of four years to help convince the public and its representatives that it was time for Katie’s law to ‘go national’ in 2010.

On the 18 of May 2010 the US House of Representatives passed the Katie Sepich Enhanced DNA Collection Act of 2010, informally known as Katie’s Law. On introducing the Bill, New Mexico Representative, Harry Teague stated ‘we should allow law enforcement to use all the technology available to them … reduce expensive and unjust false convictions, bring closure to victims by solving cold cases, better identify criminals, and those who commit violent crime from walking the streets.’ Controversially the Bill was passed under a suspension of the House rules, thereby severely limiting the time allowed to debate the Bill in the House of Representatives. The incentives to implement the amendments contained in Katie’s Law are financial. The Edward Byrne Memorial Justice Assistance Grant (Byrne JAG) offers states grants on the basis of their DNA retention criteria; so, for example, in 2009, Byrne JAG grants program distributed $165 million in local funding and $318 million in state grants and California was afforded $135 million in Byrne JAG grants while New York received $67 million. Under the Bill, states that collect DNA from individuals arrested for certain serious crimes (such as murder, voluntary manslaughter, serious sexual assault or

---


458 For an example of the influence and growing support for arrestee DNA databases, see a US website (entitled ‘dna saves’) that documents cases that were useful (or often central) to the capture of a dangerous offenders, see http://dnasaves.org. It documents a range of cases, including that of Katie Sepich, and lobbies US states to expand their DNA collection regimes to include that of arrestees. See http://dnasaves.org/stories.php. For an academic commentary on the increasing pressure to include arrestees see Maddux JB, ‘Arresting Development: A Call for North Carolina to Expand its Forensic Database by Collecting DNA from Felony Arrestees’ (2009) 32 Campbell Law Review 103.


460 The suspension rules require the Bill to receive a two thirds majority; the Bill was passed by an overwhelming majority of 357 to 32 after only 25 minutes of debate. Ibid.

461 A complete state by state guide is available on the Office for Justice programs website: Available at: http://www.ojp.usdoj.gov/BJA/funding/09RecoveryJAGStateAwards.pdf.
kidnapping) and compare the samples with those on CODIS database at least once receive a 5 per cent bonus on certain federal crime prevention grants. States that also collect samples from individuals arrested for less serious crimes and submit all profiles collected from arrestees for inclusion in CODIS would receive a 10 per cent bonus. As co-sponsor of the Bill, Californian Representative, Adam Schiff stated:

Twenty-three states, including California, have now adopted DNA collection upon arrest or indictment for at least some violent felonies, and doing so increases the power of the national database to solve crimes ... the bonus in federal law enforcement grants provided by Katie’s Law will encourage additional states to adopt an arrestee testing law. This legislation is the product of years of work and debate in the Congress, and it will help law enforcement use DNA to solve crimes and it will keep in place existing civil liberties protections.462

The use of the suspension rules to pass the Bill has been subject to stern criticism from civil liberty advocates; Harper has argued that — it’s wrong to treat someone as guilty before they’re convicted ... it inverts the concept of innocent until proven guilty ... suspension of the rules is supposed to be for praising the winner of the NCAA championship or renaming Post Offices ... things like collecting Americans’ DNA are supposed to be fully debated in Congress.463 However, when one begins to analyse the spectacular success of the Sepich case and in conjunction with the current post 9/11 American environment, the lack of formal debate and the emphasis on haste in relation to crime control legislation is entirely predictable.464

Importantly from the perspective of this thesis, developments in the US emphasise the difficulties involved in protecting individual rights and due process values from the “truth” finding ability of DNA.\textsuperscript{465}

It is difficult not to become overly emotive when faced with a “signal” crime. Although, while revulsion is expected and often understandable, it prevents and distorts objective and rational thought when attempting to seek a resolution of a perceived crime problem. Therefore, the DNA debate is often a victim of its own success. Proponents of DNA databases often cite success stories such as Katie Sepich and Sally Ann Bowman as compelling reasons for not only establishing DNA databases but also as a rationale for increasing the entry threshold and retention periods of such databases. Similarly those arguing for the use of controversial DNA techniques such as familial searching and surreptitious sampling will cite the success stories

\textsuperscript{465} Examples of crimes such as the murder and rape of Sally Ann Bowman in the UK and Katie Sepich in the US are unfortunately becoming increasingly frequent. For example in New Zealand a number of high profile murder cases have also influenced the DNA debate. Of particular influence was the murder and sexual assault of 6 year old Teresa Cormack. In June 1987, Teresa failed to arrive at school after walking from her home in Napier. After an intensive search her body was discovered in a shallow grave nine days later at Whirinaki Beach approximately 15km north of Napier. The town had had previous experience of the disappearance of a young girl. Four years earlier, another Napier schoolgirl, Kirsa Jensen, vanished while exercising her horse along Awatoto Beach. Her body has never been found. See Brown JM, “Napier: the town that lost its innocence” New Zealand Herald (2 March 2002). Available at: http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=1090414. Understandably, the murder and sexual assault of a six year old girl on her way to school deeply shocked New Zealand as a whole; as a local councillor reported to a newspaper at the time “It was a naivety that we had. We were naïve that we thought we could send our children off to school and that they would be safe. You just looked at the world through different eyes after that … It was like an atom bomb was dropped here and the shock waves went right out around the country.” Brown JM, “Napier: the town that lost its innocence” New Zealand Herald (2 March 2002). Available at: http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=1090414. While a forensic examination was able to obtain limited biological samples from Teresa’s body, because of the embryonic nature of DNA testing in 1987, the forensic laboratory in New Zealand were unable to derive a working DNA profile. However, in 2001, developments in DNA analysis enabled the forensic laboratory in New Zealand to derive a workable profile from the original DNA samples. ESR Report 2010 – A brief history of forensic DNA 1990 - 2010: marking 20 years of DNA analysis”, 7. Available at: http://www.esr.cri.nz/SiteCollectionDocuments/ESR/PDF/ForensicScience/Forensic20yearsDNA.pdf. Upon uploading the DNA profile on to the National DNA database in New Zealand, the profile was found to match the DNA profile of Jules Mikus, a man who had been a suspect early in the investigation before being overlooked because of a corroborating alibi. Mikus was subsequently convicted for the sexual violation and murder of Teresa Cormack in 2002. See an interesting list of successful DNA profile cases on the ESR website entitled “Forensic success stories - every contact leaves a trace”, available at: http://www.esr.cri.nz/competencies/forensicscience/Pages/ForensicSuccessStories.aspx The difficulty when a society has to react to such an emotive event is to remain objective, as a local councillor quoted in a newspaper article, “When you look at that photo [Teresa] you see innocence and vulnerability. And that could have been anyone’s little child … There was a revulsion in society that anyone could do such a thing.” Brown JM, “Napier: the town that lost its innocence” New Zealand Herald (2 March 2002). Available at: http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=1090414
surrounding the use of these methods (such as the recent alleged apprehension of the Grim Sleeper in California).\footnote{For further details on the case see Miller G, “Familial DNA testing scores a win in serial killer case” (2010) 329 Science 262. Lonnie Franklin Jr, is accused of ten murders and one attempted murder. He is referred to as the Grim Sleeper as the killings occurred between two time periods. The key breakthrough in the case occurred when Franklin’s son was arrested in LA on a gun charge; under Californian law an individual arrested for a felony offence is obliged to provide a sample to the police. On placing the son’s DNA on the Californian database it provided a close match to the DNA found on the victims of the Grim Sleeper. Police subsequently began to investigate family members of the son, leading to the arrest of his father, Lonnie Franklin Jr. Police surreptitiously sampled Franklin by obtaining a pizza slice and a coffee cup that he discarded at a restaurant. The DNA obtained from Franklin was a direct match to the DNA found on the victims of the Grim Sleeper. Franklin was subsequently arrested, he has pleaded not guilty to the alleged offences and his trial is currently pending. For further information on this case see –Grim Sleeper’ prostitute killer suspect may be linked to 250 unsolved murders, say LA police” Daily Mail (12 August 2011); MacAskill, E. –Grim Sleeper’: 160 pictures of women may be serial killer’s victims, say police” The Guardian (16 December 2010); Rubin, J. –Police link six more slayings to Grim Sleeper suspect” Los Angeles Times (29 October 2011). For a fascinating academic commentary on issues presented by the case (which will be discussed in a latter section of the thesis) see Murphy, E. –Relative Doubt: Familial Searches of DNA Databases” (2010) 109 Michigan Law Review 291.}

However, while the above cases are indeed compelling reasons for establishing and expanding DNA databases and the use of DNA in criminal investigations, it is important to question the legitimacy of these narratives in driving the debate and policy in this area. As Redmayne notes, given the highly invasive nature of DNA sampling and databasing it is imperative for their continued legitimacy that they are perceived as being successful.\footnote{Redmayne M, –The DNA Database: civil liberty and evidentiary issues” (1998) Criminal Law Review 437, 441.} Therefore, it would seem that signal crimes within the DNA debate are often flaunted and sensationalised in an attempt to mask or justify the invasive nature of using DNA technology during an investigation.

The difficulty with the application of DNA profiling in the criminal process is that while it creates concerns for individual rights and due process values it is difficult to ignore its potential benefits for criminal investigation. The potential communitarian benefits of DNA profiling have helped foster a public desire for the continued and expanded implementation of the technology to aid in the investigation of crime.

When considered from a strictly communitarian perspective, it is difficult to argue against the continued use of a technique that is proving useful for the incrimination of violent offenders whilst exonerating individuals who have been wrongly convicted. For this reason, those in favour of its use argue in impassioned terms for its continued and expanded use in criminal investigations. They perceive individual liberty and due process concerns as watery...
sentiments’ and as burdensome obstacles thwarting the good fight against crime. Those in favour of these techniques argue that we as a society have a moral obligation to utilise a technology that has provided useful for solving crime. For example, commenting on the use of Familial DNA searching, the New York district attorney has recently stated that the failure to use the technique is insanity. It’s disgraceful. If I’ve got something of scientific value that I can’t share because of imaginary privacy concerns, it’s crazy. That’s how we solve crimes.

The consequentialist logic proffered by those in favour of these techniques is alluring. We all want to reside in a safe society in which violent offenders are brought to justice, thus it can be difficult to argue against a technology that may enable a violent offender to be brought to justice.

The difficulty is that those arguing against the use and expansion of DNA technology are equally impassioned about the impact and potential future impact that the use of these technologies can have on our individual human rights and due process values, and from a macro perspective they question the impact that such technology has on society in general. They strongly contest the consequentialist logic based on the argument that technologies should be used and implemented because they solve or (will potentially) prove useful in the fight against crime. They instead focus on protecting the citizenry from the incrementally growing interference from the state.

The difficulty with the debate is that as a result of the polar opposite opinions, we quickly reach an impasse. An impasse that is made even more difficult to surmount, by both sides viewing their position as fighting the good fight – proponents citing the crime fighting and public safety argument whilst opponents cite the need to protect us from state interference with individual human rights and due process protections. Thus, as Suter observes, both sides

---

468 As Judge Hand articulated in 1923 [o]ur dangers do not lie in too little tenderness to the accused. Our procedure has always been haunted by the ghost of the innocent man convicted. It is an unreal dream. What we need to fear is the archaic formalism and the watery sentiment that obstructs, delays, and defeats the prosecution of crime’. See United States v Garsson, 291 F. 646 at 649 (S.D.N.Y. 1923). (denying a defendant’s motion to inspect grand jury minutes).


471 As Kennedy notes, ‘We should have learned from history that, in the long-run, abuses by the state are far more dangerous to liberty and democracy than individual criminal conduct, dangerous and disturbing as that is.’ See Kennedy H, Just Law: the Changing Face of Justice and Why it Matters to Us All (Chatto and Windus 2004), 15. See also Rosen C, —Liberty, Privacy and DNA Databases” (2003) 1 The New Atlantis 37.
are _motivated by defence postures_.\textsuperscript{472} The difficulty is how we move past this impasse; as both sides are impassioned about their particular position it can be difficult for a side to _give ground_, which is often necessary for a compromise. The question to address is how we can adopt a position that recognises the plurality of values that are going to inevitably collide upon implementing these technologies in practice. As Weiss notes _debates over DNA profiling are _part of a larger_, post-Sept. 11 tug of war between public safety and personal privacy_.\textsuperscript{473}

Those in favour of the use of DNA profiling tend to overly rely on a narrow version of consequentialism that places values such as public safety and security over _amorphous_ values such as individual rights and due process protections.\textsuperscript{474} For example, in the \textit{Marper} decision of the House of Lords,\textsuperscript{475} Lord Steyn began his judgment by stressing the importance to society of using technology during criminal investigation and he stated:

\begin{quote}
My Lords, it is of paramount importance that the law enforcement agencies should take full advantage of the available techniques of modern technology and forensic science. Such real evidence has the inestimable value of cogency and objectivity. It is in large measure not affected by the subjective defects of other testimony. It enables the guilty to be detected and the innocent to be rapidly eliminated from inquiries ... it is, of course, true that such evidence is capable of being misused and that courts must be ever watchful to eliminate risks of human error creeping in. But as a matter of policy it is high priority that police forces should expand the use of such evidence where possible and practicable.\textsuperscript{476}
\end{quote}

Such an approach can be criticised as being located upon _a slippery slope_, as, if followed to its logical conclusion, it allows for the continued and expanded use of DNA so long as the technique used is beneficial from a public safety perspective. A concern is that while such an approach is problematic it can (and does) produce tangible results; as Suter notes, _The social value of identifying murderers and rapists is palpable and visceral – it keeps them off the_ 

---


\textsuperscript{475} The \textit{Marper} decision will be discussed at length in chapter five.

\textsuperscript{476} \textit{R (S) v Chief Constable of S Yorkshire Police} [2004] 1 WLR 2198, per Lord Steyn.
street, it provides peace and resolution to the victims and their families, and it vindicates public justice. These benefits are ... measurable in economic terms.\textsuperscript{477}

In contrast to the potential tangible benefits associated with consequentialist reasoning, the impact of DNA technology on human rights and due process values is more abstract. As Suter notes, ‘It is [simply] difficult to quantify or demonstrate empirically the costs of privacy violations or the benefits of protecting privacy.’\textsuperscript{478} Thus when juxtaposed against a murder or other violent crime, amorphous values (such as individual rights) often become steamrollered by the public desire to solve the crime. While proponents of DNA profiling recognise the need to place certain restrictions upon the use of the technology, they believe that the communitarian benefits that stem from the use of these practices tip the scales in their favour.\textsuperscript{479} In contrast, opponents to the use and expansion of DNA profiling argue that as a result of the serious human rights and due process concerns created by the use of this technology in the criminal process, that consequentialist and communitarian arguments should not be allowed to undermine the safeguards and obstacles that have been designed to protect those targeted by the process.

A problem that can be attributed to both sides is that they both tend to neglect (or undervalue) the strong arguments voiced by the opposing side. Those promoting a security-driven communitarian or consequentialist approach undervalue the human rights and due process concerns raised by the libertarian faction. Whilst the libertarian-centric faction undervalues (or fails to accept) that these technologies can be utilised appropriately for social benefits such as investigating crime, vindicating victims’ rights and exonerating those wrongfully convicted.

3.4. Resolving the Impasse

It is submitted that to overcome this impasse it is necessary to devise a system that recognises all of the competing values: the security of society and the individual rights and due process protections that are impinged on as a result of the implemented practices. Importantly, the purpose of this system would be not to promote one set of values above the other but to recognise the legitimacy of both factions: i.e. it is legitimate to want to implement a

\textsuperscript{478} Ibid.
technology that will aid in the solving of crime, but similarly it is legitimate to be sceptical about the use of technology that will further allow the state to interfere with the protections that have developed to protect those targeted by the criminal process. An important element of this approach is that its purpose is not to devise an emotionless and rigid balancing act the sole aim of which is to adjudicate on the validity of a technology or practice in a particular situation, but to recognise the legitimacy of the values of both factions, even after a decision or approach has been adopted, by allowing the _losing_ value to continue to _exert force_ on a particular decision; as Suter notes _the overridden values do not go away; they retain — moral traces”_.

This approach is drawn from the theories of moral philosopher WD Ross, who argues that we have numerous primary obligations and duties in life that require us to act in a certain manner. However, none of these duties or obligations are absolute. In the absence of conflict, Ross asserts that we should fulfil a primary duty or obligation and we should only refuse to fulfil such a duty or obligation when met by an equally conflicting or more pressing duty or obligation. Thus if we view a duty or obligation as an absolute (such as public security or a human right) it _could not be overridden under any circumstance_ and would therefore _have priority over all other obligations with which it might come into conflict_.

Ross attempts to reconcile this difficulty by recognising that a primary duty or obligation may be chosen over another primary duty or obligation if there is a _strong moral reason_ to do so. Importantly though _this reason may not always be decisive or triumph over all other [moral] reasons_ or other primary duties or obligations.

This approach is not to undervalue or undermine the primary duty or obligation. They are _intrinsically binding_, but they should not be allowed to be determinative in every given situation. Ross’s approach acknowledges the fact that we _will often result in our feeling pulled by competing primary duties_ in struggling to decide which of the primary duties

---

481 Ross WD, _The Right and the Good_ (Oxford University Press 1988), 19. See also Childress JE, _Moral Responsibility in Conflicts_ (Oxford University Press 1982), 62, who notes that _prima facie does not mean — apparent_ in contrast to — real”, for prima facie duties are real although they are distinguished from — actual” duties.
484 Ibid.
should be the determinative duty. The determinative duty should depend on "the total situation, including various possible courses of action with all their features of primary rightness and wrongness". Ross does not outline or attach a weight to particular duties but suggests that the determinative duty can only be established in any circumstance by "full reflection". As Ross observes:

the more correct answer would be that the ground of the actual rightness of the act is that, of all acts possible for the agents in the circumstances, it is that [act] whose prima facie rightness in the respects in which it is prima facie right most outweighs its prima facie wrongness in any respects in which it is prima facie wrong.

Ross’s theory is based on a form of reflective intuitionism which, by analysing the situation from a right or wrong perspective, comes to a decision by "virtue of the totality of its ethically relevant characteristics".

It is suggested that the adoption of this reflective approach for the use of DNA profiling within the criminal justice system allows tangible values such as detecting crime and exonerating the innocent to be recognised whilst also recognising abstract concepts such as human rights and due process values. It also allows both sets of values to be recognised before and after a particular decision has been made, which allows overridden values to remain relevant and engaged in the debate as opposed to becoming marginalised with little or no relevance once a decision has been made. As Suter notes, "They leave → residual effects” or → moral traces” as they continue to exert force on our subsequent attitudes and actions. Ross likens the effect to one of breaking a promise, "we do not for a moment cease to recognise a prima facie duty to keep our promise, and this leads us to feel ... compunction ...; we recognize, further, that it is our duty to make up somehow to promise for the breaking of

---

487 Childress JE, Moral Responsibility in Conflicts (Oxford University Press 1982), 68.
489 Ibid.
490 Ross WD, Foundations of Ethics (Clarendon Press 1939), 86.
the promise'.\(^{492}\) Thus the argument suggests that as we pursue the determined duty or obligation, the _regret_ and _moral trace_ left by the opportunity cost of the overridden duty will result in us intuitively adopting a policy that will _approximate as closely as possible the values enshrined in the overridden duty_.\(^{493}\)

From the outset it is acknowledged that this _reflective_ approach has a number of limitations: thus it is not put forward as an omnipotent solution for the use of technology (in this case DNA profiling) in the criminal process. It does not offer decisive conclusions or a mechanism for precisely evaluating difficult situations.\(^{494}\) Whilst it does rely on _some intuitive judgments and subjective weightings_, this _does not reduce the process of balancing and overriding to arbitrary or merely subjective preferences_.\(^{495}\) We are steered by _the cumulative product of the moral reflection of many generations, which has developed an extremely delicate power of appreciation of moral distinctions_.\(^{496}\) When we attempt to _balance_ competing duties and obligations, it is necessary to engage in Rawls's _reflective equilibrium_, which necessitates us to _check decisions from general principles against more intuitive judgments about proper outcomes for particular cases_.\(^{497}\) As Beauchamp and Childress note this form of moral reflection _conform[s] closely with our experience as moral agents_.\(^{498}\)

The argument in favour of this approach is that it will seek to incorporate the diverging values and interests of the various stakeholders who may be affected by this process. It is

\(^{492}\) W.D. Ross, _The Right and the Good_ (Oxford University Press 1988), 28. See also Ewing AC, _Second Thoughts in Moral Philosophy_ (Macmillan 1959), 110, suggesting that our prima facie duty to keep the promise _should always affect our mental attitude towards an action_ even to the point of experiencing regret.

\(^{493}\) Miller RB, _Casuistry and Modern Ethics: A Poetics of Practical Reasoning_ (University of Chicago Press 1996), 47.

\(^{494}\) It is suggested that the assessing of the validity of a particular value system cannot be outlined in a strict mathematical formula. As Beauchamp TM and Childress JF, _Principles of Biomedical Ethics_ (4th edn, Oxford University Press 1994), 36, note _the process of balancing cannot be rigidly dictated by some formulaic method_ in ethical theory_. On this issue, see generally, Prichard HA, _Does Moral Philosophy Rest on a Mistake?_ in _Moral Obligations: Essays and Lectures_ (Oxford University Press 1957), 1. Philosophers such as Jeremy Bentham advocated a hedonistic calculus, which presumes that a quantitative approach and decision procedure can determine what is morally right or wrong. But it is submitted that such a calculus is ultimately unworkable. For more information on this issue see Suter SM, _Are You Moral?_ (University Press of America 1984), 94.

\(^{495}\) Beauchamp TM and Childress JF, _Principles of Biomedical Ethics_ (4th edn, Oxford University Press 1994), 35–36, who note that the balancing of the relative rightness and wrongness of competing norms _is further complicated by the wide range of relevant considerations_.

\(^{496}\) Ross WD, _Foundations of Ethics_ (Clarendon Press 1939), 41.


\(^{498}\) Beauchamp TM and Childress JF, _Principles of Biomedical Ethics_ 4th ed. (Oxford University Press 1994), 36, noting that although _plural and conflicting values make comparisons difficult . . . [a] plurality of value and judgments does not by itself stifle sound deliberation, balancing, justification, and decision making_.
argued that while such an approach will seek to examine the potential benefits of DNA technology for criminal investigations, the ‘reflective’ and discursive approach will ‘contain’ the ‘unnecessary’ or ‘premature’ application of a particular development or procedure. In addition, while amorphous values such as human rights and due process values will play a central role in the ‘reflective’ approach, they will not be conceived as absolute. It will seek to create a mechanism in which the application of DNA profiling procedures and practices should be grounded in clear justifications and be subject to civic engagement (and ultimately acceptance).

Therefore the goal of this system is to recognise the legitimate interests in protecting public safety and promoting victims’ rights whilst acknowledging the impact that such a technology or policy has on rights (both individual and societal) and due process values that are a prerequisite of a modern democratic system. The benefit of this system is that it will allow ‘moral traces’ of the overridden value system to exert influence over the triumphant value in particular circumstances. It is submitted that such an approach will aid in minimising the impact or ‘softening’ the blow of a particular decision, by identifying a goal but ensuring that the necessary safeguards and policies accompany the implementation of the goal so as to minimise its impact on individuals subject to the policy.

A criticism that could be leveled at this approach is that it resembles the ‘proportionality test’ often adopted by the courts when adjudicating on a decision. However, it is submitted that while the approach bears a similarity to the proportionality test often utilised by the courts, it is submitted that it differs in a couple of respects. Firstly, the courts utilise this approach having regard to the circumstances of a particular case: for example, does the particular policing procedure infringe upon an individual’s rights to privacy, having regard to the benefits for and justifications made by society for the adoption of this policy? A problem

499 The concept of proportionality has featured heavily in reports analysing the use of DNA within the criminal justice system. For example see Nuffield Council on Bioethics, The forensic use of bio information: ethical issues (London 2007). While a common principle of legal reasoning, evident in both the Irish and European Court of Human Rights jurisprudence, it is a principle that needs to be utilised cautiously. For example, careful attention needs to be paid to the goal attempting to be achieved and the costs inherent in attempting to achieve this goal. Similarly if a goal is found to be legitimate and proportionate to a particular aim, questions arise over the extent to which an individual right may be infringed in pursuit of that goal. There is an element of singularity to the concept of proportionality as it involves assessing the potential consequences surrounding the pursuit of a particular goal. Thus how far and to what extent a right may be infringed will be dependent on the circumstances of a particular case. See Human Genetics Commission, Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance of the national DNA database (November 2009), 98. For a more general discussion of the concept of proportionality in Ireland see for example, Foley B, “The Proportionality Test: Present Problems” (2008) 1 Judicial Studies Institute Journal 67.
with this approach is that an individual’s rights are often overwhelmed by the ‘public interest’ argument in allowing the use of the particular procedure. For example, in the context of a case involving DNA, the ‘public interest’ argument would favour the use of a particular DNA profiling procedure if it can produce probative evidence during the investigation of a violent crime. Constructed and considered within such a narrow framework the rights of the individual are often overtaken by the rights and interests of society in seeking to prosecute violent crime. Thus the danger is that if we rely on the reactive proportionality principle of the courts, the ‘truth finding’ capacity of DNA evidence may be allowed to overwhelm the individual rights and due process values when considered within the parameters of a particular case.500

In contrast, the ‘reflective’ approach adopts a methodology that is not myopically concerned with the outcome of a particular case (a role that is required to be conducted in the courts), it is concerned instead with employing a methodology that respects the wide ranging (often competing) interests that are engaged when utilising a DNA profiling procedure or technique within the pre-trial criminal process. For example, situations in which such a methodology may be suitable include: a decision to implement a DNA mass screen in a local area following a high profile or series of related crimes; a decision to retain the DNA profile of an individual once he or she has been excluded from an investigation or the relevant case has been discontinued; a decision to utilise a DNA familial search or a decision to authorise a surreptitious sampling of a ‘person of interest’ so as to gather an intelligence sample for the purpose of a particular investigation. These examples all present (as will be elaborated upon within the subsequent chapters of the thesis) difficulties for individual rights within the criminal process. However all also contain an element of commonality notably the potential to benefit a criminal investigation (i.e. the particular technique such a DNA mass screen or a surreptitious sampling may aid or at least narrow down the potential list of potential suspects for police during an investigation).

To combat the ‘persuasive’ benefits of utilising these techniques, the ‘reflective’ approach seeks to underpin the use of any DNA procedure or technique within a justified and organic

500 DNA evidence is often differentiated from other forms of evidence such as testimonial evidence, because in general the strength and accuracy of the DNA evidence (if collected in an appropriate manner) will not have been affected by the way the evidence was obtained. As Semikhodskii observes, ‘Because of the high cogency of DNA evidence it seems that, by admitting evidence obtained in breach of the relevant legislation, the benefit to the public good outweighs the fairness to the accused.’ See for example, Attorney-General’s Reference (No.3 of 1999) [2000] 2 Cr App R 416; R v Weir [2000] Cr App R 416.
framework that aims to benefit from the potential of the technology but in a manner that ensures that those targeted by the process are adequately and continually protected.

Thus when considering a particular procedure or use of DNA technology (such as a DNA mass screen) within a criminal investigation a ‘reflective’ approach would consider a myriad of issues, inter alia:

- The utility of the procedure or approach – what are the benefits? For example, if a DNA mass screen is authorised what are the benefits of using this technology over other criminal investigatory procedures;

- Can these benefits be clearly outlined and if so, can they be independently verified? For example, if a DNA mass screen is deemed to be beneficial, are there examples of such an approach producing successful results in the past and if so have independent post-screen assessments been conducted and reported favourably on the decision to conduct the initial screen;

- What are the human rights, due process and ethical concerns caused by the adoption of the decision? Before the decision to undertake a screen is authorised, has an adequate review of the fundamental issues created by the use of the technique been conducted? Have less invasive procedures been considered? Have the adequate stakeholders, such as human rights advocates been involved in this consultation process?

- What are the concerns if the procedure or approach is not utilised? Can such an investigation be conducted without such a screen being authorised?

- Can adequate safeguards be adopted and established to minimise intrusions upon those targeted by the process? In the context of a mass screen this would involve a two stage process. Firstly, following the initial review highlighting the full range of issues created by the adoption of this technique, a subsequent review should be undertaken so as to adequately develop a range of safeguards to adequately protect and minimise the intrusions upon those targeted by the process? Secondly, during this process, it must be assessed who is best placed to grant authorisation of such a technique. In general, this thesis is offering judicial or independent oversight as opposed to police authorisation so as to implement an additional buffer of consideration before any DNA technique is authorised;
• Has adequate consideration been granted to the construction of sufficiently robust and independent oversight mechanisms to ensure that the constructed safeguards are adhered to? In the content of any DNA procedure, the importance of this provision will be heightened if the initial authorisation is afforded to the police authorities so as to mitigate the police ‘temptation’ to utilise a particular technique before adequate justifications or safeguards have been established;

• Will or has an adequate and regular review process been established that will continually verify if the safeguards and protections remain sufficient while also assessing whether a particular approach or procedure remains legitimate? For example, in the content of a mass screen, how long should such a screen is allowed to continue without producing any clear benefits or results? Is the screen operating and adhering to the initial criteria that were established?; and

• Finally (although it is important to note that this is not an exhaustive list and should remain fluid so as to maximise the chances of continually protecting those targeted by the process), any technique should have a sufficient mechanism to engage with the public to examine whether there is civic support and confidence in the proposed approach or procedure? Thus in the concept of a mass screen, it is important to gauge public support before, during and after the screen to accurately capture the mood and public attitudes surrounding the use or planned use of the particular procedure.

On the issue whom should initiate this reflective approach, it is postulated that legislators as opposed to the courts are in a superior position to adopt such a methodology. As a result of the courts often focusing on the circumstances of a particular case, it has been argued by a number of commentators that legislators should set limits on when and how particular DNA technologies may be used. As Orin Kerr notes:

> When technology is changing quickly, it is ideal for the law to change quickly along with it. Congress can legislate comprehensively, updating rules when technology changes. Congress can enact much clearer rules, soliciting expert input and acting when the technology is still current. The absence of a case and controversy requirement allows Congress to set the best rule for current

---

technology; in contrast, judicial efforts to hit a moving target force the courts to keep the law uncertain to maintain flexibility for future technological change.\textsuperscript{502}

Moreover, as Kerr elaborates if the court misunderstands the technology, the court usually will not know that until after the opinion is released and has become binding law. In contrast, Congress can reach decisions by seeking expert input, holding hearings, and receiving responses concerning proposed bills and statutory text.\textsuperscript{503} Thus Kerr argues that as legislatures are not restricted by a case and controversy requirement, they may be better placed to set the best rule for the use of this technology.\textsuperscript{504}

It is suggested that the collection, retention and use of DNA by the state should be strictly located within an all-encompassing regulatory framework. Ideally the main provisions (such as collection, retention, use and governance) should be outlined within a primary legislative framework. However, in recognition of the developing nature of DNA technology we must postulate that within this framework there should be a reflective provision that enables the framework to be amended in line with developments in science and technology (and societal standards) provided for in secondary or delegated legislation.\textsuperscript{505} Similarly, it would be necessary for all codes or practices and protocols and procedures to adopt a similar organic approach so as to continue to protect those targeted by the process. Oversight and review of any recommendations or proposed amendments (and the system as a whole) should be vested in an independent supervisory committee which should encompass a wide range of stakeholders.

3.5. Conclusion

→ Many critics attack the technocratic society, which they may have come to see as coldly rational and inhuman – a world of technology in which human ends are forgotten in the search for rational techniques and industrial efficiency. In some sense society is dominated by technology, and some people contend that


\textsuperscript{503} Ibid. Kerr notes that the American Fourth Amendment offers limited privacy protections with respect to new technologies, Courts rarely accept claims to Fourth Amendment protection in new technologies that do not involve interference with property rights, and have rejected broad claims to privacy in developing technologies with surprising consistency. The result is a critical gap between privacy rules the modern Fourth Amendment provides and privacy rules needed to effectively regulate government use of developing technologies.”


\textsuperscript{505} For detailed workings of the Irish legislative system see Byrne R and McCutcheon P, The Irish Legal System (4th edn, Butterworths 2001), chapter 13.
technology determines not only means, but also ends. Technology is seen as the search for the one most efficient way, with no room for human choice or value judgement about values.  

Technology is becoming an integral part of modern society. The capacity of technology to harvest and retain information is understandably having an impact upon one of the traditional pillars of social control, namely the criminal justice system. The concern, in light of recent events and the increasing desire for security in society, is how these new technologies will be utilised in the criminal process to combat the growing crime ‘problem’. It is important, particularly in today’s rights-adverse environment that we openly engage with the importance of rights and due process values. The concern is as Roberts notes:

> It is all too easy to neglect the practical and political significance of our taken for granted fundamental principles, but we undervalue them at our peril; the more so at a time when many of our traditional principles of criminal procedure, especially those which are designed to protect the accused, are widely criticised and progressively eroded.

The difficulty is assessing how we should react to crime within this volatile and emotive atmosphere. At both an international and domestic level there are recent issues that are presenting problems for a semblance of objectivity and rationality in the debate. In an international sense human rights and due process protections are under increasing pressure from the ‘war on terror’. As a result of terrorism, numerous intrusive surveillance and risk based practices have become embedded in modern life under the umbrella of security and crime prevention. On a domestic level, as will be introduced in chapter seven, Ireland’s ‘war on organised crime’ is having (and threatening to have) an analogous impact upon rights and due process values in this jurisdiction. The difficulty is assessing how we as a society should respond to ‘threats’ that terrorize and jeopardise the safety of our society. New threats may require new solutions. It is, as Walsh, notes, important not to consider criminal justice in

---


terms of finality, it is a truism that the justice system cannot stand still. It must respond to changes in society and, in particular, to changes in the threat posed by criminal activity.  

The difficulty though is establishing how we should go about neutralising this threat. The concern is that technologies, such as DNA profiling, are increasingly perceived as a white knight or silver bullet for criminal investigation. As McCartney observes, increasingly technology and science are turned to as a first port of call to answer —whodunit?” (along with —howdunit?”) questions posed by the criminal justice system. The ability to answer such questions with greater ease and accuracy has in turn increased trust in forensic sciences, with the expectation that turning to scientists will increasingly be a first and not last resort.  

However, while the application of DNA and DNA databases (and other technological devices) are undoubtedly useful, we need to proceed with caution on this issue. The concern is we are now placing a heavy reliance on science and technology over traditional means of investigating and prosecuting crime. While Corns argument about the impending appropriation of the criminal justice system may resonate with a plot from a Hollywood movie script, if we continue blindly down this technological/scientific path there is a danger that it may move from a fantasy to a chilling reality. While science and technology should be used to aid the search for justice, it is imperative that they are not allowed to become the sole arbiter in this regard.

Therefore it is submitted that the application of any technological or scientific procedure (such as DNA profiling) to the criminal process should be strictly located within an all-encompassing reflective regulatory framework. The goal of the framework would be to strictly outline the collection, retention, use and governance of DNA technology by the state. However, in recognition of the evolving nature of the science and technology it would seek to adopt a mechanism that enables the state to continually benefit from future developments; although to prevent or contain the application of frivolous approaches or procedures it requires that such benefits can be clearly demonstrated.

Moreover, if a procedure or approach is adopted sufficient safeguards must be established to minimise the intrusions upon those targeted by the process. Finally, given the sensitivity of

511 Ibid.
the issue involved (enabling the state to collect, retain and gain access to an individual’s genome) it would endeavour to facilitate and engage with the public on the continuing, future and acceptable use of DNA technology within society.
4. Collection

4.1. Introduction

DNA is of little use if investigating authorities are precluded from collecting DNA samples for the purposes of a criminal investigation. Simplistically, the collection of DNA samples can be divided into two, crime scene samples and comparator samples. In the aspiration of achieving clarity this chapter will firstly briefly address the issues surrounding the collection of the former before moving on to the more complicated issue of comparator samples.

On the issue of comparator sampling, the chapter will initiate discussion by presenting a high level overview of the myriad of methodologies available to investigating authorities to collect comparator samples (including consent, compulsion and deception). This will entail commentary on relevant issues where appropriate. Subsequently the chapter will aim to highlight the plight of ‘function creep’ in the area of comparator sampling by tracking recent policy developments in a number of international jurisdictions. It will be argued that the original justifications for the sampling process are currently being diluted by the desire to utilise DNA technology.

The chapter will then conclude by recommending that the collection of all samples should be located within a strict legislative framework, such as the ‘reflective’ regulatory framework postulated in the previous chapter. Given the developing nature of DNA technology and the increasing means of collecting biological samples, it is suggested that the reflective framework provides an amenable, organic solution to the collection process. It recognises the plurality of desires within the process in combination with the evolving nature of the technology. Thus the aim of the ‘reflective’ framework is to enable the introduction and flexible use of the technology during a criminal investigation while concomitantly acknowledging the need for ‘precaution’ and ‘homage’ to be paid to the sensitive issues (inter alia, individual rights, due process values and the macro societal impact of the particular collection technique) that require safeguarding during the sampling process.

512 The concept of the ‘precautionary principle’ has become prevalent in other technological areas such as science, health and the environment. The principle, also prevalent in the area of bio politics, aims to tackle the uncertainty and fear of ‘leaving something out’ by creating regulatory frameworks that enable flexibility and adaption as a result of developments in technology, research findings or international discrepancies. For an introduction to this topic see Dratwa J, ‘Representing Europe with the Precautionary Principle’ in Jasanoff S (ed), Reframing Rights: Bio-constitutionalism in the Genetic Age (MIT Press 2011), chapter 12.
4.2. Crime Scene Samples

The collection (and subsequent retention) of DNA from a crime scene would seem relatively unproblematic. It has long been accepted that the police are encouraged and are in fact under a legal duty to gather and retain relevant evidence from a crime scene (which would include DNA evidence in the form of bloodstains, hair, saliva and so forth).\(^\text{513}\) The basis for this retention is the interest of the police and prosecution in solving the case, but also that a defendant is able to adequately contest the evidence in court. As Murphy J observes in *McGrath v DPP*:

> 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.\(^\text{514}\)

---

\(^{513}\) In *Dillon v O’Brien* Davis Palles CB stated that 'the interest of the State 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’. See *Dillon v O’Brien* (1887) 20 LR IR 300, 317. Also in *The Queen v Lushington* 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.' See *The Queen v Lushington* [1894] 1 QB 420, 423. In *Murphy v DPP* 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'. See *Murphy v DPP* [1989] ILRM 71, 76.

\(^{514}\) Murphy J (High Court 20 December 2001), 6. The Supreme Court recently considered this issue. In *Braddish v DPP* [2002] 1 ILRM 151. The accused was before the court charged with robbery. His arrest was based on CCTV footage which ostensibly identified him. The defendant requested a copy of the CCTV footage, but was informed that the tape (containing the footage) had been returned to the owners as the prosecution did not intend to rely on it. The Supreme Court restrained the further prosecution of the accused until he was given an opportunity to view the tape, as it might allow the defendant an opportunity to exculpate himself. Hardiman J outlined the duty of the Gardaí to seek out and preserve all evidence that had a bearing on guilt and innocence of an accused. 'It is a well-established principle that evidence relevant to guilt or innocence must, so far as necessary and 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.' [2002] 1 ILRM 151 at 155.
On the issue of legal duty and the collection and preservation of evidence, Heffernan has offered a useful guide, drawing from recent Supreme Court jurisprudence, for best practice in this area:

- The duty does not lend itself to a precise, exhaustive definition; it must be interpreted realistically on the facts of each individual case;
- The prosecution is obliged to disclose all relevant evidence within its possession to the defence. Therefore, evidence relevant to guilt or innocence must be kept until the conclusion of the trial, so far as that is necessary and practicable;
- Relevant evidence includes material which might reasonably lead to other information which may prove or disprove the accused’s involvement in the relevant offence;
- The obligation on Gardai may go beyond simply preserving evidence and include a duty to seek out evidence that may assist the defence;
- The duty is not absolute and must be tempered by considerations of necessity and practicality in contemporary policing;
- The defence are under an onus to act promptly in requesting material considered to be relevant;
- In seeking to obtain an order prohibiting the progression of a trial because of the absence of evidence which ought to have been preserved, the accused must show that there is a real risk that his trial would be unfair and that directions or rulings by the trial judge would be insufficient to avoid such unfairness; and

---

516 Braddish v DPP [2001] 3 IR 127.
Where the relevant evidence belongs to a third party, some consideration should be
given to the need to return the property to its rightful owner at the earliest
opportunity. Where the relevant evidence belongs to a third party, some consideration should be
given to the need to return the property to its rightful owner at the earliest
opportunity.522

Recent Supreme Court cases highlight that there is a general duty on Gardai to seek out and
preserve all relevant evidence in a criminal case.523 However, the failure to do so will not
automatically lead to prohibition against seeking a prosecution in a particular case.524
Prohibition of prosecution will depend upon the circumstances of the case and whether there
was a risk of an unfair trial because of the failure to collect or preserve the relevant
evidence.525

While the collection (and preservation)526 of crime scene samples (including DNA) would
seem to be relatively uncontroversial, the collection and retention of these samples would be
of little use without the ability to link these samples to suspected individuals. Therefore to
utilise the crime scene samples it is necessary for a jurisdiction to allow it’s investigating
authorities to collect and compare comparator DNA samples which can be compared with the
crime scene samples.

4.3. Comparator DNA samples

The collection of a comparator sample presents one fundamental question: how do the police
gather the relevant sample? However, when one begins to consider this issue it begins to
present a myriad of issues, inter alia: should the police be allowed to ask an individual for a
DNA sample? Should police be granted a framework to allow the collection of such samples?
In the absence of consent should police be allowed to compel an individual to give a sample?
Should the collection of a DNA sample be limited to a particular category of offence? What
form of authorisation should be necessary for the collection of a DNA sample? How and by
whom should such a sample be obtained? This list illustrates the range (it is not an exhaustive

522 Rogers v DPP [1992] 2 ILRM 695; MacKeown v DPP, unreported Supreme Court, 9 April 2003; Connolly v DPP [2003] 4 IR 121.
523 For example see Savage v DPP [2009] 1 IR 185; Ludlow v DPP [2009] 1 IR 640; Toohey v DPP [2008] IESC 64.
524 Particularly if there is alternative evidence available to the defence. See Savage v DPP [2009] 1 IR 185. See also Byrne v Judges of the Circuit Court [2007] IEHC 266.
525 In Ludlow the court granted an order prohibiting an injunction, holding that there was a risk of an unfair trial. Ludlow v DPP [2009] 1 IR 640. An injunction was also granted in RC v DPP [2009] IESC 32, although Denham J did note that such injunctions against prosecutions would only be granted in exceptional
circumstances.
526 Although as will be discussed in the next chapter, technological developments are beginning to present ethical issues surrounding the retention of crime scene samples.
list) of difficult questions that surround the collection of comparator DNA samples during a criminal investigation.

Therefore, given the extremely invasive nature of the issue involved (allowing a state to gather an individual’s genetic material), let us critique the rationale for legal acceptance.\footnote{While the principle behind the taking of a comparator DNA sample from an individual to compare it with another DNA sample is analogous to other biometric identifiers, the unique information (and manner in which a sample is collected) separates and heightens the intrusions involved in the DNA sampling process when compared with other biometric identifiers. As a result of the highly invasive procedure required to obtain a DNA sample from an individual (although this has been somewhat diluted through the development of the Buccal swab to replace a blood sample) and the extremely sensitive nature of the information contained within the sample, it is suggested that the taking of a DNA sample should perhaps require a greater justification than that affiliated to other biometric identifiers.}

As introduced above, DNA can be garnered primarily from two perspectives; namely from a crime scene and/or from an individual. From the collected information a DNA profile is derived which is juxtaposed with the DNA profile from the alternate sample. The juxtaposition will result in a match or non-match being located. From this information DNA evidence is produced which may in conjunction with other evidence be utilised to ‘build’ a case against the accused. If the relevant individual is charged with the offence and is brought to court, the discovered DNA evidence may (similarly to other forms of evidence) be adduced.\footnote{For further reading on expert evidence see Fennell C, The Law of Evidence in Ireland (3rd edn, Bloomsbury Professional 2009), chapter 7. See also Heffernan L et al, Evidentiary Foundations (Tottel Publishing 2008).}

The DNA evidence produced at court (presented in the form of expert evidence)\footnote{For an excellent analysis of the expert evidence and forensic samples see Heffernan L, Scientific Evidence: Fingerprints and DNA (Firstlaw 2006).} will usually consist of the expert (predominately a forensic scientist) informing the court of the veracity of a ‘match’. A match may be between a crime scene and an individual or an individual and a DNA profile on a database.

Central to this DNA matching process is the need to collect a DNA sample from an individual. Herein begins the difficulty in utilising DNA within the criminal process. As was illustrated in chapter two, a DNA sample contains an individual’s most intimate information, thus the context and manner of its collection require clear, reasoned and socially (and legally) acceptable justifications to be proffered by the state. In acknowledgement of the sensitive issues, jurisdictions have increasingly provided a legislative framework for the collection of bodily samples.\footnote{Relevant examples will be introduced in a latter section of the chapter.}
As the Law Reform Commission observes the rationale for the collection (and subsequent retention (which will be the subject of the next chapter)) of evidence such as DNA samples (and their derived DNA profiles) is predicated on a number of reasons:

(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.\footnote{Law Reform Commission, \textit{Consultation Paper on the Establishment of a DNA Database} (LRC CP 29 – 2004), para 2.11.}

Focusing on collection the Commission offers a number of justifications for the collection of DNA samples. The two primary justifications proffered are the \textit{evidential significance} justification and the \textit{intelligence gathering} justification.\footnote{A third form of justification was proffered in the form of the \textit{true identity} of person identification justification. This form of justification is predicated on the need for the police to confirm the identity of an individual during an investigation (which will primarily involve an individual in custody). It is based on discovering false names or aliases. This rationale has long been used to justify the collection and gathering of other identifiers at the point of arrest, such as fingerprints and photographs. However, it is submitted that while this rationale may become applicable in the future, given the current delays in processing DNA samples, its use as a rapid individual identifier (particularly in contrast to fingerprints and photographs) undermines the argument for its regular application upon arrest. For further discussion on this issue see Law Reform Commission, \textit{Consultation Paper on the Establishment of a DNA Database} (LRC CP 29 – 2004), paras 5.19-5.24; see also Kaye D, \textit{The constitutionality of DNA sampling on arrest} (2001) 10 Cornell Journal of Law and Public Policy 455.} Of the two, for the purposes of collection, evidential significance is more pertinent. Evidential significance is relevant as obtaining a sample enables the authorities to not only link an individual to a crime but it also enables them to exclude an individual’s DNA from a crime scene (thus potentially eliminating a prospective suspect from a crime scene). This rationale is applicable to investigating current and historic crimes (as the collected sample can be linked/excluded from the current or historic sample). However, such rationale cannot be extended to future crimes,
as without a sample with which to compare, the collection of a sample is at best speculative.⁵³³

It is submitted that the second rationale, the ‘intelligence gathering’ justification, is not directly applicable to the collection of comparator samples; it is linked more to the concept of retention (which will be addressed in the next chapter);⁵³⁴ although as will be documented below the ramifications of a collection method may potentially create ‘intelligence’ or ‘additional’ evidence for the investigating authorities (such as the revelation of a volunteer’s reluctance to consent to sampling procedure during a mass screening). However, such potential ramifications are, as will be discussed below, problematic and do not create a satisfactory rationale for ‘intelligence gathering’ to be proffered as a sound justification for DNA collection.

Focusing on the issue of justification, Stone observes that ‘any interference with any aspect of an individual’s life requires the strongest justification.’⁵³⁵ For example, it is argued that ‘the burden of proof lies on those who would restrict the freedom of the individual to show that restriction is necessary.’⁵³⁶ The concept of interference and justification is eloquently summarised by Mill:

[T]he only purpose for which power can be rightly exercised over any member of a civilised community against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant. He cannot rightfully be compelled to do or forbear because it will be better for him to do so, because it will make him happier, because, in the opinions of others to do so would be wise, or even right. These are good reasons for remonstrating with him, or reasoning with him, or persuading him, or entreating him, but not for compelling him, or visiting him with evil in case he do otherwise.⁵³⁷

Therefore a fundamental question is whether the gathering of an individual’s DNA can be justified by compelling reasons. In relation to the collection of evidence the harm/interference placed upon the individual is justified as being necessary for the investigation of the offence.

⁵³⁴ Ibid. 5.15–.18.
⁵³⁶ Ibid. 2.
Moreover, to ensure an element of protection and to minimise the harm/interference in these matters states have traditionally limited the collection of these samples to a two step test: the individual is _reasonably suspected_ of committing an offence (categorisation of offence generally varies among jurisdictions) and additionally (and importantly) the required sample is relevant for the investigation. The two step test arguably correlates with the _evidential significance_ justification developed earlier.

The first prong of the test, _reasonable suspicion_, is perceived as a bulwark against the arbitrary interference of the state against the individual. The rights of an accused individual are impacted heavily during pre-trial investigation: i.e., potential searches, seizures and/or detention. Typically the police must establish reasonable suspicion before a suspect can be intruded upon by the relevant police powers to investigate a crime. However, the term _reasonable suspicion_ suggests an element of subjectivity.\footnote{538} This reasonableness is often linguistically postulated in the following terms: _reasonably suspects_, _with reasonable cause to suspect_ or _has reasonable grounds to suspect_.\footnote{539} Arguably best known as the concept of _reasonable suspicion_, defined by Lord Diplock in the following terms: _whether a reasonable man, assumed to know the law and possessed of the information which in fact was possessed by the defendant, would believe that there was reasonable and probable cause_.\footnote{540} Essentially an objective test, it is based on invoking an element of justification into the potentially arbitrary or subjective nature of police discretionary powers. The European Court of Human Rights (ECtHR) has held that reasonableness forms an _essential part of the safeguard against arbitrary arrest and detention_ and that reasonable suspicion _presupposes the existence of facts or information which would satisfy an objective observer that the person concerned may have committed the offence. What may be regarded as _reasonable_ will however depend upon all the circumstances_.\footnote{541}

The second limb of the test is predicated on the relevance of the sample to the current investigation. Thus if an individual was arrested for burglary and blood was found on the

\footnote{538} It has been defined as an _articulable and particularised belief that criminal activity is afoot_, *Ornela v United States* 517 US 690 (1996) 695, which has _an objective basis ... based on facts, information, and/or intelligence_ and _can never be supported on the basis of personal factors_. Home Office, *Police And Criminal Evidence Act 1984, Code A: Code of Practice for the Exercise by: Police Officers of Statutory Powers of Stop and Search; Police Officers and Police Staff of Requirements to Record Public Encounters* (London 2011), para 2.2.

\footnote{539} For an overview of a variety of statutory formulations for the concept of _reasonable suspicion_ see *Walsh D, Criminal Procedure* (Thomson Round Hall 2002), 176 para 4.39. On this issue O’Malley has stated that _[t]here is an accepted distinction between suspicion and belief, to the extent that belief imports a greater degree of certainty_. See O’Malley T, *The Criminal Process* (Roundhall 2009), 362.

\footnote{540} *Dallison and Caffrey* [1964] 2 All ER 610.

\footnote{541} *Fox v United Kingdom* (1991) 13 EHRR 157, para 32.
broken window pane that was used to access the house, the collection of a sample from such an individual would be deemed justifiable. On the contrary if the individual was arrested for burglary and no biological evidence was located at the crime scene, the justifications for such sampling begin to become tenuous.\textsuperscript{542} A similar logic has long been applied to the collection of other bodily samples from individuals during a criminal investigation.\textsuperscript{543}

Moreover the \textit{two step} has traditionally been subject to independent (often judicial) oversight, thus providing an additional buffer for the \textit{reasonableness'}, \textit{relevance'} and arguably \textit{evidential significance'} of the sampling of an individual. Although the two step test, accompanied by independent oversight, would seemingly provide a useful foundation for any framework enabling the procurement of bodily samples, as will be documented towards the end of the chapter international jurisdictions are increasingly diluting the traditional safeguards in this area.

Before discussing the current trajectory of international DNA collection policy the next sections, will present an overview of the various methods by which a sample may be collected from an individual, namely through consent, compulsion or deception. The sections will highlight the main issues involved in each whilst attempting to locate the relevant justification for each technique.

\textbf{4.3.1. Volunteer}

The concept of allowing the state to coercively obtain a sample from an individual can be avoided by the police asking an individual to \textit{volunteer} a sample. The need for investigating authorities to be allowed to \textit{ask} individuals for a DNA sample is manifold, \textit{inter alia}: a crime scene will often contain a number of biological samples, many of which may be of innocent individuals whose DNA may be required so as to eliminate their DNA profiles from the investigation; additionally during the investigation of a crime, there will be a number of stakeholders involved such as police, forensic investigators (depending on

\textsuperscript{542} As Steventon notes, \textit{In order to justify the taking of samples … the benefits for the detection of crime must be clear}.' Steventon, B. \textit{―Creating a DNA Database‖} (1995) 59 (4) Journal of Criminal Law 411 at 418–419.

jurisdiction) and crime scene analysts;\textsuperscript{544} it may provide police with a useful means of eliminating a _person of interest_ from an inquiry whom they may not currently have sufficient evidence against to formulate a _reasonable suspicion_, which would potentially enable them to compel a sample from the individual and finally, as has been illustrated in Ireland, it may be utilised by police to gather a sample from formal suspects thus avoiding the strict legislative regime (and their accompanying safeguards) that enable a sample to be collected from such individuals.\textsuperscript{545}

The primary concern under these scenarios (excluding individuals who are in formal police custody)\textsuperscript{546} is that the individual requested to provide a sample will feel _obliged_ to provide the sample. Gans describes this scenario as _DNA request surveillance_: an individual is essentially presented with a flawed choice – either submit a sample or become a suspect in the particular investigation; as Gans notes, it is a technique that _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_.

\textsuperscript{544} The creation of an elimination index is a concept that has been growing in other jurisdictions. For example, it incorporates a database of individuals who may as a result of their job or circumstances be present at a crime scene (thus who may have potentially inadvertently contaminated the scene). In general, the use of this index will be for the elimination index only and those requested to be placed on this index (for a specific purpose or more generally) must consent in writing (new entrants to particularly sectors are often as a stipulation of employment required to submit such a sample) and be made aware that their information will only be used for elimination purposes. The recent _identification_ of the _Phantom of Heilbronn_ is a pertinent example of the benefits in requiring all those connected to the criminal investigation process (including police officers, laboratory officials and manufacturers who supply the tools to gather samples) to be obliged to submit samples for the purposes of being entered on an elimination index. The case involved the German police embarking on a _wild goose chase_ after a string of murders throughout Germany which were linked to a matching DNA profile. After two years of investigations, €18 million spent on resources and 3,000 sampled individuals it was discovered that an individual who was manufacturing the German cotton swabs (used for gathering the DNA profiles) had accidentally contaminated a batch of swabs, thus explaining the often contradictory DNA matches that had been discovered. See Krimsky S and Simoncelli T, _Genetic Justice: DNA Databanks, Criminal Investigations and Civil Liberties_ (Columbia University Press 2011), xiv. For further details on the _Phantom of Heilbronn_ case see, Moore T, _Germany Hunts Phantom Killer_” _BBC News_ (11 April 2008). Available at: [http://news.bbc.co.uk/2/hi/europe/7341360.stm](http://news.bbc.co.uk/2/hi/europe/7341360.stm); _— DNA Bungle Haunts German Police_” _BBC News_ (March 28, 2009), available at: [http://news.bbc.co.uk/2/hi/europe/7966641.stm](http://news.bbc.co.uk/2/hi/europe/7966641.stm); Boyes R, _—Phantom of Heilbronn: Hunt for the Killer Who Leaves Clues and Bodies_” _The Times_ (10 April 2008), available at: [http://www.timesonline.co.uk/tol/news/world/europe/article3715800.ece](http://www.timesonline.co.uk/tol/news/world/europe/article3715800.ece); _—DNA Clues in Hunt for „Faceless’ Serial Killer_” _Telegraph_ (14 April 2008), available at: [http://www.telegraph.co.uk/news/worldnews/1584625/DNA-clues-in-hunt-for-faceless-serial-killer.html](http://www.telegraph.co.uk/news/worldnews/1584625/DNA-clues-in-hunt-for-faceless-serial-killer.html). For further reading on the issue of elimination sampling see LRC Report, Law Reform Commission, Report on the Establishment of a DNA Database (LRC 78 – 2005), para 4.41.

\textsuperscript{545} As will be discussed in chapter seven the concept of suspects being asked to _volunteer_ a sample (a common law power) so as to avoid the relevant legislative regime has been affirmed by the Irish Supreme Court in _DPP v Boyce_ in 2008. The case will be subject to analysis in chapter seven, for the purposes of the current discussion it illustrates the police desire to collect DNA evidence, however it also illustrates the important of creating a clear structure for the collection and retention of such samples so as to ensure that those targeted by the process are adequately protected. See _DPP v Boyce_ [2008] IESC 62.

\textsuperscript{546} The issue for individuals within policy custody surrounds the safeguards inherent in the collection and retention of an individual's biological sample.
voluntarily. There is growing consensus that such a request is difficult to reconcile with an individual’s privilege against self incrimination.

The privilege has been held to incorporate a disparate group of immunities, a general immunity, possessed by all persons and bodies from being compelled on pain of punishment to answer questions, the answers to which may later be used to incriminate them. In essence it is predicated on the basis that within the common law adversarial system the burden of proof rests on the state. In Ireland the privilege is recognised as both a common law and constitutional right. However, despite its recognition, it has been held that the privilege (as recognised under the common law and the Constitution (often conjoined with the Right to Silence under Art 38.1) can be derogated by statute. In essence the courts have utilised a proportionality test when assessing whether state actions (such as drafting legislation that infringes an individual’s privilege against self incrimination) can be justified by seeking communitarian gains (such as investigating and detecting crime). To justify the infringement the courts have held that the infringement must be necessary to achieve the objective in question and any resultant interference must be achieved through the minimum interference necessary to achieve this objective.


549 R v Director of the Serious Fraud Office, ex parte Smith [1993] AC 1, 3. For a useful overview of the privilege against self incrimination and its relationship to DNA see the LRC, Consultation Paper on the Establishment of a DNA Database (LRC CP 29 –2004), 70–77.

550 Justice Field offers a useful overview of the rationale behind the privilege, “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.” Brown v Walker (1896) 161 US 591, 637.

551 See the People v McGowan [1979] IR 45.

552 For example, see Heaney v Ireland [1996] 1 IR 580. The case involved s.52 of the Offences Against the State Act 1939. 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. The Court held that there was an appropriate balance struck between the state’s right to protect itself and an individual’s privilege against self incrimination. See also Rock v Ireland, [1997] 3 IR 484. The case involved s.18 and s.19 of the Criminal Justice Act 1984. These provisions 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 individual could be convicted from inferences on their own. In both cases the Supreme Court held that while the privilege was a constitutional right, it was not absolute and can be restricted by statute. In both cases the court held that the privilege may be compromised under circumstances relating to the “common good”, once the measures implemented to restrict the right were proportionate and relevant to the goal of the objective.
The privilege is also recognised under the European Convention on Human Rights. A number of European cases have recognised that coercive evidence gathered by the state can violate an individual’s right to a fair trial under Art 6. From an Irish perspective of particular importance was the ECtHR decision in *Heaney and McGuinness v Ireland*. Despite also applying the proportionality test, the ECtHR reached a different conclusion from the Supreme Court on the issue of whether section 52 of the Offences Against the State Act 1939 violated an individual’s privilege against self incrimination. The European Court held that the choice between revealing one’s movements or imprisonment essentially destroyed the protection provided by the privilege. The compulsion inherent in the ‘choice’ was held to be disproportionate to the aim attempted to be achieved. Thus it would seem that the ECtHR has adopted a stricter test than the Supreme Court on the proportionate inference allowed when restricting the privilege. Given Ireland’s obligation to interpret and enact laws in concurrence with ECtHR it would seem that future legislation in this area will have to adhere to this stricter standard.

It is questionable whether the privilege is applicable to the concept of bodily sampling. For example, present jurisprudence suggests that the privilege can only be claimed in relation to ‘testimonial evidence’ as opposed to ‘real evidence’. Gans observes that ‘testimonial evidence’ incorporates a suspect’s ‘incriminating thoughts’ in contrast to ‘real evidence’.

For example, see *Funke v France* (1993) 16 EHRR 297; *Saunders v United Kingdom* (1996) 23 EHRR 313; *Murray v United Kingdom* (1996) 22 EHRR 29. In *Murray* the Court considered the issue of adverse inferences and whether they were amenable to an individual’s right to a fair trial under Article 6 of the ECHR. The Court held that it would be incompatible with the right to silence if a conviction was based exclusively on an individual’s failure or refusal to answer police questions. It accepted, however, that an accused’s silence could be weighed in combination with other evidence to enhance the case for the prosecution. The Court presented a number of factors to consider when assessing whether an adverse inference was compatible with the ECHR: had appropriate warnings been given to the accused on the effect of remaining silent (or of refusing to cooperate)? Did the accused understand the warning? Had the accused been given access to legal advice; the fairness and reasonableness of the interference which were actually drawn by the court.

*Heaney and McGuinness v Ireland* (2001) 33 EHRR 264. See also *Quinn v Ireland* (2001) 33 EHRR 264. *Quinn* involved the arrest of an individual, Paul Quinn, following the shootings of Gardai Jerry McCabe and Ben O’Sullivan in Limerick in 1996. Quinn was arrested, detained and subsequently brought before the courts and charged under section 52 of the Offences Against the State Act 1939 for a failure to give an account of his movements. He was convicted in the District Court and sentenced to six months. The accused lodged a complaint with the ECtHR (motivated by the fact that the provision had already been deemed constitutional by the higher courts in Ireland in *Heaney*). In the ECtHR case, the state argued that the infringement of the individual’s right to silence and privilege against self incrimination was proportionate and justified when considered and balanced against the relevant public order and security concerns. The Court rejected the argument, holding that a government provision cannot extinguish an individual’s right to silence and/or privilege against self incrimination guaranteed by Article 6(1) of the ECHR. They also noted that there was a violation of the presumption of innocence guaranteed by Article 6(2).

which consists of _incriminating features of a suspect’s body_. The testimonial versus real distinction has been long recognised: for example, in 1910 in the US, Justice Holmes argued in _Holt v US_ that _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_. More recently in the UK, in _R v Smith_, the English Court of Appeal, held that the taking of bodily samples does not breach the privilege against self incrimination. Similarly in _Saunders v United Kingdom_, the ECtHR recognised the distinction between testimonial evidence and real evidence. The court held that the privilege did not apply to the taking of real evidence (such as bodily samples), as such evidence was _independent from the will of the accused_. Therefore at a cursory glance it would currently seem that the taking of a DNA sample during an investigation does not fall under the auspice of the doctrine of the privilege against self incrimination. However, given the sensitive material contained within a DNA sample and the continued _unlocking_ of the sequences within our genome, it has been

559 The concept of the privilege and its boundaries has been subject to a litany of debate in recent times. See, for example, Ashworth A _Self incrimination in Human Rights Law – a pregnant pragmatism_” (2008-9) 30(3) Cardozo L Rev 751; Bilz K, _Self incrimination doctrine is dead, long live the self incrimination doctrine; confessions, scientific evidence and the anxieties of the liberal state_” (2008-9) 30(3) Cardozo L Rev 807; Sedley S, _Wringing Out the Fault; Self Incrimination in the 21st Century_” (2001) 52(2) NLQ 107; Redmayne M, _Rethinking the Privilege against self incrimination_” (2007) 27(2) Oxford Journal of Legal Studies 209. For recent European jurisprudence on the privilege see _O’Halloran and Francis v UK_ (2008) 46 ECHR 407, the Court held that while previous jurisprudence had suggested that compulsion would violate Art 6, in this instance it was not necessarily so as the court could have regard to other factors in assessing whether the privilege against self incrimination has been violated. Factors should include: the nature of the compulsion; the fact that compulsion was part of a regulatory scheme (such as a road traffic scheme); whether or not information was simple and specific (such as details about who was driving a car); and that the enabling statute contains a defense of due diligence. In this case, upon considering the factors, the court held there was no breach of the privilege. Importantly the court held that the focus of the decision should be on the nature and degree of compulsion used to obtain the evidence, the existence of any relevant safeguards in the procedure, and the use to which any material so obtained was put’. See (2008) 46 ECHR 407, 410. See also _Jalloh v Germany_ (2007) 44 ECHR 32. This case involved four officers holding down an individual while a medical official administered an emetic so as to force an individual to regurgitate a bag containing drugs. While the case centered on Article 3, it was also argued that the garnered evidence might violate Art 6, despite it existing _independent from the will of the accused_. The court utilised the same criteria that had been proffered in _O’Halloran_ but added the criteria _the weight of the public interest in the investigation and punishment of the offence at issue_. This insertion and the rationale of the Court have been subject to criticism. As a result of the decision Ashworth observes _the future application of the privilege against self incrimination is now pregnant with possibilities, as a result of the Jalloh judgment, and it is time for the significance of the privilege as part of the essential core of criminal justice rights to be reasserted_. See Ashworth A _Self incrimination in Human Rights Law – a pregnant pragmatism_” (2008-9) 30(3) Cardozo L Rev 751, 774.
suggested that this arbitrary _real/testimonial_ division may need to be revisited in the future.\(^{560}\)

Returning to the issue of asking for a DNA sample and the privilege, the concern remains that the reluctance or refusal of an individual to provide a sample in such a scenario will result in him/her becoming a formal suspect in the investigation. The question to assess is whether such a scenario (police suspicion as a result of a refusal to consent to a policing procedure) will engage the privilege against self-incrimination. Additionally, it is submitted that consent within these circumstances cannot be considered _voluntary_ consent, as the individuals involved are compelled to provide a sample or to reveal their reluctance to being sampled.

This scenario can occur in a number of situations: when a suspect has been arrested, when a

\(^{560}\) In _Saunders v UK_, Walsh J held that _a man could not be made the deluded instrument of his own conviction_, see _Saunders v UK_ (1996) 23 EHRR 313. While it was observed above that traditionally courts have distinguished between the concept of testimonial and real evidence, an interesting question is whether technology and developments in science may lead to a scenario in which we may need to rethink this position. While the search for the _criminal gene_ may seem akin to science fiction, research on the human genome is increasingly _unlocking_ the _blueprints_ within our DNA. For example, research in the area of genetics and sociology has recently suggested that there is sufficient evidence from behavioural genetics and evolutionary psychology for an acknowledgment of genetic influences upon human behaviour. For example see, Owen, T, _―Genetic-social science and the study of human technology” (2006) 54 (6) Current Sociology 897–917_; Hamer D and Copeland P, _Living with our genes: Why they matter more than you think_ (Macmillan 1999); Pinker S, _The Language Instinct: The New Sciences of Language and Mind_ (Penguin 1994); Ridley M, _Genome: The Autobiography of a Species in 23 Chapters_ (Fourth Estate 1999); Ridley M, _Nature Via Nurture: Genes, Experience and What Makes Us Human_ (Fourth Estate 2003). Although there are dissenting arguments surrounding genes and behaviour, Giddins argues that _human beings have no instincts in the sense of complex patterns of human behaviour_. Giddins A, _New rules of sociological method: A positive critique of interpretative sociologies_ (Polity Press 1993), 57; although others have responded strongly to such criticism such as Ridley, who argues _after 25 years of studies in behavioural genetics, that view is no longer tolerable_ and _―genes do influence behaviour_. Current arguments have ventured towards the mutuality of genes and the environment, insisting that genes do not fix instructions but do _take their cue from nurture/the environment_. Owen T, _―Genetic-social science and the study of human technology” (2006) 54 (6) Current Sociology 897, 899_. Ridley concurs with this observation: _If genes are involved in behaviour then it is they that are the cause and they that are deemed immutable. This is a mistake made not just by genetic determinists, but by their vociferous opponents, the people who say behaviour is _not in the genes_, the people who deplore the fatalism and predestination implied, they say, by behaviour genetics. They give too much ground to their opponents by allowing this assumption to stand, for they tacitly admit that if genes need to be switched on, and external events _or free willed behaviour _can switch on genes._ However, despite the growing literature surrounding genes and behaviour, it is questionable whether the content of an individual’s genes will raise additional issues in relation to the privilege against incrimination. For example, if a DNA sample is obtained from an individual (whether by consent or compulsion) the sample will either include or exclude the individual from the current investigation. The presence of _risky genes_ will be not be relevant to the current investigation, as they will not reveal any information about the crime in question. Given the _―othering_ that has been well documented within late modernity, the discovery of a _criminal gene_ or perhaps more realistically _genes that influence_ behaviour would undoubtedly raise serious ethical questions surrounding the use and safeguards surrounding genetic databases. However, again even within this scenario it is difficult to foresee how the privilege would be relevant within such a situation. Ridley M, _Nature Via Nurture: Genes, Experience and What Makes Us Human_ (Fourth Estate 2003), 53. Other recent technological developments, such as Brain Fingerprinting (which is essentially an advanced polygraph, involving MRI scans of a suspect’s brain to reveal whether a firsthand account of a crime scene is present) may be more relevant to this discussion. The admissibility of evidence from these technologies would be subject to the evidential rigours of a particular jurisdiction; however, it may present an interesting intelligence gathering or case building mechanism for police. For an interesting article on this issue, see Roberts AJ, _―Everything new is old again: Brain fingerprinting and evidentiary analogy” (2007) 9 Yale JL & Tech 234._
volunteer is asked to provide a sample as part of an investigation or during a DNA mass screen (which also involves the sampling of volunteers),\textsuperscript{561} although within these scenarios there are important differences, for example, the refusal of a suspect to provide a sample can be differentiated from that of a volunteer. A suspect is already suspected of an offence and typically under such a scenario the police are entitled to compel such an individual to provide a sample. Thus it is debatable whether the privilege is engaged under such a scenario, as it has traditionally not been held to be applicable to \textquoteleft real evidence\textquoteright. However, a convincing argument for engaging the privilege is the concept of it exposing an individual\textapos;s reluctance to \textquoteleft volunteer\textquoteright a sample whether as a volunteer or perhaps as part of a DNA mass screen.\textsuperscript{562}

A DNA mass screen (often referred to as a DNA dragnet in the US and Canada) involves the police \textquoteleft screening\textquoteright a particular segment of the population in relation to a specific offence where an unidentified DNA profile has been obtained from the crime scene. As Gerlach states, \textquoteleft DNA Dragnets are police investigations in which people are asked to submit to mass DNA testing so as to exclude themselves from the suspect list.\textsuperscript{563}

\textsuperscript{561} Further details on the concept of a mass screen will be discussed below.

\textsuperscript{562} One could speculate that given the recent developments of DNA databases, a suspect who may be arrested in relation to a particular offence may be reluctant to provide a sample as it may link him to other unsolved crime scenes profiles that may be retained on the database – although refusal based upon this motivation does not seem wholly persuasive.

\textsuperscript{563} See Gerlach N, \textit{The Genetic Imaginary: DNA in the Canadian Criminal Justice System} (University of Toronto Press Inc 2004), 35–38. A brief examination of the first DNA mass screen conducted in Canada emphasises the difficulties inherent when conducting such a process. Vermilion, Alberta, a small rural town in Canada, which consists of approximately 3,800 people, was the subject of a series of rapes in the early 1990s. Police obtained DNA samples for the three victims, but were unable to identify a suspect through traditional police enquiries. The police then decided to conduct a DNA mass screen of a target group within the community; the victims had given descriptions of the attacker from which the police identified 90 potential suspects within the community. The 90 suspects were asked to \textquoteleft volunteer\textquoteright a blood sample in relation to the police investigation. A local citizen noted the potential stigmatisation of being asked to provide a DNA sample, \textquoteleft nobody\textapos;s saying whether they have or haven\textapos;t given blood because who wants to be stigmatized with that? In a small town, as soon as they think you have one foot in the police station door, they think something\textapos;s happened\textquoteright. See Gerlach N, \textit{The Genetic Imaginary: DNA in the Canadian Criminal Justice System} (University of Toronto Press Inc 2004), 184. Unsurprisingly nobody refused to provide a blood sample during the initial investigation, as Craig Smith, lead investigator at the time, stated \textquoteleft I\textapos;m sure if someone were not to give blood and that were found out, he would be really, really unpopular\textquoteright. However, after 18 months of investigation and a total of 240 DNA tests, police were still unable to secure a match. The police began to spread the net of their screen; attempting to garner public support, the mayor of the town spoke out in favour of the increased screening stating that \textquoteleft Anyone who wants to protect the system and wants to live in a safe society, why would we have anything to hide\textquoteright. Despite increased public cooperation, the police \textquoteleft warned that anyone who did not give a blood sample on request would face an intrusive background check\textquoteright. In spite of these aggressive police tactics, a match was never found and the case remains unsolved. The second DNA screen in Canada was conducted in Port Alberni, British Columbia, a town of 18,000 on Vancouver Island. In 1996, an eleven year old girl was found dead and sexually assaulted. Following an extensive police investigation that produced no leads, police resorted to a DNA mass screen. The screen involved sampling 411 individuals. The screen failed to produce a result. In 1999, Roderick Pattern was convicted on assault and theft charges; on providing a DNA sample his sample matched the one found at the original crime scene. Gerlach N, \textit{The Genetic Imaginary: DNA in the Canadian Criminal Justice System} (University of Toronto Press Inc 2004), 185.
As outlined in the opening chapter, the first recorded use of DNA in a criminal investigation (the Colin Pitchfork case in the UK) utilised a DNA mass screen during an investigation. Theoretically, a DNA mass screen is a promising tool for criminal investigation. Take the following example: in a small community a women is found raped and murdered. The only evidence found at the scene of the crime is a semen stain obtained from the victim. On analysis, forensic scientists derive a DNA profile from the biological evidence obtained from the scene. The police have no other leads; no witnesses; no motive; no other evidence. In desperation, they decide to conduct a DNA mass screening of all the local men in the community. On the assumption that one, the DNA profile will match one of the men in the community or two, on elimination of all the males in the community the police can exclude a large number of potential suspects from the investigation and consequently widen their search. However, a DNA mass screen is a highly controversial and invasive procedure. In essence it allows police to question and sample innocent individuals in the hope of locating the perpetrator. It lacks both probable cause and individualised suspicion, which are generally required for justifying state intrusion.\footnote{For a discussion on probable cause and individual suspicion see Winickoff DE, ‘Judicial Imaginaries of Technology: Constitutional Law and the Forensic DNA Databases’ in Jasanoff S (ed), \textit{Reframing Rights: Bioconstitutionalism in the Genetic Age} (MIT Press 2011),chapter 7.}

The concern is that by conducting these ‘fishing expeditions’ often based upon ‘generalised’ suspicion (for example, the perpetrator may be a black male approximately six feet tall), all those caught within the ‘net’ (of generalised suspicion) have no choice but to cooperate with the mass screen (returning us to Gans concept of DNA request surveillance).

Those in favour of mass screens will argue that unless you have something to hide then there is no reason for you to refuse a DNA sample.\footnote{For example, Bud Basken, the father of a murdered women in the US, states, ‘The bottom line to me is there’s only two people that don’t want to have DNA taken and that’s a person that has done something wrong or going to do something wrong.’ The quote is taken from an interview given by Bud Busken during the police investigation of the rape and murder of his 21 year old daughter, Juli Busken. Juli Busken was abducted in a parking lot and was subsequently raped and murdered at a nearby lake in the US in 1996. The police obtained a DNA profile from the victim and proceeded to undertake a 200 person mass screen of local men; however, the screen failed to identify a suspect. In late 2003, Anthony Sanchez was arrested for burglary and his DNA was matched to the Juli Busken murder and he was subsequently convicted. See Leung, L. ‘DNA Dragnet: Police Seek DNA samples from the public’ CBS News 60 minutes (September, 12 2004). Available at: http://election.cbsnews.com/stories/2004/09/10/60minutes/main642684.shtml#}

Proponents of mass screens cite successful cases which have been solved because of (or through the aid of) successful mass screens, such as the Pitchfork case.\footnote{Mass screens involving fingerprints have been widely used throughout the twentieth century. For example, in May 1948, in the ‘Blackburn baby’ case, fingerprints were taken from the entire male population of Blackburn, where a three year old girl had been sexually assaulted and murdered. A fingerprint was obtained from the}
when investigating serious offences. By 1999 the police had implemented approximately 120 mass screens, and by January 2005 this number had risen to 292. By March 2005, 50 of these screens were still _active_ (sampling was being undertaken in relation to the offence) and 242 _inactive_ (samples had not been taken during the previous 12 months or the case has been solved). Of the 292 screens, 61 (approximately 20 per cent) produced significant matches.

There have been a number of large successful mass screens in Europe, the largest of which was conducted by German authorities in 1998. Approximately 16,000 men were sampled in Struecklinggen, a Northern German village during the criminal investigation of the rape and murder of an 11 year old girl: the screen led to the arrest and subsequent conviction of a local mechanic.

However, despite a number of success stories, mass screens in the majority, particularly when conducted on a _fishing expedition_ basis, have proved to be predominately unsuccessful. For example in the UK, during the investigation of Sara Cameron’s murder, almost 5,000 people were screened yet no conviction resulted. In the US there have been 19 reported DNA _dragnets_, however, to date only one screen has been successful in directly identifying the perpetrator. When one examines the successful screen it was conducted under _screen_ appropriate circumstances. The case involved a mass screen conducted during the criminal

---


568 Ibid. The largest screen in the UK involved the sampling of approximately 4,500 samples men in Chipping Sodbury in 1996, for the murder of Louise Smith. None of the samples matched the crime scene profile and subsequent developments identified an individual then residing in South Africa as a _match_; he was convicted in 1998. See McCartney C, _The DNA Expansion Programme and Criminal Investigation_ (2006) 46 British Journal of Criminology 175.

569 See Grand JS _The Blooding of America: Privacy and the DNA Dragnet_ (2004) 23 Cardozo Law Review 2277, 2285. In 2002, a serial rapist and murderer was identified in Poland following a DNA mass screen. DNA profiles obtained from the 14 rape victims (ranging in age from 9 to 26) revealed a matching DNA profile thereby revealing that the same individual had perpetrated all of the crimes. The police decided to investigate all the men in the town (Swinoujscie, northwest Poland) between the ages of 22 and 38. Four hundred and twenty one of those investigated were subsequently swabb. The screen did not reveal an exact match, however, it returned a near miss. The police subsequently sampled the male relations of the near miss and obtained an exact match. The individual was convicted of the fourteen rapes and one murder. See Dettlaff-Kakol A And Pawlowski R, _First Polish DNA Manhunt – An Application of Y Chromosome STRs_ (2002) 116 International Journal of Legal Medicine 289–291; Spencer CA, _Genetic Testimony: A Guide to Forensic DNA Profiling_ (Person Prentice Hall 2004), 20.


investigation into a murder of a nursing home resident in Lawrence, Massachusetts. Given the status of the victim police quickly identified a small suspect list of 25 based on employment and access to the victim.\textsuperscript{574} Therefore given the highly invasive nature of mass screens it is difficult to justify their existence based upon a \textquotesingle needle in haystack\textquotesingle rationale. As McCartney states \textquotesingle Police intimidation, public reluctance to cooperate and repeated approaches for samples have all been cited as consequences of the strategy of mass screens, which have also been castigated as a \textquotesingle waste of money\textquotesingle.\textsuperscript{575} The Irish Council for Civil Liberties have questioned the use of mass screens and asked whether traditional forms of investigation could be more useful and impinge less on police resources.\textsuperscript{576}

The major concern is that individuals are under considerable pressure to consent during a mass screening; those who refuse are faced with potential penalties for non compliance or, at a minimum, suspicion based on nothing more than refusal to provide a sample. The use of mass screens requires the local community or identified group to verify their innocence rather than the police utilising traditional investigative methods to identify a viable suspect. As Saul elaborates:

\begin{quote}
There is a tendency for DNA testing to replace trial, since a charge becomes determined by the apparently definitive and publicly conclusive DNA Test. The presumption of innocence is reversed, undermining a key element of the right to a fair trial, even though a myriad of scientific, statistical and procedural issues may affect the accuracy of a particular DNA Test.\textsuperscript{577}
\end{quote}

The Australian police have successful used the technique in a number of high profile cases; however, the cases have been subject to substantial criticism particularly around the area of consent, as Findlay and Grix note:

\begin{quote}
This erosion of rights is perhaps most clearly evidenced in the recent cases of mass testing in Wee Waa and Norfolk Island, where non-compliance became not so much an exercise of choice but rather an act equated with an inference of guilt ... Arguably, this is best characterised by the familiar question heralded in
\end{quote}

\begin{flushleft}
\textsuperscript{576} ICCL position \textit{Paper on the Establishment of a DNA Database} (2003). Available at: \url{www.iccl.ie}
\end{flushleft}
media reports of the time: “Why wouldn’t he give a sample if he has nothing to hide?” There has been enough challenge to the reality of informed consent within forensic procedures without the added strain concerned with the actuality of volition in mass testing situations.\(^\text{578}\)

There are those that argue that the concept of requesting a DNA sample from a volunteer cannot be reconciled with an individual’s privilege against self incrimination. Gans has suggested that to protect the privilege in these circumstances we must prohibit the concept of police officers asking individuals from the public to consent to a forensic procedure.\(^\text{579}\) Instead we must implement a provision that allows police in certain circumstances to garner a forensic sample from an individual without their consent.\(^\text{580}\) While undoubtedly a controversial proposition, Gans argument potentially provides a more logical approach. Moving the decision for forensic sampling in the case of volunteers away from the police and to the courts would provide a semblance of oversight against police misuse of this invasive procedure while also removing the problematic element of choice. Interestingly, the Law Reform Commission in its Consultation Paper in 2004 provisionally recommended that a DNA sample could be taken compulsorily from a volunteer on foot of a court order where the person was attempting to obstruct the course of justice by refusing to provide a sample and the sample is necessary for the investigation of a serious offence.\(^\text{581}\) However, in a volte face the Commission altered its recommendation in its 2005 report: it proposed that there are no circumstances that would justify the taking of a biological sample from a volunteer without his consent.\(^\text{582}\)

---

\(^{578}\) Findlay M and Grix J, “Challenging forensic evidence? Observations on the use of DNA in certain criminal trials” (2004) 14(3) Current Issues in Criminal Justice 269–282. In 2000, the residents of the town of Wee Waa were asked to volunteer DNA samples as part of a mass screen in relation to the investigation of an unsolved rape. Kennedy L, “Prime Suspect” Sydney Morning Herald (15 July 2000). Similarly to the Pitchfork case the perpetrator was not apprehended by the mass screen directly, but it did lead to the events which caused the perpetrator’s arrest. As Gans explains “When asking for a DNA sample, the police also asked all residents a variety of questions, including their views on sexual assault sentencing, indicating that they were after more than just people’s DNA. Police noted that Boney [the perpetrator] took much longer than other residents to complete the questionnaire. Boney confessed his guilt a few days later, prior to any DNA matching.” Gans J, “Something to Hide: DNA, Surveillance and Self Incrimination” (2001) Current Issues in Criminal Justice 168, 172.


\(^{580}\) Ibid.


While the taking of volunteers’ DNA without their consent is undeniably a controversial proposal, a consideration of the recent mass screening under Operation Minstead in the UK illustrates why it may provide a more amenable solution. Operation Minstead involved a mass screening of approximately 2,000 black men in London. Police asked the individuals to volunteer a DNA sample in relation to a series of rapes and sexual assaults in southeast London. During the course of the investigation, 125 men refused to ‘volunteer’ a sample, which resulted in police sending ‘encouraging’ letters to these 125 individuals suggesting that it would be in their best interests for them to cooperate. Five men still refused to volunteer a sample and they were subsequently arrested, their profiles obtained, speculatively searched and retained on the National DNA Database in the UK. The approach in Operation Minstead raises serious legal issues, given that the default position for arrest is ‘reasonable suspicion’: was the ‘reasonable suspicion’ in this case created from these five individuals refusing to provide a DNA sample? As McCartney suggests ‘If the police are to arrest on a non compliance with a DNA request, then that casts non compliance as a crime, a worrying trend and may lose the spirit of cooperation that is essential in these circumstances.’

It is difficult to dispute that individuals engaged in this process are faced with the concept of ‘DNA request surveillance’. Recipients of a request can either submit to the request (provide a DNA sample) or refuse (thereby revealing their fear of the surveillance and potentially become a suspect based exclusively on their refusal to provide a sample). Offered under the guise of choice, in reality there is no real choice here for the volunteer. The fact that

---

583 Edwards R, ‘Delroy Grant charged over _night stalker_ serial sex attacks” The Telegraph (16 November 2009).
585 Delroy Grant (colloquially referred to as The _Night Stalker_) was eventually identified as the perpetrator. He was subsequently arrested for the five rapes, six indecent assaults and eleven burglaries in 2009 and convicted in 2011. Hughes M, ‘Deloy Grant convicted of Night Stalker sex attacks”, The Telegraph (24 March 2011). Ironically Grant was arrested after police returned to more traditional policing methods. Undercover officers apprehended Grant after a burglary in the early hours of the morning. It subsequently transpired that a police mix up in 1999, meant that Grant should have been arrested 10 years previously on suspicion of burglary. A witness had reported seeing Grant wearing a balaclava and gloves. The witness provided police with a description and a registration number from a car. Police identified the car as being registered to a Delroy Grant as the owner of the car. However, police began to investigate the wrong Delroy Grant, whose DNA profile was already present on the UK DNA Database. Unsurprisingly the mistaken Delroy Grant did not match the DNA profile that had been identified from the crime scenes of Operation Minstead. Consequently the police ruled Delroy Grant out as a potential suspect. See Evans M, ‘Night Stalker: Police blunders delayed arrest of Delroy Grant’ The Telegraph (24 March 2011).
587 Defined by Gans J, ‘Something to Hide: DNA, Surveillance and Self Incrimination” (2001) Current Issues in Criminal Justice 168, 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’.
a person’s refusal to consent to giving a sample could open them to suspicion suggests a potential breach of the privilege against self incrimination. It has been accepted that the privilege can be violated in certain circumstances, 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 cause self incrimination by non suspects. Such compulsion may not constitute a proportionate interference with a person’s privilege against self incrimination.

However, despite the concerns surrounding volunteer sampling the ability of the police to garner samples from volunteers may often be both pragmatic and necessary during the course of a criminal investigation. For example, as was alluded to at the beginning of the section, a crime scene will typically be contaminated by a range of individuals (such as those who regularly frequent the area and/or investigators working within the area). In such circumstances, and in the absence of the police being allowed to ask these individuals to volunteer a sample, it would be necessary (on the basis of expediency) to grant the police legislative authority (subject to independent authority) to gather samples from such individuals. Granting such authority (to compel a sample from a volunteer) is a highly controversial issue, but arguably justifiable in strictly controlled circumstances under the _evidential significance_ justification postulated in the previous section.

In essence the concept of compelling a sample from a volunteer should be a method of last resort. The common practice of such a technique would arguably impact heavily upon the concept of civil compliance among society that is fundamental to the theory of modern western policing, namely policing by consent. The police rely on public support and cooperation in order to be effective in their order maintenance role; _policing relies on the fact that most of the time, most members of the public voluntarily obey and support the police_. Additionally, if used regularly to garner samples from those stakeholders working

---

588 Rock v Ireland (1997) 3 IR 484.
589 For further reading on DNA and mass screening see O’Dwyer D, _The Innocent have nothing to hide: DNA profiling and Mass Screening_ 22(3) ICLJ 82.
591 Tyler T R, _Enhancing Police Legitimacy_ 593 The ANNALS of the American Academy of Political and Social Science 84, 85. Echoing this Sunshine and Tyler argue that _When the public view an institution as legitimate, they defer to and obey it because they agree and consent to it, rather than because the institution can_
as part of and in conjunction with the criminal investigation it would perhaps have a detrimental impact upon staff moral and attitudes towards the sampling regime.

In summary the desire and justification for allowing the police to seek a volunteer sample can be attributed to the ‘evidential significance’ justification. Its role is not predicated upon locating or confirming a suspect but upon eliminating those who may potentially have contaminated a crime scene. However, despite this justification it is suggested that such a request and any other provisions involving volunteer sampling should be situated within a regulated framework (to ensure that those targeted by the process are sufficiently protected). Further commentary on this issue will be provided in the penultimate section of the chapter.

4.3.2. Compel

As noted in the previous section, if an individual refuses to provide a DNA sample, the authorities must turn to alternative means to gather the sample (and derive the relevant evidence). Options include physically removing a biological sample from the individual, deceptively obtaining a biological sample or acknowledging the refusal while notifying the individual that an adverse inference may be adduced as incriminating evidence in court.

Focusing on the concept of compulsion, to protect or minimise the bodily integrity issues involved in the sampling process, jurisdictions have generally implemented a range of safeguards and protections. As Walsh observes the state (in the form of the police) are not conferred with powers to obtain bodily samples from individuals without consent. Thus to counteract this impediment governments have predominately enacted legislation allowing police officers to collect bodily samples when it is relevant to the investigation of an offence. A notable example is the taking of a breath sample from an individual who is arrested for a road traffic offence. Under the harm or interference principle alluded to earlier such interference is justified as being necessary on both public safety and criminal investigation grounds.
In the area of DNA sampling states have adopted a number of strategies to minimise the 'interference' involved in the sampling process. For example, a common development has been to segregate the taking of a forensic sample into categories of intimate and non-intimate. Generally, the taking of an 'intimate sample' (such as a blood or urine sample) may not be done by force but refusal to provide such a sample will be accompanied by an adverse inference. In contrast, in the majority of jurisdictions reasonable force may be used to obtain a non-intimate sample (such as a saliva or hair follicle sample). As will be documented in the Irish chapter an interesting element of this issue is the fluid nature of this segregation (between what is deemed an intimate and non-intimate sample). For example, there is a with a growing trend of 'intimate' categories becoming 'non-intimate' categories over time, the most notable being that of the buccal (saliva) swab. The result of this shift has enabled a wider application of compulsion in the collection of bodily samples in the pre-trial criminal process.

The concept of physically obtaining a sample (even a non-intimate) from an individual has been subject to a litany of academic debate. For example, on the issue of a 'buccal swab' Walker and Cram argue that 'the prospect of force being used by the police to keep a suspect still and to hold his lips open whilst his mouth lining is scraped does seem to be an extremely intrusive search'. However, it is suggested that while circumstances can be constructed to suggest that a buccal swab may be an extremely invasive procedure, in the main it is suggested that it presents a less intrusive manner of gathering a DNA sample than that of a blood sample. While physically opening an individual’s mouth to obtain the sample entails a substantial degree of intrusion, if undertaken within an appropriate setting (i.e., by trained and independently supervised individuals) and taken with 'reasonable force' its usefulness for criminal investigation would seem to outweigh the bodily integrity issues involved. Redmayne follows a similar line of thought and argues that Walker and Cram’s perspective is excessively rigid. He argues that it would result in a loss of relevant evidence and that it is

---

595 The issue is an interesting example of a due process protection being violated to prevent the infringement of an individual's bodily integrity.
596 Crimes Act 1914, s.23XJ (Australia); Criminal Investigations (Bodily Samples) Amendment Act 2009, s.48 A (New Zealand); Police and Criminal Evidence Act 1984, s.117 (England and Wales); Criminal Procedure (Scotland) Act 1995, s.19B.
598 Interestingly, Canada, the jurisdiction with the narrowest sampling regime, allows any 'necessary' force to be utilised to obtain such a sample. See Criminal Code of Canada, s.487.07. The use of the word 'necessary' is disconcerting and potentially allows the individuals taking the sample too much scope in which to gather the sample. It is preferable to limit the taking of the sample to 'reasonable force' so as to limit the potential intrusion involved. If reasonable force is not sufficient to gather the sample then an adverse inference should be allowed to be drawn and presented in court if necessary.
important that the concept of bodily integrity and acceptable means of identification techniques are not static.\textsuperscript{599}

For example, in the United Kingdom (including Scotland), DNA samples are collected by means of a buccal (mouth) swab.\textsuperscript{600} However, not all countries follow this methodology. For example, in Australia a buccal swab is defined as intimate and must be obtained by a medical practitioner or another _appropriately qualified person_.\textsuperscript{601} Similarly, in Canada, DNA samples are generally gathered by means of a blood sample by a qualified medical professional. While in the United States and New Zealand a bodily sample may be obtained from either a blood or buccal swab (predominately by a police officer).\textsuperscript{602} Interestingly, in New Zealand, if consent to taking bodily samples is refused, the method of force to obtain a sample is a finger prick blood sample as opposed to a buccal swab.\textsuperscript{603} The diverging modus operandi for obtaining a non-consensual sample highlights the different political, cultural and legal views on the concept of physical intrusion.

While the bodily integrity issues involved in the sampling process may be minimised (by adopting less invasive sampling procedures and ensuring that the samples are taken in an appropriate manner), a concept that has been arguably underdeveloped in relation to sampling has been the informational privacy implications associated with the sampling procedure.\textsuperscript{604} Repeatedly the taking of a DNA sample has been compared to other biological sampling procedures such as fingerprints, a comparison that has been strengthened by developing categories such as intimate and non-intimate. While the procedures present a number of analogous issues, surrounding consent and bodily integrity, the result of the process is extremely different. As outlined in chapter two a fingerprint is a _two dimensional structure_, useful purely as a form of identification; in contrast a DNA sample contains an individual's entire genetic information. Regardless of the taking of an intimate sample or the taking of a non-intimate sample the outcome is the same – the procurement of a DNA sample. Thus it is important not to allow the use of the term _non-intimate_ to disguise the highly sensitive

\textsuperscript{600} Criminal justice and public order act 1994, s 58; criminal procedure (Scotland) Act 1995, s 18(6A).
\textsuperscript{601} Crimes Act 1914, s 23WA.
\textsuperscript{602} Although for the taking of a blood sample, a medical professional will predominately be necessary. However, recent developments and the ability to use a _finger prick_ test means a medical professional to obtain a blood sample is no longer always necessary.
\textsuperscript{604} Given the fact that the concept of privacy is involved in both the sampling, retention and subsequent use of retained material, detailed discussion on the concept of privacy (particularly informational privacy) will take place in the following section so as to avoid repetition.
material (one could suggest the most intimate material that a human being possesses). And it is important to reiterate that the taking of such a sensitive biological sample, necessitates the development of a rigid system to ensure the protection and appropriate use of such a sample.605

Because of the inherent bodily integrity issues involved the taking of bodily samples has been challenged on a number of occasions in international jurisdictions. For example, in *Schember v California* the United States Supreme Court held that a compulsory blood test after an individual was arrested on suspicion of driving while intoxicated was reasonable. The court reached this conclusion because it argued that the sampling involved a minimum extraction of blood and because of its effectiveness and widespread use, the minimum pain or discomfort caused to an individual during the taking of the sample and because the actual taking of the sample was performed by a medical professional in an appropriate setting.606 The use of blood sampling for DNA collection has yet to be challenged in the US Supreme Court. However, it is important to note that federal and state courts have upheld the collection of DNA samples from those arrested on felony offences. The courts generally adopted a balancing test to satisfy the Fourth Amendment (similar to the proportionality test utilised by the ECtHR) arguing that it entails a minimal privacy intrusion, that there is a diminished expectation of privacy for arrestees compared with the general population and its compelling interest as a criminal investigation tool.607 The constitutionality of the compelling of DNA from suspects was examined by the Canadian Supreme Court in 2006 in the case of *R v S.A.B.*608 The Court held that the provisions of sections 487.04 to 09 were not unconstitutional or a violation of section 8 of the Canadian Charter of Rights and Freedoms (which states _everyone has the right to be secure against unreasonable search or seizure_). The court recognised the sensitivity involved in allowing the state to take a bodily sample,

605 The concept of retention and the subsequent use of a DNA sample will be discussed at length in the next chapter.


607 Examples of cases highlighting the use of DNA in criminal investigation are *US v Kincade*, 379 F.Ed 813 (9th Cir. 2004); *Anderson v Virginia*, 650 S.E.2d 702 (Vir. 2006), 706; *US v Pool*, 645 F. Supp. 2d 903 (2009), 912; *Haskell and Ento v Brown* 677 F. Supp 2d. 1187 (2009).

608 *R v S.A.B* 2 S.C.R. 678, 2003 SCC 60. The accused was charged with the sexual assault of a 14 year old girl. The girl in question had become pregnant as a result of the assault. She had an abortion. The police seized the foetal matter for DNA testing. They then obtained a DNA warrant under ss 487.04 to 487.09 of the Criminal Code and seized a blood sample from the accused. A comparison with the foetal tissue found that the chances of the accused not being the father was 1 in 10 million. The accused was arrested and subsequently convicted on the basis of this evidence. On appeal the accused put forward two challenges; one, that a DNA warrant was an unreasonable search and seizure under s 8 of the Charter and two, that compelling an accused to provide DNA material violated the principle against self incrimination in s 7 of the Charter. For analysis of the case Stuesser L, ‘*R v SAB: Putting self-incrimination in context*’ (2004) 42 Alberta L Rev 543.
[it] is undoubtedly the highest level of personal and private information contained in an individual’s DNA;\textsuperscript{609} however, it held that the scope of the sampling regime in Canada was proportionate; thus it did not contravene section 7 (the privilege against self incrimination) or section 8 of the Canadian Charter of Rights and Freedoms.

In reaching this conclusion the court placed a large emphasis on the safeguards outlined in the DNA Identification Act governing the use and communication of DNA samples and profiles, as illustrated by the following passage from Arbour J.’s judgment:

The process of obtaining a DNA warrant is commenced under s.487.05 by sworn information presented ex parte to a provincial court judge, who can only grant the warrant if there are reasonable grounds to believe:

(a) That a designated offence has been committed (importantly, the offences for which one can obtain a DNA warrant are limited to predominately serious violent and sexual offences listed in s.487.04);

(b) That a bodily substance has been found at the place where the offence was committed, on or within the body of the victim, on anything worn or carried by the victim or on or within the body of any person or thing or at any place associated with the commission of the offence;

(c) That the person targeted by the warrant was a party to the offence; and

(d) That forensic DNA analysis of a bodily substance from that person will provide evidence about whether the bodily substance referred to in (b)

Additionally, the judge must be satisfied that it is in the best interests of the administration of justice to issue the warrant (s.487.05(1)).\textsuperscript{610}

More recently, the Supreme Court in Canada again addressed the issue of DNA collection. In \textit{R v Rodgers} the court was required to examine a number of issues, \textit{inter alia}: whether the collection of DNA samples for databank purposes from designated classes of convicted


offenders was reasonable; whether databank provisions strike an appropriate balance between public interest in effective identification of persons convicted of serious offences and rights of individuals to physical integrity and control of release of information about themselves; whether the ex parte nature of proceedings meets minimal constitutional imperatives of procedural fairness; and whether imposition of a DNA sampling order amounts to "punishment". In relation to the issue of sampling the court held that the taking of a DNA sample by blood involves a "minimal impact on the physical integrity of the targeted offenders". The majority (4 to 3) held that while the taking of a DNA sample without consent did constitute a seizure under s.8 of the Canadian Charter of Rights and Freedoms the collection of DNA samples for databank purposes from designated classes of convicted offenders is reasonable.

In terms of justification it is difficult to dispute the "evidential significance" of a compelled sample from a formal police suspect, particularly if the rationale for the sampling has been predicated upon an objectively verified two step test. Thus it is submitted that given the utility of DNA evidence for criminal investigation (in both including and excluding suspects from current and historic crimes) that it is a justifiable tool within the modern criminal investigation toolkit. However, given the sensitive information contained within a DNA sample and the potential intrusions involved in gathering the sample, it is imperative that the procedures enabling the sampling are embedded in a framework that provides sufficient protection for those subject to a sampling procedure.

4.3.3. Surreptitious Sampling

Finally, the above discussion noted the various methods that an investigating authority may use to obtain a comparator DNA sample, namely by consent or compulsion. However, there may be occasions when police are unable to procure a sample under these circumstances (for example, an individual may refuse to consent and/or they may fall short of the required level of reasonable suspicion to justify an arrest (which depending on the national authorities legislative provisions may enable a sample to be taken by compulsion)). As a result of being

611 The case involved the sampling of Dennis Rodgers. Rodgers was sentenced to four years in prison for sexual assault, an assault that occurred while he was on probation for another offence. The police applied for a court order to sample Rodgers not for the purposes of the current investigation but for the purposes of placing it on the databank. See R v Rodgers [2006] 1 S.C.R. 554 (Supreme Court of Canada).
613 Ibid.
unable to secure a sample through consent or compulsion police have recently been increasingly applying _old policing_ techniques in the procurement of DNA samples. For example, a tactic that has been growing in the US in an attempt to provide police with _reasonable_ evidence or intelligence to satisfy an arrest or a court order for a warrant is the concept of surreptitious sampling. It essentially involves the police using deception or surveillance to gather the _abandoned_ DNA of a _pre-suspect_, from perhaps an abandoned cigarette butt or an eating utensil. The _surreptitiously_ obtained sample is generally used for _intelligence purposes_, to include or exclude an individual from an investigation, without the need to compel or seek consent from the individual involved. In the case of a _match_, police use the match to ground the _reasonable suspicion_ element of an arrest or they apply for a court order (a secondary evidentiary sample is then lawfully obtained). 614

The legality of the surreptitious gathering of DNA samples has been examined and upheld by a number of state courts in the US in recent years, notably in _Commonwealth v Cabral_ 616 and _State of Washington v Athan_. 617 In _Cabral_, a private investigator hired by the family of a rape victim collected the spittle from a suspect after he expectorated in a public setting. The DNA profile garnered from the _abandoned_ spittle subsequently matched the DNA obtained from the crime scene. The surreptitious match was then used to ground a court order authorizing the collection of a second evidential sample. 618 The defendant challenged the constitutionality of this tactic under the Fourth Amendment. 619 The court, however, dismissed

---

614 In the US police have been operating on the assumption that the tactic of surreptitiously sampling an individual to gain his/her DNA sample to provide the _probable cause_ for a lawful arrest or court order for an additional sampling is justified and lawful. As Krimsky and Simoncelli observe, _Law enforcement’s primary argument in support of this position is that the DNA one leaves behind is _abandoned_, and furthermore, an individual who _abandons_ his or her DNA no longer has any privacy interest in it or the information it holds about that individual._ Krimsky S and Simoncelli T, _Genetic Justice: DNA Databanks, Criminal Investigations and Civil Liberties_ (Colombia University Press 2011), 109. For an excellent overview of the concept of surreptitious sampling, see chapter six of this publication.

615 The threshold of reasonable suspicion is lower than the threshold that surrounds the admissibility of evidence in a court of law. For example, see _Hussein v Chong Fook Kam_ [1970] AC 942. Thus evidence used to ground a reasonable suspicion may involve generally unreliable evidence such as hearsay evidence or an individual’s previous record. These questionable forms of evidence may be used by the police during the early stages of an investigation so as _to build a case_. This lower threshold standard is deemed necessary to facilitate the needs of an effective criminal investigation process: thus evidence gathered during this stage may be necessary to ground an arrest based upon _reasonable suspicion_. However, as will be noted in a subsequent section of the thesis, the limits surrounding police means of achieving reasonable suspicion has been subject to a number of recent judicial decisions. For a recent Irish case on this issue (which will be discussed at length in the Irish chapter) see _DPP (Walsh) v Cash_ [2010] IESC 1.

616 For example see _People v Ayler_, NYLJ (1 October 2004), court denied defendant’s motion to suppress DNA evidence procured from cigarettes offered to him in a police interview.


619 866 NE 2d 429 (Mass App Ct 2007).

620 The Fourth Amendment to the United States Constitution is part of the Bill of Rights, which guards against unreasonable searches and seizures, along with requiring any warrant to be judicially sanctioned and supported
the challenge, holding that the defendant had neither a subjective or reasonable expectation of privacy in the DNA from his abandoned saliva. The court held that by spitting in a public street, he no longer manifested such a subjective expectation ... [and when] he did not retrieve the fluid, he voluntarily abandoned the reasonable expectation of privacy he would otherwise had in his saliva and other bodily fluids. Consequently, the court concluded that the investigator ... did not infringe on any reasonable expectation of privacy when he recovered the spittle from the street.

In *State v Athan*, the surreptitious sampling involved more devious tactics by the police. The case involved the murder of a 13 year old girl which had been reopened after 20 years. To obtain Athan’s DNA, the police created a fictitious law firm and invited Athan (through a mail invitation) to join a class action law suit. The police gained his DNA from the seal of the envelope that was sent by return post to the fictitious law firm. DNA analysis matched Athan’s DNA to that of the DNA from the original crime scene and he was subsequently convicted of murder. Using similar reasons to the Court in *Cabral*, the Washington Supreme Court found no violation of the Fourth Amendment. The Court held that because the police did not use force in obtaining the sample, Athan’s licking of the envelope was analogous to a person spitting on the sidewalk or leaving a cigarette butt in an ashtray’ under which circumstances, ‘any privacy interest is lost’. The court compared Athan’s saliva on the envelope to ‘people constantly leaving genetic material, fingerprints, footprints, or other evidence of their identity in public places’; Physical characteristics which are exposed to the public’ such as ‘discarded genetic material ... fingerprints or footprints left in a public

---

621 Ibid. 434.
622 158 P3d 27 (Wash 2007).
623 Ibid. 31–32.
624 Given the heightened protection for privacy contained within the Washington State Constitution (Article 1(section 7), the decision was seen as a surprise, particularly when one considers the previous state jurisprudence on privacy and criminal investigation. For example the court had previously held that the following activities were unconstitutional without a warrant: use of a Global Positioning System (GPS) to track an individual’s automobile (*State of Washington v Jackson*, 150 Wn 2d at 262); use of an infrared heat device to view a person’s activities at home (*State of Washington v Young*, 123 Wn d at 181); intercepting an individual’s telephone calls (*State of Washington v Gunwall*, 720 P 2d 808); or searching the contents of an individual’s rubbish that has been left on the curb for collection (*State of Washington v Boland*, 155 Wn 2d 571).
625 158 P 3d 27 (Wash 2007), 33–34.
626 Ibid. 37.
place’, the court concluded, ‘are not subject to Fourth Amendment protection’; thus, the police’s Machiavellian means of gathering Athan’s saliva (which enabled them to obtain a DNA sample) was not deemed a search.\(^{627}\)

It is submitted that the decisions of both courts are problematic. For example, comparing DNA to other biometrics such as fingerprints is problematic, given the difference in genetic content. As a dissenting judge in Athan noted, ‘A person’s DNA … in his saliva, in a droplet of blood, or in a strand of hair, is not, as the majority suggests, equivalent to a person’s [finger] print or the cadence of his voice – physical characteristics that truly speak to our identity only. Rather, a person’s DNA goes beyond who we are to what we are.’\(^{628}\) While the observation may exaggerate the deterministic nature of DNA, it does capture the concept that DNA is not merely a biometric identifier but also consists of highly sensitive and detailed genetic information. Thus it is important not to allow DNA (even in the form of a DNA profile) to become dismissively subsumed under the generalised umbrella of biometric identifiers.

Additionally, the court in Athan held that the licking of the envelope was a voluntary action: thus the individual involved had voluntary ‘relinquished’ his DNA (and as a result his genetic information). Although it is true that the individual did voluntarily lick the envelope and post it to the fictitious law firm, it is debatable whether this consent should hold true given the ruse by the police. Dissenting, Fairhurst J. cited the US Supreme Court decision, Ferguson v City of Charleston,\(^{629}\) which held that the police action of analysing ‘consensually extracted bodily fluids of pregnant patients’ without the patients’ knowledge was unconstitutional. Although the patients had volunteered this information to the hospital, they had an expectation that the hospital would not divulge this information to a third party.\(^ {630}\) Fairhurst J. suggested that the doctor/patient privilege that was held to exist in Ferguson should have been extended to Athan, (in the form of client/attorney privilege), as both relationships are predicated on trust and confidentiality.

\(^{627}\) Ibid. 37. Other courts have likened the concept of abandoned DNA to trash; see for example, State of Nebraska v Wickline, 232 NW 2d 253 (1989), holding that an officer did not need a warrant to collect cigarette butts that had been left at the police station, as these items were considered as ‘abandoned’ and ‘sufficiently exposed’ to the officer and the public. These correlate with the Supreme Court decision in California v Greenwood, 486 US 35 (1988) where the court held that an individual does not have a reasonable expectation of privacy for garbage that is left on the curb as it is ‘knowingly exposed’ to the public. Although given the inherent differences between DNA and garbage that is voluntarily left at the side of the road, it is submitted that this analogy is not persuasive.

\(^{628}\) 158 P 3d 27 (Wash 2007), 44 (Alexander CJ).


\(^{630}\) 158 P 3d 27 (Wash 2007), 52 (Fairhurst J, dissenting)
It could be argued that given the popularity of crime scene investigation television shows that individuals in society should be now aware (perhaps to a distorted degree) that they are likely to leave DNA on items that they regularly use and dispose of throughout the day, such as a drinking cup or a cigarette butt. However, even if this argument were to hold true this would not include DNA that you ‘inadvertently’ dispose of throughout the day, such as a stray hair, a bead of sweat or a skin cell on a door handle. As Imwinkelried and Kaye note, ‘Leaving a trail of DNA … is not a conscious activity … we leave behind a trail of genetic evidence: cells that are naturally shed over time‘ whether we want to or not. Joh similarly notes ‘leaving DNA in public places cannot be avoided‘. Therefore while we can refrain from disposing of cigarette butts in public or expectorating on the footpath, we cannot refrain from disposing of stray hair or skin cells in public (unless one decided to enter the public domain in a protective bubble that gathered all discarded DNA!).

Given technological developments, the expanding police techniques for gathering DNA evidence pre-arrest is becoming an increasingly important issue. The concern, as Marx observes, is that new control techniques surface bits of reality that were previously hidden, or didn’t contain informational clues. People are in a sense turned inside out, and what was previously invisible or meaningless is made visible and meaningful. In essence, the

---

631 See Nakashima E, ‘DNA Tool to Solve Crimes Can Entangle Suspects’ Kin’ Wash Post (21 April 2008).
634 Additionally, it is submitted that even if one discards DNA in public (intentionally or inadvertently) the need for specialised equipment to analyse the discarded sample suggests that the individual discarding the DNA in these circumstances can reasonable expect that the discarded material will not have to be analysed by specialised equipment to reveal the required information. As Van Orden notes, ‘the involuntary shedding of cells hardly seems like a voluntary exposure of our DNA to the public in the way that we knowingly, and in a sense voluntarily, expose the soles of our shoes through footprints or the sounds of our voice through talking‘. Van Orden JF, ‘DNA Databases and Discarded Private Information: „Your Licence, Registration and Intimate Bodily Details, Please”‘ (2005) 6 NC JL & Tech 343, 351–52. In Kyllo v United States 533 US 27 (2001), held that an individual’s home is protected from warrantless searches by advanced technology that are not available to the general public (in this case an infrared heat lamp), the court held ‘we think that obtaining by sense enhancing technology any information regarding the interior of the home that could not otherwise have been obtained without „physical intrusion into a constitutionally protected area … constitutes a search – at least where (as here) the technology in question is not in general available to general public use’.
635 Marx GT, ‘The new surveillance’ in Newburn T (ed), Policing: Key Readings (Willan Publishing 2005), 762. Marx defines the „new surveillance‘ as follows: „New technologies for collecting personal information that transcend the physical, liberty-enhancing limitations of the old means are constantly appearing. They probe more deeply, widely, and softly than traditional methods, transcending barriers (whether walls, distance, darkness, skin, or time) that historically made personal information inaccessible. The boundaries that have defined and given integrity to social systems, groups, and the self are increasingly permeable. The power of governmental and private organizations to compel disclosure (whether based on law or circumstance) and to aggregate, analyse, and distribute personal information is growing rapidly.’ See Marx GT, „Ethics of the New Surveillance” (1998) 14 The Information Society 171, 180.
conclusions in Athan and Cabral give the government carte blanche to obtain _abandoned DNA_; as Joh observes, _Once DNA is considered abandoned or knowingly exposed, the Fourth Amendment does not apply at all._636 This has created a dangerous precedent for the DNA debate. To date states have generally developed policies (containing safeguards and protocols) surrounding the collection, retention and use of DNA within the criminal process. The growing acceptance of surreptitious sampling has resulted in the DNA debate embarking down a disconcerting trajectory. A concern is that authorities may begin to move away from these developed, formal policies towards the unregulated approach of gathering _abandoned_ DNA, creating issues surrounding perhaps the use to which these _abandoned_ samples may be put and the potential creation of _shadow DNA databases_ operating outside the legislative framework.637 Unfortunately word restraints prevent a detailed examination of this issue, however, given the potential importance of this area consideration of the Irish position and recent case law examining pre-trial investigation in Ireland will be discussed in chapter seven.638

From a justification perspective the desire of the police to link _persons of interest_ to a DNA sample is understandable. However, it is suggested that given the sensitive information contained within a DNA sample that the concept of surreptitious DNA sampling can only be justified if it is strictly located within a publicly accessible regulatory framework. The goal of the framework, which should be subject to independent oversight, is to ensure that the information gathering methods utilised by the police are socially acceptable and importantly (from the perspective of DNA sampling) that the biological information gathered is securely maintained or destroyed once it has served its purpose. While it may be unrealistic to expect complete transparency of the police _dark arts_ in intelligence gathering, given the increasing range of technological devices at their disposal it may be in society’s interest to begin _shining a light_ on these previously hidden areas.

The concern is eloquently expressed by Marx:

637 As Krimsky and Simoncelli observe, _If police can take DNA surreptitiously, why would they ever bother to get a warrant to obtain someone’s DNA? And what would stop law enforcement from building a DNA data bank of suspicion less suspects for purposes of surveillance, completely outside the boundaries of the laws that currently govern our data banks?” See Krimsky S and Simoncelli T, Genetic Justice: DNA Databanks, Criminal Investigations and Civil Liberties (Colombia University Press 2011), 116.
638 In Australia there have been growing calls to assess the _legal loophole_ that allows surreptitious DNA sampling during a criminal investigation. See Joh EE, “Reclaiming _Abandoned_ DNA: The Fourth Amendment and Genetic Privacy” (2006) 100 Northwestern University Law Review 857, 881.
In the Merchant of Venice, Shakespeare counsels us that ‘to do a great right, do a little wrong’. But when intrusive and secret tactics are at hand, more is at stake than the immediate goal. Apart from the principle, there is no guarantee that the ratio would not be quickly reversed – to great wrong yielding little right. At times, the extension of secret police practices may be necessary. They may be exercised with restraint and sensitivity by leaders and agents of high moral character. But unfortunately, once established, there is no guarantee that, in less demanding times, the practices will be rescinded or that future leaders and agents will be scrupulous, absent the [necessary] legislative controls.639

4.4. Policy developments: ‘Expansion and dilution’

The following section will briefly chart the trajectory of DNA collection policies in a number of common law jurisdictions. The overview will illustrate a number of commonalities among international jurisdictions in the area of DNA sampling, namely around the areas of expansion and dilution of the relevant safeguards designed to limit the unnecessary sampling of individuals within the process.

In England, Wales and Northern Ireland a DNA sample may be taken from an individual arrested for a recordable offence.640 The concept of function creep in the collection of comparator DNA samples has been evident within the UK. For example, the Criminal Justice and Public Order Act 1994 (CJPOA) abolished the second prong of the two step test that had been previously present in earlier bodily sampling provisions641 (i.e., that the taking of a

---


641 The foundations for the use of DNA within the UK criminal process can be traced back to the enactment of the Police and Criminal Evidence Act 1984 (PACE) in 1984. The Act incorporated a number of procedural issues which regulated police activities while implementing codes of best practice. PACE placed the taking of bodily samples, including fingerprints and intimate and non-intimate samples, on a legislative footing for the first time. It regulated who was authorised to take samples and when consent was necessary. The first section dealing with fingerprints provided for the collection of fingerprints from persons convicted of a recordable offence whose fingerprints had not been taken during the course of the original investigation. Police had to obtain consent for the taking of fingerprints from suspects (as opposed to offenders). A police officer of at least the rank of superintendent could authorise the taking of fingerprints if he had reasonable grounds for suspecting the involvement of the person whose fingerprints [were] to be taken in a [recordable] offence and if he believed that his fingerprints [would] tend to confirm or disprove his involvement. The taking of bodily samples followed similar criteria, except for two notable exceptions. The taking of an intimate sample was also subject to a two step test, but there had to be reasonable suspicion that a person was involved in a serious arrestable
Scotland has adopted a more restricted approach: a bodily sample can be collected from an individual detained or arrested for an imprisonable offence (i.e., an offence to which a custodial sentence may attach); similar to the UK though has been the dilution of the second arm of the test. Moreover the lack of judicial or independent oversight has been a disconcerting feature of the UK sampling framework from the beginning.

In the US the taking of a DNA sample would traditionally come within the boundaries of a search', thus bringing it under the auspices of the Fourth Amendment. To justify a search' investigating authorities would predominately have to secure a judicial warrant. However, from the beginning, DNA collection policy in the US has sought to dilute the need for individualised suspicion and relevance to justify the collection of DNA sampling. For example the US has introduced a number of legislative acts that have enabled the collection of DNA from individuals based upon their offence categorisation.

In the US, federal law has been significantly expanded through the implementation of three significant legislative Acts. First, the federal collection programme was initiated through the passage of the DNA Analysis Backlog Elimination Act of 2000. This law required that DNA samples be collected from individuals in custody and those on probation, parole or

---


644 The CJPOA implicated all those arrested for or convicted of a recordable offence. In 1997 the UK government extended the scope of sampling: the Criminal Evidence (Amendment) Act 1997, retrospectively extended the power of the police to collect non-intimate samples from a limited number of convicted offenders in prison prior to the CJPOA Act.

supervised release after being convicted of a "qualifying offence". Although the federal collection program was limited to violent offences, it allowed the collection of DNA from those who had already served their sentences but were still in the system by way of being on probation or parole.

In 2004, the Justice for All Act was enacted. The main purpose of the Act, in relation to DNA, was to provide funding to aid with the substantial backlog of DNA samples that had been collected from crime scenes and qualifying offenders. However, it also significantly expanded the "qualifying federal offences" for the collection (and retention) of DNA to be entered on the National DNA Index System (NDIS). It expanded the threshold to all those convicted of a "felony offence". The Act allowed states to sample all individuals charged with a federal offence (irrespective of the relevance of the sample to the case in question), as opposed to just those convicted. In January 2006 the Violence Against Women and Department of Justice Reauthorisation Act of 2005 was enacted. Contained within this Act was the DNA Fingerprint Act 2005. Although a relatively short piece of legislation, it again expanded the federal collection policy for DNA samples. The Act authorised the US Attorney General to direct federal agencies to collect DNA from individuals who are arrested or from non-US persons who are detained under the authority of the United States.

In December 2008, the US Department of Justice (DOJ) issued an additional rule to the DNA Fingerprint Act of 2005. The DOJ provided a broad interpretation of the content in the 2005 Act. Under the rule, any federal agency that is authorised to obtain a fingerprint is now provided with similar authority to collect DNA samples. The rule states: "agencies of the United States that arrest or detain individuals or supervise individuals facing charges will be required to collect DNA samples, if they collect fingerprints from individuals, subject to any

---

646 42 USC & 14135 (a).
647 Justice for All Act of 2004 Pub L No 108-405 (2004). Qualifying federal offenses were limited to violent crimes and included murder, sexual abuse,peonage or slavery, kidnapping, and offences related to robbery or burglary.
648 Amendments included: creation of a new indicted persons index; expansion of the offenses for which federal and military offender samples are collected; provision for post convictional DNA testing; enhancement of the criminal penalties for unauthorised use of NDIS; authorisation of one-time keyboard searches by all NDIS participants of samples not normally included in NDIS (except for voluntarily submitted elimination samples); requirement for state and local forensic laboratories to be accredited by a nationally recognised program within two years of enactment (October 30, 2006); and requirement for the FBI to report to Congress any plans to change the "core genetic markers" 180 days prior to that change taking effect.
limitations or exceptions the Attorney General may approve.”651 The expanded regulation would seem to allow the taking of a DNA sample by force from those arrested for misdemeanour offences.652 This trend of expansion has not been restricted to a national level: as of May 2010, 23 US states have now passed laws authorising DNA sampling of arrestees – the majority of states restrict sampling to those arrested for felonies and offences subject to a

651 Ibid. 74935.
652 The DOJ justified this broad interpretation by providing a threefold justification. First, the DOJ argued that allowing DNA to be obtained at an early stage of a criminal investigation would act as a deterrent for those engaging in criminal behaviour. They argued that this deterrent effect is diminished if sampling is postponed until the point of conviction. Second, the sampling of arrestees will result in a larger database which will increase the chances of obtaining ‘cold hits’ and link individuals to crimes that may not otherwise get solved. Department of Justice, “DNA sample collection under the DNA Fingerprinting Act of 2005 and the Adam Walsh Child Protection and Safety Act of 2006 (Proposed Rule)” Federal Register 73, no. 76 (April 18, 2008): 21083–21087. Third, a DNA sample may provide a means of confirming an individual’s identity if other means of identification are unavailable (such as fingerprinting) or inconclusive. Department of Justice, “DNA sample collection under the DNA Fingerprinting Act of 2005 and the Adam Walsh Child Protection and Safety Act of 2006 (Proposed Rule)” Federal Register 73, no. 76 (April 18, 2008): 21083–21087. As Krimsky and Simoncelli note, “This so called triple benefit, namely, criminal deterrence, crime solving and true identity, provided the DOJ its justification for broadening the reach of federal authorities into the privacy of individuals who were not convicted of a felony crime”. Krimsky S and Simoncelli T, Genetic Justice: DNA Databanks, Criminal Investigations and Civil Liberties (Columbia Press 2011), 36. The DOJ estimates that as a result of this rule change approximately 1.2 million additional DNA profiles will be collected and added to the NDIS each year. This represents a 15 fold increase in the number of samples that have been collected by federal agencies. See Luttmann J, FBI Laboratory, DNA Unit 1, Federal Convicted Offender Program –Implementation of Database Expansion” (presentation for Annual CODIS Conference, Federal Bureau of Investigation, October 24, 2006) cited in Krimsky S and Simoncelli T, Genetic Justice: DNA Databanks, Criminal Investigations and Civil Liberties (Columbia Press 2011), 37. The 2008 federal rule on DNA collection policy equates the expanded nature of DNA in the criminal process to that of fingerprinting. It states: “the uses of DNA for law enforcement identification purposes are similar in general character to the uses of fingerprints, and those uses will be greatly enhanced as a practical matter if DNA is collected regularly in addition to fingerprints”. Department of Justice, “DNA sample collection under the DNA Fingerprinting Act of 2005 and the Adam Walsh Child Protection and Safety Act of 2006 (Proposed Rule)” Federal Register 73, no. 76 (April 18, 2008): 21083–21087. The government’s policy of linking DNA to fingerprinting is important as it allows the government to side step the need to establish time limits of removal criteria (in the absence of a court order) as fingerprints are currently viewed as purely a means of identification. Additionally, the rule allows agencies to use such means as are reasonably necessary to detain, restrain and collect a DNA sample from an individual … who refuses to cooperate in the collection of the sample”. Department of Justice, “DNA sample collection under the DNA Fingerprinting Act of 2005 and the Adam Walsh Child Protection and Safety Act of 2006 (Proposed Rule)” Federal Register 73, no. 76 (April 18, 2008): 21083–21087. The American Civil Liberties Union (ACLU) have criticised this approach, noting: “The fingerprint analogy is misleading, because perhaps the most significant privacy concerns with DNA data banking are associated not with the DNA profiles that are retained electronically, but instead with the original biological samples that are stored indefinitely by forensic laboratories. Unlike fingerprints – two dimensional representations of the physical attributes of our fingertips that can be used only for identification – DNA samples can provide insights into disease predisposition, physical attributes and ancestry.’ American Civil Liberties Union –Comments on RIN 1105-AB24 Proposed Rule, DNA Sample Collection Under the DNA Fingerprint Act of 2005 and Adam Child Protection and Safety Act 2006” (May 19 2008). Available at: http://www.aclu.org/racial-justice_prisoners-rights_drug-law-reform_immigrantsrights/aclu-comments-justice-departments-r.
minimum period of imprisonment. Recent US developments suggest that the government is attempting to "encourage" the other 27 states to follow suit.

In 2009 the New Zealand government introduced a Bill to dramatically expand the New Zealand DNA collection policy. The Criminal Investigation (Bodily Samples) Amendment Act 2009, which increases the scope of New Zealand DNA policy was passed and came into force in November 2009. The legislation proposed that it should be procedure to "require DNA testing for every person arrested for an imprisonable offence" (or a list of designated offences contained in the schedule). The government stated that "The policy is intended to recognise DNA as the "modern day fingerprint" and assist Police to solve more crime by having more identified DNA profiles to match against the increasing number of DNA samples obtained from unsolved crime scenes." The 2009 Bill proposed to amend the Criminal Investigations (Bodily Samples) Act 1995 to allow police (without prior judicial

---

654 See Katie Sepich Enhanced DNA Collection Act of 2010. Explanation and details of Act will be outlined in subsequent section.
657 Such as assault and receiving stolen goods. See Pt 2b, inserting s.24J into the Criminal Investigations (Bodily Samples) Act 1995.
659 The Criminal Investigations (Blood Samples) Act 1995 was formulated after considering opinions from members of the police, legal and scientific communities. The Act established two regimes: suspect regime – police could obtain an evidential DNA sample, with consent from a person suspected of an indictable offence, or via a court order if the police have good reason to suspect that a person has committed a "relevant offence" (as defined in the Act). See Part 2 of the Act. If an individual refused to provide a sample once a court order had been obtained, the police could draw and present an adverse inference for refusal as evidence in trial. The list of offences for which police might apply for a compulsion order contained a large number of offences; however, it mainly focused on the more serious offences such as murder, manslaughter, serious sexual and violent offences, abduction, kidnapping and robbery. This practice is similar to other forms of evidence such as fingerprints as it is used to link or exclude an individual to specific evidence (DNA sample) from a crime scene – the sample would not be placed on a database. The second element of the act was more controversial, it involved establishing a DNA database regime – a DNA sample can be taken from volunteers or persons convicted of a relevant offence. See Part 3 of the Act. A DNA profile is obtained from the DNA sample which is subsequently placed and retained on the DNA database. (Interestingly, New Zealand legislated for the provision that the DNA sample would be destroyed once an appropriate DNA profile has been obtained). The Act also prohibits samples from being subject to biomedical research. DNA profiles obtained from crime scenes can then be compared with other profiles on the database. This matching is used to identify and eliminate potential suspects for a crime. A hit on the database is not permitted as evidence in court and can only be used by police as an intelligence resource. The Act was amended in 2003, largely to accommodate the progress that had been made in forensic DNA technology in the intervening eight years. The revised Act is titled the Criminal Investigations (Bodily Samples) Act 1995 and allows DNA profiles gained from buccal swabs to be included on the database, where previously only profiles from blood samples were permitted. The original Act put strict rules in place regarding the obtaining of blood samples, forcing police to apply to the High Court to compel a suspect to give a sample, provided specific criteria were met. Specific criteria are reasonable cause for suspicion and an indictable offence. See McCartney C, Forensic Identification and Criminal Justice: Forensic Science, Justice and Risk
approval) to collect DNA from a person in custody whom they _intend to charge_ with a _relevant_ offence (which is outlined in the schedule for the Act). Currently (under the 1995 Act) a person can only be compelled to provide a bodily sample if they are suspected of a relevant offence and authorisation for the sampling is granted by a court order or they have been convicted of a relevant offence. The 2009 Act has situated the point of DNA sampling in the hands of the executive, removing the buffer of judicial oversight that had been in existence under the previous regime. Moreover and similarly to the UK and US, it also removed the requirement that the taking of a DNA sample needed to be relevant to the investigation for which the sample is collected, whilst it also considerably increased the range of offences for which a sample may be taken.

The expansion of policies in the UK, US and New Zealand reflect a widening pattern of DNA collection policies in a number of common law countries. Two clear patterns are emerging. Firstly, the second limb of the two step test, namely the relevance of the sample, is being increasingly deemed surplus to requirements. Secondly, the power to authorise and obtain a DNA sample is now predominately situated with the police (as opposed to a judicial warrant or independent oversight). The concern is that police arrest practices have often been shown to be discriminatory or based on unreliable information and/or unjustifiable concerns. Indeed, it was reported that in England and Wales _arrest for DNA sampling_ was

(Willan Publishing 2006), 175. The change to mouth swabs is an important development as it no longer requires the presence of medical personal allowing police officers to obtain the bodily samples. The 2003 Act also expanded the list of relevant offences to include burglary and entering with intent. It has added the controversial provision of retrospective sampling, which allowed for compulsory sampling of prisoners who were convicted of relevant offences before the enactment of the 1995 legislation. Under the 1995 Act a person can only be compelled to provide a bodily sample if they are suspected, or convicted, of a relevant offence. The relevant offences are defined as: any offence that carries a maximum penalty of seven years or more imprisonment; and other lesser, offences (that either have some propensity link to more serious offending or are those for which offender DNA is often left at the crime scene) listed in the schedule contained within the Act. See http://www.esr.cri.nz/competencies/forensicscience/dna/Pages/TheCJt(BS)Act.aspx.

For further reading on New Zealand DNA policy see Veth JS and Midgley G, "Finding the balance: forensic DNA profiling in New Zealand" in Hindmarsh R and Prainsack B (eds), Genetic Suspects: Global Governance of Forensic DNA Profiling and Databasing (Cambridge University Press 2010), chapter 14.


Human Genetics Commission (UK), Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance and use of the National DNA Database (November 2009), para 1.19.
becoming a routine practice, although this was strongly denied by the Association of Chief Police Officers.  

However, in contrast, as a result of the sensitive nature of the DNA sampling process other common law countries have adopted a more limited approach, for example by requiring a judicial warrant and ensuring both arms of the two step test are present before DNA collection is permitted. Thus in Australia, the Crimes Act 1914 (as amended) permits the collection of bodily samples from an individual suspected of or charged with committing an indictable offence (when it is deemed relevant to the investigation), individuals convicted of designated serious offences and volunteers. An intimate and non-intimate sample can be collected from a suspect with his or her consent. If consent is not forthcoming then a non-intimate sample can be collected from a suspect in custody, by order of a senior constable. However, an intimate sample can only be collected without the suspect’s consent by order of a magistrate. As noted earlier the distinction between a ‘non-intimate’ and ‘intimate’ sample is potentially arbitrary as they both contain the same DNA. Thus it is suggested that given the sensitivity of the information involved if independent oversight is deemed necessary then this should be extended to cover both categories.

Canada has adopted an even narrower approach. DNA collection may only occur from those convicted of an indictable offence (in general offences are divided into primary and secondary offences) or with a court order in relation to an individual suspected of an

---


666 In Australia there is legislation operating on a national level as well as on a state by state basis. The power to take samples within various Australian states varies between state territories. For example, in New South Wales the collection of samples is governed by the Crimes (Forensic Procedures) Act of 2000 No.59, whereas in South Australia collection is governed by the Criminal Law (Forensic Procedures) Act 2007. In relation to a volunteer, the Act outlines that if a volunteer withdraws consent then any procedure must stop immediately and any related information should be destroyed. Although a magistrate can in exceptional circumstances order that forensic material be retained from a volunteer even once a volunteer has withdrawn his or her consent. Samples taken from suspects must be destroyed after a period of 12 months, unless a magistrate extends this period, and proceedings have not been instituted against the suspect or the suspect has been acquitted of the relevant offence.


668 For further reading on Australian DNA policy, see Hindmarsh R, —Bio-surveillance and bio-civic concerns, from ‘truth’ to ‘trust’: the Australian forensic terrain” in Hindmarsh R and Prainsack B (eds), Genetic Suspects: Global Governance of Forensic DNA Profiling and Databasing (Cambridge University Press 2010), chapter 13.

669 A list of primary and secondary offences are identified in section 487.04 of the Criminal Code. Collection of DNA from convicts operates under the Code. The Code permits collection from those convicted of three categories of offences (where a sample was not taken during the course of an investigation). The categories are (i) persons who have been declared ‘dangerous offenders’, (ii) persons convicted of ‘more than one murder
indictable offence, where the court will examine whether it is in the interest of justice to allow the DNA collection.\textsuperscript{670} As to whether it involves an unreasonable search, under Canadian constitutional law a search must have been first approved by prior authorisation (that is authorised by a judicial authority), and there must be reasonable and probable grounds, established under oath, to believe an offence has been committed and that evidence of this is to be found through the search or seizure.

Despite public pressure to adopt a broader collection regime, when debating the DNA Identification Act 1998, the Canadian government opted to establish a regime that situated individual rights at the centre of their DNA collection and retention framework.\textsuperscript{671} The DNA Identification Act contains strict policy guidelines which aim to minimise the interference with individual rights during the DNA sampling process, balancing a suspect's right to privacy with the need for police officers to collect evidence.\textsuperscript{672}

However, recent amendments have widened the number of indictable offences for which DNA samples can be obtained.\textsuperscript{673} In addition, the Canadian government is currently under pressure to further expand the scope of their DNA collection (and subsequent policy). In 2009, the Standing Committee on Public Safety and National Security recommended the mandatory taking of a DNA sample from all those convicted of a designated offence, although it did not recommend expansion to include sampling (and retention) of those arrested.\textsuperscript{674} However, recent developments in Canada suggest that perhaps their policy against expansion to include arrestees may soon change. In 2010, the Canadian government

\textsuperscript{670} S.487 05.
\textsuperscript{675} In accordance with the DNA Identification Act, the RCMP (Royal Canadian Mounted Police) has imposed strict procedures governing the handling of DNA profiles and biological samples to ensure that privacy interests are protected. Information collected by the National DNA Data Bank will be used strictly for law enforcement purposes. All other uses including medical research are strictly prohibited and punishable by law. A National DNA Data Bank Advisory Committee has also been established to advise the Commissioner of the RCMP on matters relating to the establishment and operation of the National DNA Data Bank. See the privacy and security section of the Canadian DNA website. Available at: \url{http://www.nddb-bndg.org/pri_secu_e.htm}. However, DNA sampling is not videotaped.
\textsuperscript{676} Standing Committee on Public Safety and National Security (Canada), recommendation 3.
indicated plans that it may expand their DNA collection regime to incorporate any individual charged with an indictable offence (regardless of offence relevance)\textsuperscript{675}

Thus in the United Kingdom, the United States and New Zealand the police may obtain DNA samples without judicial approval from those arrested and convicted of designated threshold offences, regardless of whether the sample is relevant for the offence. The primary rationale for this gradual expansion of domestic DNA collection regimes is the growing recognition of DNA profiling as a useful criminal intelligence tool, particularly in light of the development of DNA retention repositories.\textsuperscript{676}

The majority of countries restrict DNA sampling to those suspected of committing offences of a particular gravity.\textsuperscript{677} This approach is evident in the United Kingdom (including Scotland), the United States, Canada and New Zealand. The rationale for this distinction is that serious offences often necessitate increased police powers while minor offences cannot justify the relevant interference with an individual's bodily integrity.\textsuperscript{678}

\textsuperscript{675} Canadian Civil Liberties Association (CCLA), \textit{CCLA Concerned about Potential Expansion of DNA Databank} (14 May 2010), [http://ccla.org/2010/05/14/ccla-concerned-about-potential-expansion-of-dna-databank/](http://ccla.org/2010/05/14/ccla-concerned-about-potential-expansion-of-dna-databank/). As a result of a myriad of factors, the Canadian government came under pressure to expand the NDDB; factors included media coverage of the ‘success’ of the arrestee DNA databases in the UK and US; a number of signal crimes in Canada and also a report in December 2005 which illustrated the ‘benefit’ of the current NDDB. For example, the report indicated that even though the NDDB was limited to post convictional testing, it had still resulted in 4,371 matches from crime scenes to offenders and 650 matches of crime scene to crime scene. As a result of this pressure and the ‘perceived’ success of the existing DNA database, a Federal Bill C-13 was passed in 2005. It expanded Canada’s National DNA Database, adding 28 criminal code offences to the list of those that permit DNA sampling. The Bill contained a number of controversial provisions: for example, it proposed to allow for the automatic DNA sampling of mentally ill persons found not guilty of offences because of their mental disorder. See Schmitz C, “CB A criticises DNA Bank expansion” (2005) \textit{The Lawyers Weekly} (18 February 2005). There was further expansion in 2008, following the enactment of Bills C-13 and C-18 on January 1, 2008. Canadian courts were permitted to include more offences for which DNA profiles can be added to the National DNA Data Bank’s Convicted Offenders Index (COI). The recent amendments increased the number of primary offences to 62. Sixteen of these offences are deemed to be compulsory in that the convicted individual is automatically required to provide a DNA sample. These offences include the more serious crimes such as murder and sexual assault. In relation to the remaining primary offences there lies a presumptive requirement to provide a sample; however, the defendant can rebut the sampling by successfully arguing before a court that his or her sampling is disproportionate. The 2008 amendments also increased the number of secondary offences contained in the criminal code. Secondary offences, offences which carry more than five years imprisonment, were expanded to approximately 200. Secondary offences include offences such as drug trafficking, assault and harassment. A prosecutor must make a successful argument before a court to obtain a DNA sample from an individual convicted of a secondary offence; he or she must prove that it is in the public interest.

\textsuperscript{676} Examples of cases highlighting the use of DNA in criminal investigation are \textit{US v Kincade} 379 F Ed 813 (9th Cir 2004); \textit{Anderson v Virginia} 650 SE 2d 702 (Vir 2006) 706; \textit{US v Pool} 645 F Supp 2d 903 (2009) 912; \textit{Haskell and Ento v Brown} 677 F Supp 2d 1187 (2009).

\textsuperscript{677} \textit{S & Marper v U.K.} 48 EHRR 50, para 106–108.

\textsuperscript{678} The justification criteria used to justify the sampling of those arrested for a serious offence (i.e. the investigation of a serious offence) becomes less persuasive as the range of offences expand and the criteria for sampling move away from their original rationale. Thus the sampling threshold in the UK, the US and recently New Zealand has been lowered and expanded beyond those arrested for a serious offence. Given the inherent
approach is to achieve the desired level of proportionality between investigating serious crime and individual bodily integrity. However, despite the illusion of proportionality, the logic behind this rationale is problematic. It is not clear that an individual who is suspected of a serious crime should have his individual rights infringed in accordance with the offence. An individual’s human rights should remain constant regardless of the offence for which he or she is charged; as Campbell notes ‘either a crime control tactic is permissible or not in a rights’ sense, and the apparent severity of the crime should not be of consequence’. 

Ironically, one may suggest that if we were to equate rights with offence severity then those charged with serious offences should have more rigorous safeguards in place to ensure protection and application of these rights, as individuals charged with serious offences have potentially more to lose (i.e. liberty) than those charged with a minor offence.

Perhaps a more persuasive criticism of this trend has been the erosion of the original justifications that underpinned the sampling process, namely ‘evidential significance’. The dilution of the ‘relevance’ principle undermines the ‘evidential significance’ justification that should underpin the decision to take a sample. With the exception of Canada, international jurisprudence now correlates the collection of a DNA sample with arrest or conviction, regardless of its relevance to the offence. This trajectory has shifted the justifications from ‘evidential’ to ‘intelligence gathering’, which as observed at the beginning of the chapter provides a speculative and tenuous basis upon which to predicate a sampling framework.

Finally it is submitted that given the sensitivity involved in this process it is vital that DNA sampling should be strictly limited to cases in which reasonable suspicion has been evaluated in a court of law. While the procedure of DNA sampling may be justifiable because of the benefits for criminal investigation, it is questionable whether systematically allowing sampling on arrest (or for that matter conviction) is justifiable. It is submitted that the Canadian approach is preferable, given that it expressly outlines reasonable suspicion and judicial approval is required. Indeed, in *R v Briggs*, the Ontario Court of Appeal found that the ‘best interests of the administration of justice’ standard which needs to be satisfied before DNA sampling and comparison could occur was constitutional as it requires the court to consider and balance the relevant privacy interests against the societal aim of effective human rights concerns involved in the DNA sampling process, it is submitted that the justifications offered for the taking of a serious offence become even more tenuous when applied to a lower range of offences.

---

criminal investigation and crime control.  

Judicial approval of a warrant safeguards the DNA sampling process from potential abuse, as it provides an independent examination of the police reasonable suspicions for seeking the DNA sampling. Allowing the courts to be the arbiters of DNA collection provides a welcome buffer between the investigative authority and the evaluator of reasonable suspicion which should ensure the necessary objectivity and relevance when assessing a particular case.

4.5. Encompassing collection within the reflective regulatory framework

In essence the central theme to collection is the desire of the police to obtain a DNA sample from an individual for the purposes of an investigation. However, as a result of the sensitive information contained within a DNA sample, it is submitted that all collection mechanisms should be contained within a strict legislative framework.

The difficulty as outlined in chapter three for DNA technology is its potential capacity for criminal investigation, in particular its capacity to produce spectacular success stories. Thus the desire of investigating authorities and policy makers to continually expand the means of obtaining a DNA sample is understandable. However, it is imperative that any regime that is established for the collection of DNA evidence must acknowledge the sensitive issues created by the collection of a sample. Thus it is submitted that the collection of samples (incorporating the three methods: compulsion, consent and the surreptitious) can all be satisfactorily situated within the ‘reflective’ regulatory framework introduced in chapter three.

The goal of the ‘reflective’ framework is to enable the competing voices within the DNA debate to create an organic and fluid strategy. Such an approach would enable DNA technology to be utilised while being tempered by continuous and progressive debate about relevant issues and developments that surround the technology. For example, such an approach would enable the DNA mass screen or a surreptitious sampling if the authorities can illustrate or proffer a logical rationale for undertaking the particular initiative. Thus the approach encourages authorities to utilise DNA technology in a logical, reasoned manner whilst attempting to dissuade the ‘fishing expedition’ logic that tends to become prevalent in the absence of a guidance mechanism. An advantage of such an approach is that it refocuses

---

Returning to the original justifications cited at the beginning of the chapter, it is suggested that within this framework a DNA sample should be allowed to be taken once it satisfies the two step test (i.e., the individual is reasonably suspected of the offence and the sample is directly relevant to the investigation) and is subject to judicial or independent oversight, so as to provide a buffer against police enthusiasm for gathering samples from individuals. This approach correlates with the European Code of Police Ethics’ ethos of due process and the respect for the individuals involved in the process emphasises that bodily sampling should only occur on the basis of reasonable suspicion and where it is vital to garner admissible evidence of guilt. In addition it is imperative that clear, transparent and flexible protocols are established and regularly reviewed to protect those engaged in the sampling process. Further consideration of the appropriate safeguards will be provided in chapter six; however, briefly they should incorporate, inter alia, strict guidelines on the levels of force allowed for the taking of a sample, regular training and review of those authorised to take samples, a choice of sample to the individual prior to sampling (depending on whether such a choice is feasible), specific restrictions on the purpose and use of a sample, restrictions on who has access to the sample and strict time limits established on what should happen to a sample once it has served its purpose. In the event that these safeguards or ‘checks and balances’ are established it can be argued that the taking of a DNA sample can be a justifiable interference when taken in relation to the investigation of a specific offence. Thereby any evidence adduced, such as a match, from such sampling (subject to the relevant constitutional considerations) should be admissible in criminal proceedings.

682 It would aspire to maintain this course by conducting regular reviews of any collection method that has been authorised.
684 For example, as DNA is contained within all of the cells in a human body (with the exception of red blood cells), it should not make a difference what form of a sample is taken from an individual whether a hair sample, buccal swab or blood sample. Financial costs may dictate that a forensic laboratory takes one form of sample over another. Moreover an individual may as a result of a particular offence be required to provide a particular form of sample.
685 However, despite the appeal of the ‘relevance test’ it must be noted that the collection of evidence must operate within the acceptable boundaries of modern society. The growing importance of rights (illustrated by international documents such as the European Convention on Human Rights) augmented by the presence of a written Constitution in Ireland (which guarantees a range of individual rights) creates an environment in which there are limits to the intrusions that can be made upon an individual. Thus for example, Article 3 of the ECHR states that ‘Article 3 enshrines one of the most fundamental values of democratic society’. It states that ‘No one
4.6. Conclusion

Central to the utility of DNA profiling within the criminal process is the ability of the police (or another relevant body) to collect a comparator sample. There are a number of options available for police to collect such samples. Police can ask an individual to volunteer a sample; police can inform an individual that they are required by law to provide a sample (such a request can result in an individual voluntarily providing the sample, or in the absence of consent police can physically compel an individual to provide a sample or may be allowed to draw an adverse inference from an individual's refusal); or alternatively police can obtain a sample surreptitiously.

In the area of compulsion, of the countries examined it is submitted that the current sampling approach in Canada is persuasive, as it involves a two step test and independent authorisation. The police in Canada can seek a court order in relation to an individual suspected of an indictable offence, during which a court examines whether it is in the interest of justice to allow the DNA collection (in which the concept of relevance is one of the criteria). It is submitted that this 'relevance' test or 'in the interest of justice' test (when located within a framework that endeavours to minimise the intrusions for those targeted by the process) is a more amenable approach than the increasingly broad collection regimes (based on a risk or 'fishing expedition' logic) that are becoming the norm in other international jurisdictions.

In relation to volunteers it is submitted that pragmatic concerns make it necessary for police to request a DNA sample from a volunteer. It is submitted that such a request should be allowed for the purposes of a specific investigations. However, strict oversight of this provision would be necessary to guard against potential misuse. In addition, necessary protections would need to be strictly established: for example, a volunteer's refusal to provide a sample should not be allowed to justify the arrest of an individual as a suspect (in the

shall be subjected to torture or to inhuman or degrading treatment or punishment.' Thus despite the 'relevance' of the evidence there are seemingly modern societal values that rank higher than the cold calculated search for truth or relevant evidence. In a society that allowed unbridled searches for the truth/relevant evidence, we would be confronted with uncomfortable dilemmas. For example (albeit a dramatic example) within a society that 'promoted' truth/relevance as its ultimate goal, arbitrary police tactics (such as torture) could be theoretically implemented in the search for elucidating the 'truth' or relevant evidence from a suspect. Thus as Ashworth observes, 'If we accept this right – we should do on principle ... then we must accept that there can be values higher than truth.' See Ashworth A, Serious Crime, Human Rights and Criminal Procedure (Sweet and Maxwell 2002). The prohibition of torture is well represented in international instruments, see for example, the 1966 UN International Covenant on Civil and Political Rights, Article 7 'No one shall be subjected to torture or to cruel, inhumane or degrading treatment or punishment'; the 1984 UN Convention against Torture and other Cruel, Inhuman degrading Treatment or Punishment (CAT) and the 1987 European Convention for the Prevention of Torture and Inhuman and Degrading Treatment or Punishment.
absence of further relevant evidence). In the case of a DNA mass screen, it is suggested that the use of this procedure should be subject to rigid guidelines within a legislative framework. It should incorporate the following criteria: narrowly defined pool of targets (area/age/physical description); a policy for those unwilling to participate in the sampling (it is submitted that an individual refusing to submit a sample during a mass screen could be compelled to do so pursuant to a court order); it should be a practice of last resort; and authorisation should be predicated on judicial approval (or an independent oversight committee).

Finally, it is submitted that the practice of surreptitious sampling should be heavily restricted within the legislative framework. The practice of enabling the coercive arm of the state to secretly collect and/or to trick individuals in to giving their DNA samples is an ethically questionable practice. While those in favour will cite the potential benefits of this technique and cite the successful cases in the US, it is argued that this ‘end justifying the means logic’ is not wholly persuasive. Given the sensitive material contained within an individual’s DNA sample, it is vital that we clearly outline the conditions under which the state can collect and gain access to an individual’s genome: therefore, if the police require the DNA of an individual for a criminal investigation, it is suggested that the justification for its collection (if the threshold for reasonable suspicion has not been met) should be adjudicated by a judicial authority (or an established independent oversight committee).

It is submitted that the collection of DNA should be situated within an all-encompassing ‘reflective’ regulatory framework. Such an approach would be predicated upon outlining clear and robust justifications (such as reasonable suspicion and relevance). Once clear justifications are established, it would endeavour to ensure that adequate codes of best practice for sampling are established to protect those targeted by the process. Given the developing nature of DNA technology and practices, an organic, discursive and progressive approach to oversight and review will attempt to continually assess the legitimacy of a particular sampling technique whilst ensuring the necessary safeguards are up to date.
5. Retention

5.1. Introduction

The development of DNA databases created pressure to remove the limitations on the application of DNA to the investigation of specific crimes. In the absence of a DNA database, the use of DNA is similar to other forms of biometric evidence: police compare DNA found at a crime scene with a list of potential suspects identified through traditional policing methods. As illustrated in the previous chapter the procedure of sampling an individual for the purpose of investigating a specific crime is a rightly and necessarily accepted facet of the criminal process (provided the appropriate safeguards are in place to ensure that the taking of the sample is consistent with the values of the society in which it is operating). However, developments in technology and science have enabled the state to extend the long-established state tradition of gathering information from its citizenry to the area of DNA profiling.686

The chapter will examine this evolution and the rapid assimilation of DNA databases into the criminal investigation repertoire. It will begin by sketching the myriad of issues created by DNA retention before outlining the international trends in the area. It will then argue that the _balance_ in this area (between individual rights and due process values impinged on as a result of the retention and a state’s right to detect and investigate crime) has been predicated on an underdeveloped logic and flawed justifications. It will put forward that the _reflective regulatory framework_ developed in chapter three offers a more amenable solution than the current methods that are ostensibly aimed at achieving a balance in this area.

5.2. Crime scene samples

In line with the previous chapter, this chapter will describe the retention of genetic information in the form of crime scene samples and comparator samples (this includes the DNA samples, DNA profiles and associated information). It is submitted that the initial retention of crime scene samples (provided there are limitations surrounding the use to which

---

such samples may be put)\textsuperscript{687} is not overly controversial. Justification in this instance is linked to the prudential and legal requirement to retain evidence during a criminal investigation and trial proceedings.

An interesting question is posed by what should happen to the crime scene sample after it has served its purpose (i.e., the crime has been solved or the trial at which the evidence was required has concluded). For example, the increasing role of DNA as a \textit{liberator} is increasing pressure on governments to establish protocols for the retention of biological evidence even after a conviction.\textsuperscript{688} Word limits prevent a detailed analysis of this issue but as was observed in the opening chapter the post convictional retention of genetic information has the potential to pose uncomfortable questions on the concept of finality within the criminal process.

\textbf{5.3. Comparator DNA samples}

Similarly to the retention of criminal scene samples, the collection and retention of a comparator sample from an individual during the investigatory process and, if applicable, the subsequent trial can be justified (again from a pragmatic and prudential perspective) if it is relevant to the investigation and is taken within a framework that minimises the infringements upon the individuals involved in the sampling process. However, it is submitted from the beginning that the retention of this DNA material beyond this by the state is problematic. Its justifications are tenuously located on an intelligence gathering as opposed to an evidential basis. The issues can be subdivided into three areas: ethics, human rights and due process values.

\textbf{5.3.1. Ethics}

The ethical issues surrounding the retention of genetic material have received increasing commentary in recent years.\textsuperscript{689} The issues can be broadly separated into two broad categories: the state’s retention of extremely sensitive material from its citizenry (which creates risks

\textsuperscript{687} Although as will be noted towards the conclusion of the chapter, developments in technology and science (such as phenotype sampling) have enabled an increasing amount of information to be obtained from a genetic sample thus increasing the ethical issues surrounding the retention of this information.

\textsuperscript{688} For an interesting account of DNA’s development of a second identity within the criminal justice system, namely as a liberator (its first identity is linked to its capacity to benefit a criminal investigation) see Jasanoff S, “DNA’s Identity Crisis” in Lazer D (ed), \textit{DNA and the Criminal Justice System} (MIT 2004), 337–356.

\textsuperscript{689} For an excellent ethical evaluation of the retention of DNA by the state see Nuffield Council on Bioethics Report, \textit{The forensic use of bio-information: ethical issues} (London, 2007). Available at: \url{http://www.nuffieldbioethics.org/bioinformation}. 
around the potential use of and research into such material) and secondly, the individuals whom the state target for retention (concerns surround the traditional state practices of the state utilising technology and surveillance devices to create and reinforce the hierarchical classes within society).

A growing theme is to locate ethics and DNA retention within a broader system of social control. For example, there is a growing literature linking the creation of state databases to a growing panoptic or bio-surveillance society. For example, in the UK Information Commissioner, Richard Thomas, warned that the creeping intrusions of the state were turning Britain into a ‘surveillance society’:

*Today I fear we are in fact waking up to a surveillance society … As ever-more information is collected, shared and used, it intrudes into our private space and leads to decisions which directly influence people’s lives. Mistakes can also easily be made with serious consequences – false matches and other cases of mistaken identity, inaccurate facts or inferences, suspicions taken as reality, and breaches of security. I am keen to start a debate about where the lines should be drawn. What is acceptable and what is not?"

Building upon this concern Williams and Johnson note two developing surveillance categories that reflect a powerful new development in the forms of surveillance available to

---

690 Lyon, reflecting on DNA’s capacity to link an individual to a crime scene, conceptualised the body as a ‘forensic resource’ or as a forensic site for bio-surveillance and differentiation, where the body ‘is treated like a text. It becomes a password, providing a document for decoding’. See Lyon D, *Surveillance Society: Monitoring Everyday Life* (Open University Press 2001), 77. Such conceptualisation aligns with the Foucauldian perspective that bio-surveillance would represent a political technology to reinforce the subservience of citizens to the state, achieved through state institutions in collaboration with allied sectors of society, here, for example, law enforcement networks. See Foucault M, *The Will To Knowledge: The History of Sexuality, Volume I* (Penguin 1990), 95.


692 Cohen argues that the concept of social control throughout the twentieth century has been ‘directed towards creating new categories of deviance and social problems’ and ‘defining more people as belonging to special populations and then slotting them into one or other category’. See Cohen S, *Visions of Social Control: Crime, Punishment and Classification* (Cambridge: Polity Press, 1985), 195.


694 Press release, UK Information Commissioner (2 November 2006).
those tasked with the government of the conduct of contemporary subjects’.695 The first category comprises a pre-constructive mode of surveillance, gathered information about members of a population whose bodily actions and appearances are observed and recorded – traditionally referred to as _panoptic_. An obvious example is the prevalence of CCTV cameras in modern society.696

The second category comprises a reconstructive model of surveillance which seeks to identify individuals whose bodily presence and actions are invisible to observational techniques and so is applied retrospectively. DNA profiling, similar to other biometric identifiers fits into this category, as it does not directly monitor or watch the movements or actions of an individual but instead acts as a means of inferring an individual’s presence at a particular crime scene. Williams and Johnson note that the power of reconstructive surveillance rests on the ability of a DNA database to be an automatic bio-identification archive; _spædy, efficient, automatic and accurate_. This has created a new possibility for the coercive arm of the state; it enables _seemingly indefinite retrospective identifications_: subjects become identifiable and detectable through DNA as an _omnipresent witness_ both _of and as the body_, which intensifies the _gaze of surveillance_.698

It is submitted that in addition to the two categories outlined by Williams and Johnson, a third category can be added. Given the concerns surrounding the retention of a DNA sample (as it contains the entire genetic information of an individual), the concept of _genetic surveillance_ may become a possibility. The embryonic nature of genetic research is increasingly unlocking the secrets contained within our genes: thus if research were to link behavioral or social disorders to particular genetic sequences it could potentially enable a state to search their respective databases for these _riskype_ individuals.699

---

698 Ibib. 10.
699 Of concern is that the differences found therein may be used to describe the _social ills_ of society today and may result in a resurgence of the eugenic theories of the past generations. Suter S, — _M in the Family: Privacy and DNA Familial Searching_ (2010) 23 (2) Harvard Journal of Law & Technology 309, 372. While the full potential contained within the human genome is still a work in progress, studies have begun to show certain facets of behaviour may be linked to particular genetic sequences. However, it is important to stress that genetic sequences do not work in isolation and must be considered in correlation with other factors (such as environmental). The concern is that often lost in translation is the partial effect that a genetic sequence may have on behaviour. For example see. Joh E E, — _Reclaiming _DNA: The Fourth Amendment and Genetic Privacy_ (Year) 100 Nw. U.L. Rev. 857, 876–77; Simoncelli T, — _Dangerous Excursions: The Case Against_
However, as will be documented in the next chapter, the ethical issues can be minimised by the establishment of strict and transparent governance regimes which would, for example, ensure the integrity of the retained information, limit the use to which the information could be put and engage the public in an awareness campaign surrounding the use of genetics in society.

Thus if appropriate governance regimes are established the ethical concerns created by the use of DNA in the criminal process could be adequately addressed.700 It is also important to remember that ethics and society are a fluid concept and thus it is important to remain diligent in our attempt to locate the use of genetics in the criminal process against the backdrop of the acceptable use of genetics in society as a whole.

5.3.2. Human Rights

From a human rights perspective the retention of an individual’s DNA material creates significant concerns surrounding an individual’s right to privacy.701 Unsurprisingly, given the sensitive information contained within a DNA sample, the subject of DNA retention and the right to privacy has been the object of considerable attention.702

An initial difficulty in considering the issue of privacy and DNA retention is locating the boundaries of the confusing and evolving concept of privacy within modern society. For example, Miller claims that privacy is _exasperatingly vague and evanescent_.703 Similarly Gross proclaims _[T]he concept of privacy is infected with pernicious ambiguities_,704 while Bennitt notes that _attempts to define the concept of →privacy” have generally not met with any success_.705 The difficulty in articulating a clear and succinct definition of the right

---

701 For a useful introduction to the concept of privacy and the myriad of legal issues it creates see Delany H and Carolan E, The Right to Privacy: A Doctrinal and Comparative Analysis (Thomson Roundhall 2008). See also Stone R, Civil Liberties & Human Rights (8th edn, Oxford University Press 2010), chapter 11.
becomes clear when one of the seminal writers in the area of privacy, Robert Post observes that privacy is a value so complex, so entangled in competing and contradictory dimensions, so engorged with various and distinct meanings, that I sometimes despair whether it can be usefully addressed at all. Perhaps Judith Javis Thomson is correct to note that the most striking thing about the right to privacy … is that nobody seems to have any clear idea what it is.

Understandably, given this difficulty in defining the right to privacy, it is unsurprising that legal instruments and the courts have also struggled to clearly define the right. However, although there is difficulty defining the terms and scope of privacy, there is no doubting that the concept of privacy has been well established under international jurisprudence. For example, under Article 8(1) of the European Convention on Human Rights the right to privacy is referred to as the right to a private life, yet the concept has not been exhaustively defined by the European Court of Human Rights. The ECtHR has generally held that given the broad nature of privacy, it is not possible to subject it to an exhaustive definition. Traditionally the right to privacy was strictly a negative claim. As Robertson claims, at its most basic privacy means the right to be able to live some part of life behind a door marker — do not disturb. However, the concept of the right to privacy evolved over the course of the twentieth century from a strictly negative right to incorporating elements akin to a positive right. The majority of these positive tangential developments were founded on the notion of privacy being intrinsically linked with concepts of autonomy and freedom to make decisions.

International and ECtHR jurisprudence suggests that the concept of privacy can be subdivided into five broad (although not mutually exclusive categories), namely physical privacy rights: the right to respect for private life; the right to respect for family life; the right to respect for home; and finally, the right to respect for correspondence. While these categorisations are useful, in reality cases will often touch on a number of these privacy rights simultaneously.

---

708 Article 8 is separated into a number of different privacy categories: the right to respect for private life; the right to respect for family life; the right to respect for home; and finally, the right to respect for correspondence. While these categorisations are useful, in reality cases will often touch on a number of these privacy rights simultaneously.
Privacy, informational privacy, spatial privacy, relational privacy and decisional privacy.

Physical privacy is often referred to as bodily integrity. It is concerned with protecting the body from outside interference. Physical privacy is one of the oldest elements of privacy and has long been recognised by liberal democracies as a right that necessitates protection within a society (for example, acts prohibiting certain forms of intrusive behaviour, such as rape and assault). However, while society has long recognised the necessity to protect against such intrusion, it has also long recognised that there are occasions when it is necessary for the state to justifiably infringe the physical privacy rights (or bodily integrity of an individual). For example, the state enables agents of the state to intrude upon the bodily integrity rights of a citizen under restricted circumstances (during an arrest or obtaining a bodily sample that is relevant to an investigation). Despite this allowance, the state is not afforded carte blanche in violating an individual's bodily integrity during the pursuit of a legitimate aim (i.e. during a criminal investigation). The extent to which the state can intrude upon an individual’s bodily integrity is often established by the legislature and cases which are not covered by legislation (or go beyond the outlined legislation) are assessed by the courts. Often the courts will deem conduct to have gone beyond the original justification that was attached to the violation in question. For example, the ECtHR have found in a number of cases involving physical integrity and private life sufficient to engage Article 8(1). In Raninen v Finland (1997) 26 EHRR 563, the Court held that unnecessary handcuffing by the military authorities for persistent refusal to undergo military service is within the remit of Art 8(1). In X v Austria, (1979) 18 DR 154 the Court held that compulsory blood tests in paternity proceedings are also within the remit of Art 8(1), as was the excessive force used in a private home by the child’s stepfather in A v UK, (1998) 5 BHRC 137. Article 8(1) also encompasses impairments to physical well-being by non-physical assaults, such as pollution (Lopez Ostra v Spain (1995) 20 EHRR 277 and Guerra v Italy (1998) 25 EHRR 357 and noise pollution Rayner v UK 47 DR 5 (1987)). Not only does Article 8(1) recognise exercise force used by the state, but it also incorporates positive duties upon the state to protect an individual’s physical integrity. For example, in X and Y v Netherlands, (1985) 8 EHRR 235 the failure of domestic law to provide the right for a mentally handicapped person to bring a prosecution for sexual assault was held to be a failure to ensure the respect for her private life.

Spatial privacy (also referred to as territorial privacy) concerns the setting of limits on intrusion into personal spaces. Certain spaces are universally deemed to be inherently private, such as the domestic home. Even within the domestic home, certain areas may be deemed to incorporate a higher level of protection such as the toilet and the bedroom. For example, in Ireland an individual has a constitutional right to the ‘inviolability of the dwelling’. Although as Konvitz notes, ‘[spatial privacy] is a kind of space that a man may carry with him, into his bedroom or into the street’. Konvitz M, ‘Privacy and the Law: A Philosophical Prelude” (1966) 31 Law and Contemporary Problems 272, 280. However, outside the domestic environment the courts have held that other areas may be protected under the concept of spatial privacy, including one’s car and other public and private places. Central to this idea is context: for example, the Court held that the government surveillance in Martin v UK (27 March 2003), engaged Art 8(1). The government unsuccessfully attempted to argue that the covert surveillance of the applicant’s home by video camera was not applicable to Article 8(1) as the surveillance in issue was not private in nature, the camera only recorded what was clearly visible to anybody who passed by on the street. The court reiterated this approach in Von Hannover v Germany (Application number 59320/00, 24 June 2004). See Delany H and Carolan E, The Right to Privacy: A Doctrinal and Comparative Analysis (Thomson Roundhall 2008), chapter one.

Privacy includes the right to interact with others and, insofar as is reasonable, to control and dictate the control of information during those interactions. This has been held to be included under Article 8(1) in terms of ‘private life’, ‘family life’ and ‘correspondence’. Relational privacy is an excellent example of a tenet of privacy that has both strong negative and positive elements. For example it includes the freedom to associate with others (and determine the extent and nature of that association) and freedom from others. The positive element includes the concepts of ‘intimacy’, ‘anonymity’ and ‘autonomy’ which are all central to human development while the negative element, the ability to be free from others, derives from the important human element of being ‘left alone’, i.e. solitude. Ibid.

Decisional privacy involves the ability to make free decisions about the controllable elements of one’s life. In the majority of jurisdictions with a constitutional right to privacy (enumerated or unenumerated) the term privacy is often associated with this idea; it overlaps significantly with the concept of autonomy. It has been held to include matters such as contraception, procreation, abortion, child rearing, expression of one’s sexual orientation, and suicide. Ibid.
The provisions surrounding the establishment of a DNA database engage a number of privacy rights. Physical privacy (in the taking of the sample) and informational privacy (in the retention of the sample and the derived profile) are undoubtedly engaged. However, it is submitted that decisional and relational privacy are also potentially engaged, as possible disclosure of retained information may affect the individual’s ability to make decisions in his or her life, and affect his or her relationships with others. The wide ranging impact on privacy by the retention of biometric information is outlined by the Canadian Privacy Commissioner:

The measure of our privacy is the degree of control we exercise over what others know about us. No one, of course, has absolute control. As social animals, few would want total privacy. However, we are all entitled to expect enough control over what is known about us to live with dignity and to be free to experience our individuality. Our fundamental rights and freedoms – of thought, belief, expression and association – depend in part upon a meaningful measure of individual privacy. Unless we each retain the power to decide who should know our political allegiances, our sexual preferences, our confidences, our fears and aspirations, then the very basis of a civilised, free and democratic society could be undermined.\(^{716}\)

For the purposes of DNA retention the concept of informational privacy is particularly important.\(^{717}\) It involves the collection, use, tracking, retention and disclosure of personal information. As La Forest J. noted in the Canadian Supreme Court: –This notion of privacy derives from the assumption that all information about a person is in a fundamental way his own, for him to communicate or retain for himself as he sees fit.\(^{718}\)


\(^{717}\) The European Court of Human Rights jurisprudence has held that Article 8 on the right to respect for private life incorporates aspect of informational privacy such as one’s name, sexual orientation, identity, gender and communications and correspondence. For example, it has held that Article 8 is engaged when an individual is fingerprinted or photographed during an investigation (*Murray v UK*), surveillance of the individual (*Klass v Germany*) (1978) 2 EHRR 193 and collecting and retaining data about the individual (*Hewitt and Harman v UK*) (1992) 14 EHRR 657; *Chare (nee Jullien) v France* (1991)).

\(^{718}\) *R v Dyment* (1998) 45 CCC (3d) 244, at 255–256. This definition echoes the comments of Westin, when arguing that privacy is the claim of individuals, groups or institutions to determine for themselves when, how and to what extent information about them is communicated to others’. See Westin A, *Privacy and Freedom* (Oxford University Press 1967). Interestingly, the concept of informational privacy incorporates the ‘right not to know’. This right is a combination of informational privacy, decisional privacy and autonomy. The right not to know is recognised in various international instruments, including the UNEXCO Universal Declaration on the Human Genome and Human Rights and the Council of Europe Convention on Human Rights and Biomedicine.
Others such as Kaye and Smith suggest that privacy in general is not put at risk through the retention of a DNA profile. They locate the concerns within three forms of anonymity: temporal anonymity, conduct anonymity and spatial anonymity. Of the three it would seem that the storage of DNA on a database would impact heavily on the right of spatial anonymity, the ability to keep one’s movements and location confidential. A government technology that has the ability to consistently track our movements would strip us of our breathing room in which our liberty takes shape.

Despite the academic and judicial (as will outlined later) uncertainty surrounding the exact boundaries of privacy, it is submitted that the concept of the government obtaining an individual’s DNA and retaining it in a state repository is intrinsically intertwined with the concept of privacy. DNA goes beyond ordinary privacy and it incorporates details that an individual may not be aware of. A DNA sample contains uniquely sensitive information which can (or might in the future) reveal physical characteristics and traits, genetic disorders, susceptibility to disease and ethnicity. Importantly though, given the laws of genetics (as outlined in chapter two) it includes information not just about the individual in question but also includes information that can impact upon an individual’s family, such as relatedness and susceptibility to disease.

Gathering and subsequently retaining an individual’s DNA is far from an insubstantial, modest or minor issue but relates to a most intimate aspect of private life. While a DNA profile does not create the same ethical issues as the storage and use of an individual’s DNA sample, as it is derived from the non-coding region of the genome (which currently are thought not to reveal any behavioural or medical characteristics), it is submitted that it still impinges upon the concept of informational privacy, which is the right to retain control or at

---

719 Kaye DH and Smith ME, ‘DNA Databases for Law Enforcement: The coverage question and the case for a population wide database’ in Lazer D, DNA and the Criminal Justice System: The technology of Justice (Massachusetts Institute of Technology 2004), 265.
719 Ibid. Temporal anonymity is described as the ability of an individual to move location and reinvent ourselves. In today’s society where individuals have social security numbers, passports and bank details, the ability of an individual to disappear would seem to be remote.
720 Kaye DH and Smith ME, ‘DNA Databases for Law Enforcement: The coverage question and the case for a population wide database’ in Lazer D, DNA and the Criminal Justice System: The technology of Justice (Massachusetts Institute of Technology 2004), 265. Based on the notion that individuals should be free to act privately. Similar to the right to be left alone, it suffers from the same draw backs.
721 Ibid.
722 The concept of familial searching is an important area that will be discussed further towards the end of the chapter.
least oversight of data or material taken from or related to oneself (particularly when one considers the familial and ethnic information that can be derived from a DNA profile). Thus, given the fact that the retention of an individual’s biometric information, such as DNA, engages an individual’s right to privacy, it is imperative if the state engages in such a practice that it proffers clear and justifiable reasons for doing so.

However, and similarly to the ethical concerns alluded to in the previous section, the privacy concerns created by the retention of an individual’s genetic information may be alleviated and proportionally justified by the establishment of adequate safeguards restricting use and effective governance. For example, a state may attempt to minimise the privacy risks by retaining only the DNA profile (which has been described as a genetic ‘snapshot’) as opposed to the individual’s sample (containing an individual’s genome). Or if it were to retain both, to establish enhanced protections around the sample because of the more intimate material contained within. Such an approach is consistent with the philosophy that requires protection to complement the nature of the information being retained.  

5.3.3. Due process

However, while the ethical and due process concerns may be assuaged, from a due process perspective, the concept of enabling the state to retain the genetic information of its citizenry creates particular difficulty for one of the cornerstone protections of the criminal process, namely, the presumption of innocence. Similarly to the concept of privacy the presumption of innocence and the criminal process has been subject to significant academic discussion over recent generations. Briefly, the concept of the presumption of innocence developed in correlation with other rights to offer protection to the vulnerable individual against the ‘all powerful’ state. It is not based on the concept of the ‘undisputable’ innocence of an

---

726 A progressive approach to protection, directly related to the sensitivity of the data is not uncommon. For example, as observed by the European courts in Z v Finland (1998) 25 EHRR 371, the more sensitive the information, the greater the obligations imposed on the state to prove that its collection and retention is proportionate to the objective attempted to be achieved. The case involved the introduction of sensitive medical data, in which the court held that the investigation of crime may outweigh the confidentiality attaching to medical data.

individual but rather an appreciation of the inequality in power and means between the disparate parties in the criminal process.\textsuperscript{728}

The concern in relation to a DNA database (or in reality any state retention regime) is that it involves the state retaining information from its citizenry. As was elucidated in the previous chapter the collection of a DNA sample from an individual (within the appropriate setting) is a legitimate and justified endeavour. However, the reasons for retention of this information become tenuous once the collected information has served its purpose (i.e., it has implicated in or exonerated an individual from the investigation or has been presented at trial). The retention of this information after it has served its purpose requires fresh justification to be presented by the state. In short, the evidence significant justification is no longer relevant.

To aid in achieving clarity, it is perhaps beneficial to briefly sketch the range of individuals who may have their genetic material retained and theorise the grounding that provides justification for such retention.\textsuperscript{729} Those subject to retention may be divided into the following four broad categories: convicts, suspects, volunteers\textsuperscript{730} and the entire population.\textsuperscript{731}

Within these broad categories further subdivision is possible. In relation to convicts and suspects, retention can be correlated with offence categorisation (such as offence seriousness). Similarly, the convict category may be expanded to include those previously convicted of an offence (which may again be linked to offence type). Moreover, once a criterion for retention has been established (e.g., convicts and suspects based upon offence categorisation), further categorisation becomes available. For example, the length of time such information can be retained and any correlating removal criteria, who should have access to the retained information, the use to which such information should be put and importantly the form in which information may be retained (such as the DNA sample and/or its relevant DNA profile).

\textsuperscript{729} Word limits prevent a detailed consideration of this issue; for a useful overview see LRC Consultation Paper, \textit{Law Reform Commission, Consultation Paper on the Establishment of a DNA Database} (LRC CP – 2004); Kaye DH and Smith ME, “DNA Identification Databases: Legality, Legitimacy and the case for population Wide Coverage” (2003) Wis L Rev 413.
\textsuperscript{730} In terms of a volunteer it is difficult to argue in a liberal democracy, citing the principle of autonomy, against the concept of an individual consenting to his DNA (or fragment of it) being retained on a DNA database. Issues from this decision would surround the use to which such information may be put and whether the volunteer could remove such information and any possible ramifications for such removal.
\textsuperscript{731} As will be briefly discussed below the concept of a universal DNA database housing the entire population has been postulated as a possible means of eradicating potential arbitrariness (in terms of the type of individuals stored on the database). Under such a regime category choices would have to be made as to what stage an individual would be placed upon such a database (i.e., at birth or upon becoming a legal adult).
When originally conceived it was argued that DNA databases should retain the DNA information of those convicted of sexual offences.\textsuperscript{732} The rationale for this retention was based on a combination of rights forfeiture theory, recidivism based theory and the high probability that DNA is often found during a sexual offence.\textsuperscript{733} While appealing it is important to observe that the genesis of DNA retention is essentially grounded in ‘risk’ and ‘populist sentiment’.\textsuperscript{734}

Briefly, the theory evolved to include all those convicted of all serious crime, such as murder, manslaughter, rape and serious assault. When the UK introduced the world’s first DNA database in 1995, the threshold for entry and retention on the DNA database was lowered to all those convicted of recordable offences.\textsuperscript{735} In 2009, according to Interpol’s third global overview of the use of DNA profiling among its member countries, 54 countries had established DNA identification databases (a similar report in 1999 had noted 16 DNA databases in operation).\textsuperscript{736} The 2009 report illustrates the rapid global increase in the use of


\textsuperscript{736} See Interpol Handbook, \textit{DNA Handbook on DNA data exchange and Practice} (Interpol 2009), 52. Available at: \url{http://www.interpol.int/Public/Forensic/dna/handbook.asp}. A 2011 report by the Council for Responsible Genetics has recently states that the number of databases currently in operation is 56. See Thibedeau A, \textit{National Forensic DNA Database, Council for responsible genetics report} (Council for Responsible Genetics 2011).
DNA during criminal investigation from its initial use in the Pitchfork case in the mid 1980s, to the establishment of the first national DNA database in the UK in 1995. Concomitantly, the growth in domestic databases has also witnessed a change in the nature of DNA collection and retention practices within the respective states. As the Interpol report states:

Many countries have expanded their criteria to allow for inclusion of more crime types and person profiles, which in some countries may include any recordable offence. Likewise, in many countries the criteria for entering a person’s profile is not merely restricted to convicted offenders but may also include suspects. Countries also use DNA databases to match other profile categories such as unidentified bodies and missing persons.

A cursory glance at the global context, presents a variety of diverging DNA retention regimes. For example, the majority of states differ in relation to whom (offender, suspect, volunteer) and what (a profile or a sample) may be subject to retention. For example the US has embarked on an aggressive approach towards DNA retention (as the passing of the recent Katie Sepich Act, outlined in the previous chapter, illustrates) which attempts to encourage states to upload all those arrested for felony offences on to the national DNA Index; Canada’s National DDNA Database differs significantly as it has a strictly criminal database (although it is currently under pressure to expand its regime); while New Zealand has recently moved away from a strictly criminal database similar to Canada and adopted a quasi criminal database: it will now allow those arrested to be placed and speculatively searched on the DNA database but it will only retain the DNA profiles of those convicted of an offence (therefore individuals, acquitted or released without charge will have their DNA profile removed).

This International snapshot illustrates that there is a wide ranging spectrum for the modelling of a database. Ranging from the strictly criminal DNA database in Canada, to the arrestee databases in the US, to countries which have yet to implement a DNA database such

---

738 Ibid.
739 However, prolonged retention has been on the national agenda since 2005. See DNA Fingerprint Act 2005, in particular the expungement policy.
741 For the purposes of avoiding repetition, legislative details of the relevant jurisdictions in relation to their DNA databases will be provided when analysing the Irish recommendations.
as the Philippines. These divergences are replicated in the majority of countries that have adopted DNA databases in Europe. For example a recent European Network of Forensic Science Institute (ENFSI) report illustrates that the type of DNA database that has been implemented in terms of scope and retention criteria varies dramatically between EU member states. Thus if one combines the diverging approaches in Europe with the diverging approaches internationally, it is submitted that Campbell is correct when she observes that although the value of DNA in criminal investigations is not disputed, policies relating to the parameters of these databases and the duration of storage are in flux.

However, while the type of DNA database may vary, one issue that is similar between all countries which have implemented a DNA database is the concept of expansion (in terms of both collection and retention). Until recently, every country in the world that has implemented a DNA database has increased or widened the net of those who can be included in the database. Even the UK (as will be described in the next section), which have been obliged to reduce its DNA database, will retain a DNA retention policy that is still greater than the original policy implemented in 1995. Thus as Bramley states the general trend ... is to amend current legislation to widen the scope of those from whom profiles might be obtained. Whilst traditionally based on the point of conviction, the trend in the last decade, as illustrated above, has seen the move towards arrestee or non-conviction

---

742 Although failure to implement a DNA database would seem to be based primarily on financial constraints as opposed to ideological or human rights concerns. See De Ungria MC and Mangueran Jose J, “Forensic DNA profiling and databasing: the Philippine experience” in Hindmarsh R and Prainsack B (eds), Genetic Suspects: Global Governance of Forensic DNA Profiling and Databasing (Cambridge University Press 2010), chapter 15.
743 See Appendix 3 for a summary of an ENFSI (European Network of Forensic Science Report) that documented the type of DNA Databases in EU member states. See also Asplen CH, Report on ENFSI Member Countries’ DNA Database Legislation Survey (ENFSI 2006). The differences range from whether the person has been convicted of a particular offence, varying from minor offences to serious offences, to whether the person has been arrested (again relating to the type of offence) or to the requirement that the police secure a court order before being allowed to obtain a sample from the individual. Once a profile has been loaded on to the database differences again arise as to whether the profile should be removed if the speculative search fails to reveal a hit or should be retained subject to a strict time limit or should be retained indefinitely.
744 At the time of the 2005 survey the United Kingdom’s approach of indefinitely retaining the profiles of those arrested for recordable offences was unique. All the other EU countries required the samples and the relevant DNA profiles to be destroyed if the person is acquitted or not prosecuted, either immediately or within a time limit. See Bramley B, “DNA Databases” in Fraiser J and Williams R, Handbook of Forensic Science (Willan Publishing 2009), 323.
746 The UK was obliged to reduce its DNA database following the Marper decision; it was not a domestic choice to do so.
databases. This expansion is another illustration of the prevalence of risk and function creep in DNA policy.

As Steinhardt notes, "While DNA databases may be useful to identify criminals, I am sceptical that we will ward off the temptation to expand their use. In the last ten years alone, we have gone from collecting DNA only from convicted sex offenders to now including people who have been arrested but never convicted of crime." Unsurprisingly, the expansion of collection and retention policies has dramatically increased the size of national DNA databases. For example, the table below charts the spectacular increase in the US NDIS and the UK NDNAD over the previous decade:

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2005</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparator Profiles</td>
<td>460,365</td>
<td>2,826,505</td>
<td>8,483,906</td>
</tr>
<tr>
<td>Crime Scene Samples</td>
<td>22,484</td>
<td>126,315</td>
<td>324,318</td>
</tr>
<tr>
<td>% of population</td>
<td>.001%</td>
<td>.01%</td>
<td>.03%</td>
</tr>
</tbody>
</table>

This growing prevalence of risk has aided DNA retention policies to expand beyond their original remit (restricted to offenders) to increasingly target other 'risky' members of society, namely those subject to an arrest. The difficulty is that while justifications (albeit often speculative) may be proffered to substantiate the retention of the DNA of those convicted of an offence, it is erroneous to apply this criterion to those who are merely subject to an arrest. However, when one assesses the current divisions that are in existence within society the acceptance of a policy that essentially enables the state to house the DNA of innocent individuals correlates with the long standing state practice of devising practices so as to subdivide and categorise its citizenry. See generally, Caplan J and Torpey J (eds), Documenting Individual Identity: The Development of State Practices in the Modern World (Princeton University Press 2001).


Barry Steinhardt, Associate Director of American Civil Liberties Union's Program on Technology and Liberty, quoted in Taylor BL, —Striving DNA Samples of Non-convicted persons & the debate over DNA database expansion" (2003) 20 TM Cooley L Rev 509.

Thus the previously justified regime for sampling individuals for the investigation of specific offences has been augmented by a regime in which individuals are sampled upon arrest or conviction of an offence (sampling varies upon jurisdiction). The fundamental change is that the DNA sample is no longer required to be relevant to the specific case so as to justify the sampling process. The dissolution of the specific crime principle removes evidential significance, which underpinned the original sampling of an individual. DNA, replacing it with the ‘probability’ that an offender (and more recently an arrestee) may provide a DNA ‘match’ against an existing or future DNA profile on the database.

Justification for sampling under this premise is extended from the justification of investigating specific crime, to the potential benefits proffered by conducting a speculative search on a repository of existing DNA profiles. Of particular appeal is the allure of securing a ‘cold-hit’ through a speculative search of a profile derived from an individual or from a crime scene against a profile already present on the database. Song et al describe a ‘cold-hit’ as the following: ‘In a —database search”, the DNA profile from a crime-scene sample is compared to the profiles in databases to determine if a match exists. Such matches, whether offender-to-scene or scene-to-scene, are called ‘cold-hits”.

As DNA databases

---

755 Figures in the table are drawn from the UK DNA Database annual reports.
754 Police are still allowed to take DNA samples from arrested individuals for the investigation of a specific offence.
755 See McCartney C, Forensic Identification and Criminal Justice: Forensic science, justice and risk (Willan Publishing 2006). As documented in chapter three the capacity of DNA and particularly DNA databases to solve signal crimes has created a silver bullet mentality surrounding the use of DNA in the criminal process. It is difficult to dispute the appeal of linking an individual to a crime scene by speculatively searching a DNA profile on a database. Thus it is understandable that politicians attempt to benefit from the ‘political capital’ available following a high profile success story by calling for an increase in collection and retention provisions, and this has resulted in the rapid expansion and acceptance of DNA within the criminal process.
have expanded, so too have the number of ‘cold-hits’. Thus it is unsurprising that the philosophy of ‘the bigger the better’ has been appealing during the DNA database debate.

As was discussed in chapter three, the capacity of a DNA database to produce a cold hit and aid in solving a ‘signal crime’ creates concerns when attempting to achieve a ‘balance’ within this debate. Proponents of DNA databases cite the potential benefits of the speculative search approach (arguments which are increasingly augmented by high profile success stories). Such arguments, often prevalent in political and media rhetoric, have helped in forging the ‘forensic imaginary’ introduced in the opening chapter.

Understandably this alluring potential and ‘forensic imaginary’ have created a dangerous narrative around the use of DNA within the criminal process. Those in favour of its use cite its theoretical ability to assist police investigations, calling for widespread collection, retention and usage policies. The debate, however, is often dominated or usurped by ‘signal crimes’ or ‘exceptional case syndrome’. These exceptional cases, similarly to the cases outlined in chapter three, are often a murder or serious crime that would not have been solved but for the lead provided by the application of DNA to the investigation. For example, in the case of a DNA database, proponents of DNA will call for a widening of the threshold for

758 For example, in the United States the FBI reported in November 2004, a total of 19,500 cold hits (including both scene-to-scene and offender-to-scene matches) on the National DNA Index System (NDIS), by March 2007 the number of ‘cold hits’ had grown to over 47,000. See NDIS Statistics, FBI, Measuring Success, 2005. Available at: http://www.fbi.gov/hq/lab/codis/success.htm.

759 The allure of a DNA database is epitomised by a recent case from the United States, in which Denis Bradford was arrested for the attempted murder and sexual assault of Jennifer Schuett. On August 10, 1990 in Texas, when Jennifer Schuett was eight years old, she was abducted by Bradford. Powers RC, ‘DNA and Determination Lead to Arrest in 19 Year Old attempted murder investigation’ FBI Press release (13 Oct 2009). Available at: http://www.ci.dickinson.tx.us/web/police_press_releases/10-13-2009%20Cold%20Case%20Attempted%20Murder%20Arrest%20.pdf. Bradford proceeded to drive Schuett to a remote location. He then proceeded to sexually assault her, slit her throat from ear to ear, before leaving her for dead. She was discovered approximately 14 hours later by children playing in a nearby field. While bodily samples were located from the victim and the scene, DNA techniques at the time were unable to establish a working DNA profile. Police spent almost 20 years investigating the offence but with a shortage of leads and relevant evidence the crime remained unsolved. However, in early 2009, developments in DNA science (new DNA developments allowed a DNA profile to be obtained from the old biological evidence) and the establishment of a DNA database allowed the police to make a key breakthrough in the case. Police speculatively searched the new DNA profile on the DNA database. The search revealed Denis Bradford as a ‘match’, thereby solving the 20 year old case. Bradford’s DNA was on file because he had been charged in 1996 with kidnapping, sexually assaulting and threatening to kill a woman in Arkansas. He was convicted of the kidnapping charge and spent three years in prison, earning parole in February 2008. See Paschenko C, ‘DNA could solve 1990 Jennifer Schuett kidnapping’ Galveston County: The Daily News (13 July 2008). Available at: http://galvestondailynews.com/story/122063. Bradford subsequently confessed to the murder; however, he committed suicide in his cell while being detained in Galveston County Jail in Texas while awaiting trial. See Rice H, ‘Man found hanging in cell after arrest for 1990 rape’ Houston Chronicle (10 May 2010). Available at: http://www.chron.com/disp/story.mpl/metropolitan/6998553.html. It is the spectacular results of ‘cold’ hits (a cold hit is where the police obtain a match where there is no other evidence in the case), such as the Jennifer Schuett case, that has helped create the alluring potential and mystique surrounding DNA (in particular a DNA database).
entry and retention on the database to include as many individuals as possible. This ‘innocent have nothing to hide’ mantra is often advocated by those in favour of increasing the role of DNA in the criminal process. An example of the pro-DNA position is provided by Lord Brown’s judgment during the House of Lords decision in the seminal case, R(S and Marper) v Chief Constable of the S. Yorkshire Police (which will be discussed further below):\footnote{760 (2002) 1 WLR (H.L.) 2217.}

Given the carefully defined and limited use to which the DNA database is permitted to be put – essentially the detection and prosecution of crime – I find it difficult to understand why anyone should object to the retention of their profile (and sample) on the database once it has lawfully been placed here. The only logical basis I can think of for such an objection is that it will serve to increase the risk of the person’s detection in the event of his offending in future. But that could hardly be a legitimate objection, nor indeed, is it advanced as such. Such objections as were suggested seem to be entirely chimerical. First, the fear of an Orwellian future in which retained samples will be re-analysed by a mischievous state in the light of scientific advances and the results improperly used against the person’s interest. If, of course, this were a valid objection it would apply no less to samples taken from the convicted as from the unconvicted and logically, therefore, it would involve the destruction of everyone’s samples. But no such abuse is presently threatened and if and when it comes to be then will be the time to address it. Sufficient unto the day is the evil thereof person. In short, it seems to me that the benefits of the larger database … are so manifest and the objections to it so threadbare that the cause of human rights generally (including the better protection of society against the scourge of crime which dreadfully afflicts the lives of so many of its victims) would inevitably be better served by the database’s expansion than by its proposed contraction. The more complete the database, the better the chance of detecting criminals, both those guilty of crimes past and those whose crimes are yet to be committed. The better chance too of deterring from future crime those whose profiles are already on the database. And these, of course, are not the only benefits. The larger the database, the less call there will be to round up the usual suspects. Instead, those amongst the usual suspects who are innocent will at
Lord Brown’s communitarian and public safety tone is representative of those who favour an expanded role for DNA during the criminal investigation process. The basic logic behind this premise is undoubtedly appealing. It argues that an individual should have no reason to object to his or her DNA being retained in a state repository (once appropriate safeguards are established which will ensure that an individual’s genetic material is adequately protected). However, despite the allure of this position it is imperative that we attempt to engage in this debate on a rational and objective basis. Thus from a justification perspective it is imperative that if we are to retain the DNA of a group of individuals upon a database then the justification for doing so should be clearly established.

Thus far these clear justifications have been absent. For example, returning to the presumption and DNA retention, it has been suggested that a distinction can be drawn between those convicted and those arrested but not subsequently convicted of an offence. The argument is that an individual who has been convicted of an offence can no longer hold claim to be innocent of that offence. This observation can draw support from current international jurisprudence involving the concept of DNA retention and those convicted of an offence. The international approach focuses on the categories of individuals whose DNA may be retained, the duration of retention and the content of what is stored. For example, narrow regimes retaining the DNA profiles of those convicted of serious offences have generally been upheld and approved by international courts including the ECtHR, the state U.S. Courts and the Canadian Supreme Court.

761 R (S) v Chief Constable of S Yorkshire Police [2004] 1 WLR 2222.
763 Van der Velden v The Netherlands App No 29514/05 (European Court of Human Rights, December, 7, 2006); W v The Netherlands App no 20689/08 (European Court of Human Rights, January 20, 2009).
764 Jones v Murray 962 F 2D 302 (4th Cir 1992); US v Kimler 335 F 3D 1132 (10th Cir 2003); Groceman v US Department of Justice 354 F 3D 411 (5th Cir 2004); Green v Berge 354 F 3D 675 (7th Cir 2004); US v Kincade 379 F 3D 813 (9th Cir 2004, cert denied 544 US 924 (2005); Nicholas v Goord 430 F 3D 652 (2nd Cir. 2005); US v Sczubelek 402 F 3D 401 F 3D 175 (3rd Cir 2005); Padgett v Donald 401 F 3D 1273 (11th Cir 2005), cert denied 544 US 820, (2005); Wilson v Collins 517 F 3D 421 (6th Cir. 2006); US v Conley 453 F.3D 674 (6th Cir. 2006); US v Hook 471 F 3d 766 (7th Cir 2006); US v Kraklio 451 F 3D 922 (8th Cir 2006); US v Weikert 504 F 3D 1 (1st Cir 2007); US v Amerson 483 F 3D 73 (2nd Cir 2007); US v Kriesel 508 F 3D 941 (9th Cir 2007); US v Banks 490 F 3D 1178 (10th Cir 2007); R v SAB [2003] SCC 60, [2003] 2 SCR 678.
However, it is submitted that the retention of the DNA of those convicted of an offence is a concept that unfortunately became a ‘norm’ within the DNA retention debate without adequate consideration. It is agreed that an individual who has been convicted of an offence can no longer claim to be ‘innocent’ of that offence, however, this does not result in the individual being unable to claim such a presumption for other offences. Thus the retention of a convicted individual’s DNA on the database is not grounded upon an evidential significance justification but on an intelligence gathering rationale. It is essentially a mechanism that enables the state to ‘build’ a genetic repository of those convicted of particular offences. Justifications in this instance are grounded upon two primary factors: the ‘potential’ that such retention presents (heightened by the assumption that such individuals tend to reoffend) and rights forfeiture theory (the idea that those convicted of particular offences forgo the right not to have their DNA retained on a database). A more persuasive argument for the retention of the DNA of those convicted of an offence would be to ground such retention on the growing role of DNA as a potential ‘liberator’ from miscarriages of justice. Thus the retention of such information for a finite period of time (correlating with the individual’s sentence) would seem to present a more prudent course of action.

Although there may be debate surrounding the applicability of the presumption to those convicted of an offence, it is submitted that the retention of an unconvicted individual’s DNA on a database directly engages an individual’s presumption of innocence. The rationale for arrestee or ‘non-conviction’ DNA databases is premised on the assumption that an individual arrested for an offence presents a heightened risk of offending in the future, thereby distinguishing them from ‘truly’ innocent individuals who have never come to the attention of the police. Justification for such an argument is difficult to locate. It creates a disturbing precedent for the concept of the presumption as it allows an innocent individual’s DNA to be stored on a state repository as a direct consequence of interaction with the state.

Before accepting that the retention of an innocent individual’s DNA violates the presumption of innocence, it is worth considering whether the legal construct of the presumption is actually violated. For example, in a European setting the presumption is outlined in the ECHR under Article 6(2), which states that everyone charged with a criminal offence shall

---

766 Miscarriages of justice aside.
767 Rights forfeiture theory is problematic as it equates DNA retention with a form of punishment. Thus creating potential problems surrounding retention being considered a form of additional penalty.
be presumed innocent until proved guilty according to law’ and requires that a court ‘should not start with the preconceived idea that the accused has committed the offence charged; the burden of proof is on the prosecution, and any doubt should benefit the accused.’

In the United States the presumption is derived from the Fifth Amendment. The US Supreme Court has described the presumption as ‘a basic component of a fair trial under our system of criminal justice’ and as ‘axiomatic and elementary’.

A key question to assess is at what stage the presumption becomes active. As Ashworth postulates the range and application of the presumption are ‘eminently contestable’ on whether it operates exclusively at the criminal trial or on a more macro level in the criminal process. On this issue Ni Raifeartaigh offers a useful typology of the presumption: at one end of the spectrum it has no role during pre-trial investigation while at the other end it prohibits all infringements that infer or presuppose guilt. A middle ground interpretation is that it applies at the pre-trial stage so that an accused should not be investigated from an assumption of guilt. This view would seem to be incorporated by the ECHR jurisprudence that has held that ‘pre-trial procedures should be conducted, so far as possible as if the defendant were innocent’.

In the US the presumption has been narrowly construed. It has been described not as a presumption ‘in the strict sense of the term [but] ... simply a rule of evidence which allows the defendant to stand mute at trial and places the burden upon the government to prove the charges against him beyond a reasonable doubt’. Thereby the presumption does not apply to pre-trial proceedings in the United States, rather it ‘allocates the burden of proof in criminal trials; it also may serve as an admonishment to the jury to judge an accused’s guilt.

---

769 Barbera v Spain (1989) 11 EHRR 360, para. 77.

770 The Fifth Amendment states: ‘No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the Militia, when in actual service in time of War or public danger, nor shall any person be subject for the same offence to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself nor be deprived of life, liberty or property, without due process of law; nor shall private property be taken for public use, without just compensation.’


772 Coffin v United States 156 US 432, 453 (1895).


or innocence solely on the evidence adduced at trial and not on the basis of suspicions. Therefore, as Campbell notes, the presumption of innocence in the US does not prevent the retention of an innocent individual’s DNA, as the presumption is solely a rule of evidence allowing a defendant to remain silent at trial and placing the burden of proof to prove beyond reasonable doubt on the state. Therefore legally it is arguable that DNA retention does not contravene the presumption in the United States.

Similarly in Europe under the ECHR, it has been suggested that the presumption cannot apply after a lawful arrest as reasonable suspicion is required on behalf of the police before an individual can be engaged in the formal mechanisms of the criminal process. However, while reasonable suspicion may justify the original sampling, the lasting suspicion caused by the prolonged retention of DNA presents a fresh challenge which requires fresh justifications. Moreover, from a rights perspective, and dissimilar to the US position, the ECHR presumption goes beyond procedural guidelines to encompass a reputational aspect which seeks to guard the status of the individual. It is therefore arguable that the retention of an innocent individual’s DNA will prove problematic from a rights perspective. Moreover, Article 6(2) may be breached by the police. In Allenet de Ribemont v France, during a press conference, the Minister of the Interior and senior police implicated the applicant in murder. The statement was made after arrest but prior to the applicant’s trial. Finding a breach of Article 6(2), the court stated that this was clearly a declaration of the

777 Bell v Wolfish, 441 US 520, 533 (1979). Cf Stack v Boyle 342 US 1, 4 (1951): ‘This traditional right to freedom before conviction permits the unhampered preparation of a defence, and serves to prevent the infliction of punishment prior to conviction ... Unless this right to bail before trial is preserved, the presumption of innocence, secured only after centuries of struggle, would lose its meaning.’
779 Campbell observes that this is also the situation in New Zealand. See New Zealand Bill of Rights Act 1990, s.25; see also Hansen v R. [2007] NZSC 7. Campbell L –‘Non-conviction’ DNA Databases and Criminal Justice: A Comparative Analysis” (2011) Journal of Commonwealth law 55, 70
782 Ibid. 606. For example, judicial decisions founded on the belief that an acquitted individual is guilty, such as requiring the person to pay the costs of the proceedings or compensation or suggesting that had the prosecution not been time barred it would very probably have led to ... conviction’, have been held to breach Art.6 of the ECHR. See Minelli v Switzerland, 5 EHRR 554, 37–38. Furthermore, where a court expresses suspicion about an acquitted individual, such as refusing him or her compensation or by stating that suspicion has not been dispelled, the presumption will also have been infringed. See Sekanina v Austria (1994) 17 EHRR 554, 37–38
applicant’s guilt which, firstly, encouraged the public to believe him guilty and, secondly, prejudged the assessment of the facts by the competent judicial authority”.

While non-conviction DNA retention is not an expression of guilt it arguably infers suspicion on the part of the state as to the future criminality of the individual and his or her likelihood of offending in the future. Although in *S & Marper v United Kingdom*, the ECtHR held that “the retention of the applicants’ private data cannot be equated with the voicing of suspicions”. Unfortunately the court did not elaborate on this distinction; therefore one can only speculate that the basis for the differentiation is the absence of overt articulation limiting DNA retention. However, it is submitted that retention of an innocent individual’s DNA is comparable as it demotes a state’s opinion on the criminal tendencies of the relevant individual. Therefore it is suggested that the state storage of DNA is analogous to the direct articulation of suspicion, consequently threatening the “reputational sense” of the presumption of innocence.

Campbell presents an interesting analogy between bail and the retention of unconvicted individual’s genetic information. Bail may be declined under a number of conditions, *inter alia*, if clear and convincing evidence is produced that pre-trial release may endanger another individual or the general community or to prevent the commission of an offence. Justifying this infringement Laudan argues that bail hearings should not be equated with the presumption of innocence. Consequently, if the controversial deprivation of liberty as a result of bail refusal is allowed should invasive retention of an individual’s DNA (which is arguably less invasive) also be permitted? Campbell suggests that the criteria for the refusal of bail should be considered for the issue of DNA retention, as both situations are contravening the rights of an individual who is legally innocent on the assumption of

---

786 Although as Campbell notes, as outlined in Article 6(2) a person must be charged before the presumption becomes active, therefore excluding a DNA retention regime based on sampling and retention at the point of arrest regardless of a subsequent charge or conviction. Campbell L, –“Rights Based Analysis of DNA Retention” [2010] 12 Crim LR 889, 901. It is submitted that this illustrates that the presumption of innocence as legally defined may not fundamentally prohibit the legitimacy of DNA retention of innocent individuals, although this assumes a purely procedural basis for the presumption. As the ECtHR have expanded its definition to include a “reputational” element, it is arguable that prolonged retention may be equated with a “voicing of suspicions”.
788 Bail Reform Act 1984 (U.S.); European Convention on Human Rights, Art.5; Criminal Code of Canada, s.515 (10)(b); Bail Act 2000 (New Zealand), s.8.
potential future criminality.\textsuperscript{790} For denial of bail a number of criteria must be satisfied: \textquote[Campbell L, ‘Non-conviction’ DNA Databases and Criminal Justice: A Comparative Analysis” Journal of Commonwealth law 55, 72.]{clear and convicting evidence}\textsuperscript{791} or \textquote[Bail Reform Act 1984 18 USC 3142 (f).]{strong and specific reasons} are required for restraining the defendant’s liberty\textsuperscript{792} over his presumption of innocence and individual freedom.\textsuperscript{793}

However, bail and DNA retention are not wholly comparable. The refusal of bail has a direct and substantial impact upon an individual, i.e. the deprivation of his or her liberty; in contrast, the retention of an individual’s DNA is more intangible. It arguably does not have an impact upon the relevant individual, unless the retained sample is \textquote[W v Switzerland (1994) 17 EHRR 60; Labita v Italy No 26772/95, April 6 2000; Simirnova v Russia (2003) 39 EHRR 450.]{matched} to a crime scene profile.\textsuperscript{794} Indeed, DNA retention is not as directly offensive as the deprivation of liberty; however, it is suggested that it is erroneous to dismiss DNA retention as inconsequential. DNA retention enables the state to retain unique personal information which can reveal matters such as familial relationships and ethnicity.\textsuperscript{795}

Additional problems with this analogy are the fact that when an individual is confronted with a bail application he or she will have been charged with an offence and will be faced with the prospect of trial at which point he or she will have an adequate opportunity to contest the charges against him or her. Thus, a bail refusal is for a finite period of time (until the relevant individual is convicted, acquitted or the charges dropped). In contrast, DNA retention is often indefinite or for a considerable period of time, and unlike bail (which is grounded on the basis of securing an individual’s appearance in court) the goal behind retention is less tangible (primarily grounded on an intelligence basis). Moreover, often a DNA sample is being taken from individuals prior to being actually charged for an offence, so the judicial buffer to assess the merits of the sampling is absent. However, the analogy is useful as it introduces the concept of employing a similarly cautious approach by an external party when assessing the merits of the prolonged retention of an individual’s genetic material.

It is suggested that the prolonged retention of an individual’s DNA (including DNA sample, profile and associated information) creates concerns for an individual’s presumption of innocence. The retention of an individuals’ DNA in a state repository (after it has served its

\textsuperscript{791} Bail Reform Act 1984 18 USC 3142 (f).
\textsuperscript{793} W v Switzerland (1994) 17 EHRR 60; Labita v Italy No 26772/95, April 6 2000; Simirnova v Russia (2003) 39 EHRR 450.
\textsuperscript{794} This was argued by the UK government in S & Marper v UK (2009) 48 EHRR 50, 94.
\textsuperscript{795} Ibid. 73–76.
legitimate purpose) poses questions about the concept of 'innocence' and in this sense it should not be equated with an individual’s legal status of guilt or innocence of an offence (a role reserved for the fact finder in a court of law) but linked to the individual’s status in the eyes of the public (or perhaps more importantly in the eyes of the police).

As alluded to earlier, there are situations in which it is legitimate for the coercive arm of the state to interfere with the rights of an individual: for example, if the interference can be justified by a 'reasonable suspicion' that the individual involved has been engaged in a criminal offence and the interference is relevant for the investigation of the particular offence. However, it is submitted that while original contact can be justified, it is important that if the individual who is suspected of the offence is cleared or acquitted of the offence, that he or she can return to the original position before the original contact. Thus while it may be appealing to retain the DNA of those arrested for an offence, it is difficult to justify this retention once an individual has been acquitted or cleared of a criminal offence. It is submitted that this argument holds true regardless of the category of offence. Therefore while it is important to secure convictions of serious crimes, it does not automatically follow that those arrested and charged with serious crimes should have their rights and due process safeguards disregarded particularly if they are subsequently released or charges dropped or acquitted. One may suggest that we should be enhancing and rigorously defending the safeguards for those arrested for serious offences as in reality these individuals have considerably more to lose than those charged with lesser offences. The issue is usefully summarised by the Human Genetics Commission in the UK:

... suppose two people are arrested and brought to a police station to have a DNA sample taken; one is suspected of a serious crime (murder or rape, for example) the other of a minor crime (say, taxi touting). Criminal proceedings run their course and both are found not guilty (or perhaps proceedings are dropped or they are never charged). In the eyes of the law, both are presumed to be innocent. Given that the offences happened, this entails that people other than the arrestees (perhaps as yet identified) are presumed to have committed the offences of which they were suspected. If this is the case, it cannot therefore make sense to keep the DNA profile of someone who is not guilty of a murder longer than that of someone who is not guilty of taxi touting. This is because the person who is not guilty of taxi touting is also not guilty of the murder in the
same way and to the same extent as the person suspected – but acquitted – of the murder. And because being not guilty is the reciprocal of being guilty and neither admit of degree, it can make no sense to keep the profile of the suspected murderer or taxi tout and not that of any other member of the population who is equally not guilty.796

5.4. ‘Striking the Right Balance’: S & Marper v United Kingdom

In any debate within a pan-European context involving DNA retention of those unconvicted of an offence, it is important to consider the recent developments on this issue in the United Kingdom (the UK in this instance refers to England, Wales and Northern Ireland as Scotland has adopted a different DNA retention regime). As a result of its aggressive DNA policies the UK became the market leader in the application of DNA in the criminal process, resulting in the largest and most comprehensive DNA database in the world.797 A detailed examination of the UK expansion programme is not possible within the word constraints of this thesis798, however, briefly, to place the subsequent analysis in context, the UK NDNAD was part of a political initiative referred to as the DNA Expansion Programme.799

PACE (as amended) empowered police officers to obtain samples from anyone who was arrested, charged, reported for summons or convicted of any recordable offence, whether or not the samples were required for evidence in the particular case.800 The abolition of the two

796 Human Genetics Commission (UK), Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance and use of the National DNA Database (November 2009), 37.
798 For an excellent account of the initiative and relevant issues see McCartney M, –The DNA Expansion Programme and Criminal Investigation‖ (2006) 46 The British Journal of Criminology 175.
799 For further details of the programme see Home Office Forensic Science and Pathology Unit, DNA Expansion Programme 2000-2005: Reporting Achievement (Home Office 2005).
800 The Criminal Justice and Public Order Act 1994 (CJPOA), implemented and extended the recommendations contained within the Runciman Report (See Royal Commission on Criminal Justice (1993) Report, Cm. 2263); it sought to take into account the recent developments in DNA technology and to ensure that criminal investigations were deriving the maximum benefit from DNA. The 1994 Act indirectly became the statutory foundation for the database and importantly it expanded police powers in relation to collection and retention of bodily samples. To aid in populating the DNA database, it reduced the threshold for non-intimate sampling
step test in relation to forensic samples was important. Its primary functions were to widen the application of DNA in pre-trial criminal investigation and to aid in populating the NDNAD, as McCartney observes:

This power then extended sampling powers to cases where DNA evidence may not have been relevant to proving guilt and suspects may not be in police detention. This was perhaps the first legislative signal that samples were now to be taken, not simply to prove guilt in the present investigation, but to commence the building of a database of DNA samples from a wide range of convicted offenders.  

Similarly as Higgins and Tatham observe, “These amendments were significant in that they enabled large numbers of samples to be taken and provided the foundation for a substantial national DNA database.”

However, while the CJPOA increased the application of DNA in the criminal process and laid the foundations for a DNA database, it did attempt to limit the impact of these provisions by providing a number of safeguards; as Higgins and Tatham note they [the amendments] also protected the individual who was acquitted, or against whom proceedings from serious arrestable offences to that of recordable offences. Sections 62 and 63 of PACE were amended to reclassify buccal swaps as non-intimate samples, thereby no longer requiring consent. In anticipation of a DNA database, the CJPOA also importantly inserted s.63(a), which allowed ‘speculative searching’ of a DNA database; it allows the police to search crime scene profiles and suspect profiles against a repository of previously stored DNA profiles. For a detailed account of the relevant provisions see Steventon B, “Creating a DNA Database” (1995) 59 (4) Journal of Criminal Law 411. One of the rationales for lowering the threshold for sampling and entry on to the database was based on the research findings from the Derbyshire Constabulary CATCHEM (Centralised Analytical Team Collating Homicide Expertise and Management) Project, which demonstrated that in more than half the cases of murder where the victim is a child or young women, the offender had a previous conviction for assault or sexually orientated minor crime before going on to commit the offence of murder. The Association of Chief Police Officers (ACPO) cited these and related studies to the Royal Commission and, they claimed these studies illustrated the typical trajectory of a criminal career characterised by recidivism and crime progression. The premise of the ACPO’s proposals was to widen the application of DNA sampling to as many individuals as possible. See Dovaston DF, A DNA database Report: For consideration by ACPO Crime Committee (Association of Chief Police Officers 1994).
were dropped, an individual’s sample would be destroyed and their profile could not be used in subsequent investigations.\(^\text{804}\)

However, the subsequent removal of an individual’s DNA profile was altered in 2001, by the Criminal Justice and Police Act.\(^\text{805}\) The Act, expanded retention powers beyond those proposed by the Home Office.\(^\text{806}\) For example, it removed the obligation for the police to destroy DNA samples and profiles in the event of there being an acquittal or no prosecution, provided the samples had originally been lawfully obtained.\(^\text{807}\) Under section 82 of the 2001 Act, samples taken under the CJPOA were no longer required to be destroyed and could subsequently be used for “purposes related to the prevention or detection of crime, the investigation of an offence or the conduct of a prosecution”.\(^\text{808}\) This provision, while authorising the retention of all samples taken after the Act went into effect, also provided for the retention of illegally retained samples that should have been destroyed under the previous regime.\(^\text{809}\) This thereby gave the 2001 Act a retrospective effect, by controversially allowing for the retention of any samples and profiles that should have been destroyed under the previous legislation. The retention provisions were laissez-faire, not obligatory, with Chief Constables having discretion to decide whether or not samples and profiles should be retained in individual cases.\(^\text{810}\)

Although indefinite retention became the norm,\(^\text{811}\) the ACPO created an “exceptional case” procedure for removal of DNA (and other police records such as fingerprints and PNC records).\(^\text{812}\) The procedure places an onus on the individual involved to write to the force concerned and elucidate why the request for removal is exceptional. The DNA records once


\(^{805}\) Prior to this act retention of samples had been prohibited under s.64 PACE. In the interim the database had been expanded by the Criminal Evidence (Amendment) Act 1997 in relation to convicted offenders. The Act allowed for retrospective non-consensual sampling of any offender who had been convicted of a sexual or violent offence prior to the establishment of the database and was currently serving a prison offence for that crime. See Redmayne M, “The DNA Database: Civil Liberty and Evidentiary Issues” (1998) Crim LR 437.

\(^{806}\) For example compare Criminal Justice Act s.82 (providing retention of samples from all suspects, regardless of the outcome of the investigation), with Home Office Proposals (proposing retention of volunteered samples only).

\(^{807}\) Prior to the entry into force of s.82, the retention of fingerprints and samples by the police was unlawful as governed by s.64 of the Police and Criminal Evidence Act 1984.

\(^{808}\) Criminal Justice and Police Act s.82(2).

\(^{809}\) Criminal Justice and Police Act s.82(6).

\(^{810}\) The circumstances surrounding removal are discussed at length towards the conclusion of the chapter.


taken are owned by the force where the offence was committed and only a Chief Officer as Data Controller for that force can authorise removal. All applications are examined against a set list of criteria: *inter alia*, a recordable offence no longer exists or any part of the process from arrest through to detention was found to be unlawful. As the National Police Improvement Agency states exceptional circumstances do not include ‘where a person is eliminated from any involvement, or acquitted by a court’. The ultimate decision rests with a Chief Constable for the owning force, who has ultimate authority to exercise his discretion on removal or retention.

The Act also made a significant change in relation to volunteers. For example originally those who had volunteered samples during a mass screening or as part of a particular investigation would only have their sample tested in conjunction with that particular case. However, the Act abolished the requirement of acquiring additional consent before a volunteer’s DNA profile would be added to the database and subject to speculative searching. Controversially, a volunteer could also no longer withdraw their consent.

Despite growing public concern, the sampling and retention regime was expanded further in 2004. As a result of the Criminal Justice Act 2003, the sampling and retention regime was dramatically expanded to include all those *arrested for a recordable offence*. The relevant provisions enabled the police to obtain a non-intimate sample from an individual arrested for a *recordable offence* and subsequently retain the sample and derived profile indefinitely on the NDNAD. Controversially the provision allowed the police to retain the sample and profile indefinitely even if charges were dropped or an individual was acquitted. Under the Criminal Justice Act 2003, a non-intimate sample could be taken without consent so long as the person was ‘in police detention as a consequence of his arrest for a recordable offence’ and the

---


814 Human Rights agencies in the UK have attempted to raise awareness on this issue by encouraging individuals to seek removal of their DNA. For example, see Genewatch UK campaign, ‘Reclaim your DNA” details available at: [http://www.genewatch.org/sub-539488](http://www.genewatch.org/sub-539488). See also Thomas M, ‘How I got my genes deleted” The Guardian (19 March 2009).

815 Criminal Justice and Police Act s. 82(4). The permanent retention of volunteer DNA arguably began to erode the sentiment of civic compliance that had been developing; for example, a growing number of individuals had been volunteering their samples because they wanted to eliminate themselves from any current or future investigations. Since 2001 (under Criminal Justice and Police Act Order 2001), if volunteers give their written consent, their profiles become permanent members of the database population and participate in the daily speculative searches which may match them to the SOC profiles. In October 2007, the NDNAD housed approximately 26,000 volunteer profiles. Finally, the Act expanded the power of the police to use the retained genetic information for speculative searches, allowing the profiles to be juxtaposed against profiles held by certain police forces outside the United Kingdom. Criminal Justice and police Act s.82(6).
police had not yet taken a sample from him or her in the course of the investigation.\textsuperscript{816} This exacerbated the policy that the officer did not have to believe that the sample would confirm or disprove his or her suspicion that the suspect had been involved in the particular offence, i.e., collecting a sample no longer had to be relevant to the investigation of an offence. It significantly decreased the threshold for collection whilst dramatically increasing the range of individuals who could be sampled and whose DNA could be subsequently retained. Unsurprisingly the increased retention policy came under extensive criticism from a variety of commentators. As Lynch \textit{et al} note\textsuperscript{,} Parliamentarians, academics, and civil liberties groups expressed concern that the progressive widening of the net for inclusion and retention of profiles in the NDNAD transcended its original objective of crime prevention and detection.\textsuperscript{817}

Therefore it was not surprising that the controversial retention policy in the UK was subject to legal challenge. S, an 11 year old charged with burglary, and Michael Marper, charged with harassing his partner, were arrested and had their DNA samples and fingerprints taken in relation to the aforementioned offences. Their DNA profiles were placed on the NDNAD under the terms of the 2001 Act. Both S and Marper were subsequently cleared of both offences, S was acquitted while Marper reconciled with his partner and the charges were withdrawn.

However, both applicants had their DNA retained on the NDNAD. Solicitors for both applicants wrote to the Chief Constable of South Yorkshire Police requesting that the fingerprints and samples be destroyed. Both requests were denied and the applicants applied for judicial review of the police decisions, arguing that the powers under section 82 of the 2001 Act were incompatible with Article 8 (right to private life) and Article 14 (discrimination) of the European Convention on Human Rights (ECHR), thus seeking a declaration of incompatibility in that respect. They argued that fingerprint records, DNA profiles and DNA samples obtained by the police should be removed from the NDNAD and destroyed if an individual is found to be innocent. As Heffernan summarises:

\textsuperscript{816} Criminal Justice Act 2003, s.10(2). Even if police had taken a non-intimate sample, they were authorised to take another one if the first proved to be insufficient.


199
For each applicant, the defining legacy of his engagement with the criminal justice system was the indefinite retention by the police of the fingerprints, cellular samples and DNA profiles garnered as a consequence of arrest and the ongoing use of the prints and profiles in speculative searches on the national fingerprint and DNA databases.\textsuperscript{818}

5.4.1. Domestic Courts

The Divisional Court dismissed the applications,\textsuperscript{819} Judge Leveson holding that section 64 (1A) (section 82 2001 Act) was compatible with the ECHR. The Court found that Article 8, which states “Everybody has the right to respect for his private and family life, his home and his correspondence”\textsuperscript{820} had not been engaged in any meaningful way. Leveson stated that:

\[\text{[A] person can only be identified by fingerprint or DNA sample either by an expert or with the use of sophisticated equipment or both; in both cases, it is essential to have some sample with which to compare the retained data. Further, in the context of the storage of this type of information within records retained by the police, the material stored says nothing about the physical make-up, characteristics or life of the person to whom they belong.}\textsuperscript{821}\]

Moreover, even if there had been a violation of Article 8(1) it was a justifiable interference in accordance with the law\textsuperscript{8} and could be deemed necessary in a democratic society\textsuperscript{\textcolor{red}{9}} for the prevention and detection of crime. Article 8(2) states:

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 rights and freedoms of others.\textsuperscript{822}

\textsuperscript{820} Article 8(1) of the European Convention on Human Rights
\textsuperscript{821} R (S and Marper) v Chief Constable of the S. Yorkshire Police (2002) 1 WLR 3223, 3226–28 (AC) (UK)
\textsuperscript{822} Article 8(2) of the European Convention on Human Rights.
In September 2002 the Court of Appeal upheld the decision of the Divisional Court, although it adopted a different line of reasoning.\footnote{2002} The court held that while the retention of the samples engaged Article 8 (1), the interference in this case was justified as being proportionate to the legitimate aim that was trying to be achieved, i.e., public benefit through the prevention, detection and the prosecution of crime.\footnote{2003} On further appeal, the House of Lords also dismissed the appeal of the applicants.\footnote{2004} The majority disagreed with the Court of Appeal's findings, arguing that the mere retention of fingerprints and samples did not constitute an interference with Article 8(1). However, they stated that if this view was erroneous the interference could be justified under Article 8(2) on the grounds of the prevention of crime, the interference being minimal and proportionate to the aim.\footnote{2005}

Baroness Hale of Richmond dissented from the majority strongly arguing that the retention of fingerprints and samples did constitute an interference with a person’s right to respect for their private life under Article 8(1).\footnote{2006} Hale’s reasoning was founded on the concept of informational privacy, which holds that ‘information about a person is in a fundamental way his own’ and as such a person should have the ability to control access to this information.\footnote{2007} Hale accepted that given the social dynamics of modern life we cannot expect to retain control over all our information, however, because a bodily sample contains our ‘entire genetic make-up’ (arguably our most personal information) it engages Article 8(1).\footnote{2008}
Although Baroness Hale did agree with the majority on the issue that if Article 8(1) was engaged it would be justified under the provisions of Article 8(2).\textsuperscript{830}

Given the limited threat presented by the retention of samples, Lord Steyn held that those purposes, namely prevention of crime and the government’s interest in protecting society’s right to be free from crime, were firmly established within Article 8(2).\textsuperscript{831} Lord Steyn cited the outcome of a recent case, labelled \textit{I}, as a justification of the UK DNA retention provisions:

The value of retained fingerprints and samples taken from suspects who were subsequently acquitted is considerable. This is graphically illustrated by a real case which has been referred to as –\textit{F’}. In 1999 a rape and robbery took place. The perpetrator was not known to the victim. DNA was recovered from semen on the victim. A search of the national database showed that the DNA matched –\textit{F’}. The sample should have been destroyed. It was not. Following the decision of the House of Lords in Attorney-General Reference (No.3 of 1999) [2001] 2 AC 91 the prosecution went ahead. –\textit{F’} pleaded guilty to rape and was sentenced to a term of seven years (subsequently reduced on appeal to six years) in a young offender’s institution. But for the wrongly retained sample the offender might have escaped detention, possibly to commit other serious crimes.

Central to the court’s reasoning was the worrying (albeit potentially accurate proposition) that the retention of individual samples will not be of concern unless there is also a retained crime scene sample against which to match it. The ‘innocent have nothing to hide’ tone is clearly evident when Lord Steyn concluded that retention was ‘not disproportionate in its effect because individuals (such as those in the \textit{Marper} case) would be unaffected by the retention unless implicated in a future crime’.\textsuperscript{832}

\textsuperscript{830}Ibid., 2216–2219. Having already decided that the appeal should be dismissed on Art 8(1) grounds, this portion of the court’s opinion was obiter dicta. It is, however, important to overall discussion of this case’s treatment in British courts and the ECHR.
\textsuperscript{831}Ibid. 2210–11.
\textsuperscript{832}Ibid. 2211.
5.4.2. European Court of Human Rights

The applicants then sought recourse to the European Court of Human Rights. They argued that the retention of their fingerprints, cellular samples and DNA profiles interfered with their right to respect for private life (Article 8) for the following reasons:

- The samples were crucially linked to their identity and concerned a type of personal information that they were entitled to keep within their control;

- The retention of genetic identifiers on a criminal investigation database provoked social stigma and psychological implications in the case of children which made the interference with the right to private life all the more pressing in respect of S; and

- The retention of cellular samples contained full genetic information about a person including genetic information about his or her relatives, and an individual was entitled to guarantee that such information which fundamentally belonged to the individual would remain private and not be communicated or accessible without his or her permission.

Prior to Marper, the ECtHR had only examined the issue of DNA retention on one previous occasion. In Van der Velden v The Netherlands, the court approved the retention of DNA samples and profiles of convicted persons as being compatible with Article 8. The applicant was convicted of extortion, and pursuant to section 8 of the DNA Testing (Convicted Persons) Act the public prosecutor ordered that cellular material be taken from the applicant in order for his DNA profile to be obtained. Mr. Van der Velden lodged an objection against the decision to have his DNA profile derived and entered on to the national DNA database. He submitted that his DNA profile had never played any role in the investigation of the offences of which he had been convicted. The domestic courts dismissed the applicant’s objection. The individual then sought recourse to the ECtHR under Article 7 of the Convention that the DNA test and subsequent retention amounted to an extra penalty in addition to the original punishment that he had received upon conviction. He also argued that the collection and retention constituted an unjustifiable interference with his right to respect

833 ECtHR Applications Nos 00030562/04; 00030566/04; S & Marper v UK 48 EHRR 50.
834 The European Court referred the case to the Grand Chamber of the European Court, under Articles 30 and 31 of the European Convention on Human Rights, the Court accepting that the case raised a serious question affecting the interpretation of the Convention.
835 Application No.29514/05 van der Velden v The Netherlands (December 7, 2006).
for his private life (Article 8) and that he had been the victim of discrimination as prohibited by Article 14 of the Convention. The Court rejected the applicant's claims as being 'manifestly ill-founded' as the interference was 'in accordance with the law' that set out a limited range of retention criteria. As the Court noted, [it] does not consider it unreasonable for the obligation to undergo DNA testing to be imposed on all persons who have been convicted of offences of a certain seriousness. Thus the court held that the compilation and retention of a DNA profile served the legitimate aims of the prevention of crime and the protection of the rights and freedoms of others. Importantly, as the police established that DNA retention met a pressing social need in relation to crime detection, such retention was deemed proportionate. Additionally, individual protection was also afforded by the Dutch Data Protection Commission. Interestingly the ECtHR in Van der Velden noted the potential benefits of being retained on a database:

Finally, the Court is of the view that the measures can be said to be 'necessary in a democratic society'. In this context it notes in the first place that there can be no doubt about the substantial contribution which DNA records have made to law enforcement in recent years. Secondly, it is also to be noted that while the interference at issue was relatively slight, the applicant may also reap a certain benefit from the inclusion of his DNA profile in the national database in that he may thereby be rapidly eliminated from the list of persons suspected of crimes in the investigation of which material containing DNA had been found.

In contrast to the ruling in Van der Velden, the question to be assessed in Marper involved non-conviction privacy rights as opposed to the rights of those convicted of an offence. The Court began with its standard methodology of assessing whether Article 8 had been infringed. Essentially the court examines whether the alleged intrusion engages Article 8(1); if it does the court will then assess whether the intrusion is justified under Article 8(2), focusing on whether it is 'prescribed by law' and if it is 'necessary in a democratic society'. In short, these issues mean that the infringement must be clearly outlined by statute or through case law (predicated on the assumption that law should be both accessible and foreseeable) and

---

836 The Court found that the Article 7 complaint was incompatible ratione materiae.
837 Application No.29514/05 van der Velden v The Netherlands (December 7, 2006).
838 Ibid.
839 Under Dutch law the data of persons convicted of an offence carrying a statutory sentence of six years or more is retained for thirty years. For less serious offences carrying sentences of up to six years, DNA profiles may be retained for a minimum period of twenty years.
840 See Application No.29514/05, van der Velden v The Netherlands (December 7, 2006).
that any infringement should also be proportionate to the aim being pursued (such as the prevention of crime). \(^{841}\)

### 5.4.3. Article 8(1)

The ECtHR first considered Article 8(1) and assessed whether the interference engaged an individual's right to respect for a private life. According to the ECtHR, the protection of the personal data, particularly medical data, is of fundamental importance to a person's enjoyment of his or her right to respect for private life. \(^{842}\) The Court noted that "private life" was an extremely broad term which covered both the physical and psychological integrity of the person and that the storage of data relating to the private life of an individual was capable of amounting to interference under Article 8(1). \(^{843}\) Similarly to Baroness Hale in the HOL, the court focused upon the concept of informational privacy (the right to protect one's personal information from disclosure to others). \(^{844}\) Importantly from an Article 8 perspective, the right to private life is not absolute and may be subject to proportionate interference by the state in pursuit of a legitimate aim such as the prevention of disorder or crime. \(^{845}\) Previous

---

841 Stone R, Textbook on Civil Liberties & Human Rights (8th edn, Oxford University Press 2010), 177.
842 MS v Sweden, ECtHR Appl 20837/92 (27 August 1997).
843 In Shimovolos v Russia (Application no.30194/09, [2011] ECHR 987) the applicant's name was registered in the Surveillance Database which collected information about his movements, by train or air, within Russia. Having regard to the previous jurisprudence the Court held that the collection and storing of that data amounted to an interference with the individual's private life as protected under Article 8(1) of ECHR. In the case, the ECtHR held that private life is a broad term not susceptible to exhaustive definition. Article 8 is not limited to the protection of an "inner circle" in which the individual may live his own personal life as he chooses and to exclude from there entirely the outside world not encompassed within that circle. It also protects the right to establish and develop relationships with other human beings and the outside world. Private life may even include activities of a professional or business nature (see Niemietz v Germany (1993) 16 EHR 97; Shimovolos v Russia (Application no.30194/09, [2011] ECHR 987) and Halford v. the United Kingdom (1997) 24 EHR 333. There is, therefore, a zone of interaction of a person with others, even in a public context, which may fall within the scope of "private life" (see Perry v the United Kingdom (2004) 39 EHR 76; Peck v the United Kingdom (2003) 36 EHR 41 and PG and JH v the United Kingdom [2002] Crim LR 308; The ECtHR also found that the systematic collection and storing of data by security services on particular individuals constituted an interference with these persons' private lives, even if that data was collected in a public place (see Peck v the United Kingdom (2003) 36 EHR 41 and PG and JH v the United Kingdom [2002] Crim LR 308) or concerned exclusively the person's professional or public activities (see Amann v Switzerland (2000) ECHR 27798/95 and Rotaru v Romania (2000), ECHR 28341/95 . Collection, through a GPS device attached to a person's car, and storage of data concerning that person's whereabouts and movements in the public sphere was also found to constitute an interference with private life (see Uzun v Germany (2010) ECHR, 35623/05).
844 More specifically the concept of informational privacy has been held to include a wide range of issues, for example see Malone v United Kingdom (1985) 7 EHR 14 (telephone tapping); Gaskin v United Kingdom (1990) 12 EHR 36 (access to file regarding childhood period in care); Z v Finland (1998) 25 EHR 371 (disclosure of information concerning HIV infection); Peck v United Kingdom (2003) 36 EHR 41 (disclosure of CCTV footage to broadcast media); Perry v United Kingdom (2004) 39 EHR 76 (recording and use of video in police station).
ECtHR jurisprudence has confirmed the state’s right to obtain and retain information such as police registers, photographs and medical records.

The three types of information at issue in Marper (cellular samples, DNA profiles and fingerprints) all constitute ‘personal data’ under the scope of data protection regimes. When conducting the assessment the court considered the privacy implications of the retention of fingerprints separately from the retention of samples and DNA profiles. The purpose of this distinction is to ground the assessment in the nature and extent of the private information that can be garnered from the particular material and the potential use (and future use) that such information may be put to. Thus the court acknowledged the varying degrees of potential interference, emphasising that the retention of DNA samples raised significantly greater ethical issues because of the sensitive material contained within a genetic sample.

**DNA sample**

Annas has argued that the information contained within a cellular sample is uniquely private and should be separated from other biological identifiers because it is similar to a coded ‘future diary’. As the code is deciphered, information may be revealed not only about present realities, such as familial relationships, ethnic origin and susceptibility to certain diseases, but also future events such as life expectancy and behavioural patterns. The court cited with approval this view in Van der Velden v Netherlands, where it was accepted that potential future use of cellular material was sufficiently intrusive to constitute an interference with the right to respect for private life and thus engaged Art 8. Focusing on the content of

---

849 Notably the Council of Europe Data Protection 1981 and the UK Data Protection Act (giving effect to Directive 95/46 on the protection of individuals with regard to the processing of personal data and the free movement of such data, see [1995] OJ L281/31).
850 The court found that fingerprints contain unique information about the particular individual, and their retention without the individual’s consent could not be regarded as insignificant, despite the views of the UK courts on this matter.
851 With regard to DNA profiles, such profiles contained substantial amounts of unique personal data and in the Grand Chamber’s view the possibility created by DNA profiles for drawing inferences about ethnic origin made their retention all the more sensitive and susceptible to affecting the right to private life.
853 Application No.29514/05. The application was declared inadmissible on the grounds that the interference was justified under Article 8(2).
854 48 EHRR 50, 72 (this correlates with the view of Baroness Hale in the House of Lords). As noted already the Court went on to accept the submission of the Dutch government that this interference with the right to respect for private life was justified under Art 8(2).
the data, the court noted that the biological samples involved were of a ‘highly personal nature’ because they contained personal data unique to the specific individual. Thus the Court held that the retention of cellular samples amounted to an interference with the applicants’ right to respect for their private lives under Article 8(1) of the Convention. The Court rejected the argument of the UK government that the theoretical future use of DNA material could not compromise present day application. The court placed weight on the rapidly evolving developments in genetics, holding that the possibility that privacy rights could be impacted in yet unforeseen ways is a relevant factor for current consideration.

**DNA profile**

Retention of a DNA profile required a more complex examination. A DNA profile only reveals a snapshot of an individual’s genetic information, thus it does not present ethical issues equivalent to those surrounding the retention of a DNA sample. On this issue, the UK government argued that a DNA profile was akin to a barcode or numerical sequences intelligible only to the expert eye and then only with the aid of specialist computer equipment. However, the Court was not persuaded that the DNA profiling was limited to neutral identification, particularly as the UK government had conceded that DNA profiles could be used to identify familial relationships. The familial capacity (and also the ethnic prediction capacity) of a DNA profile were deemed sufficiently intrusive for finding that the retention of a profile engaged Article 8(1).

**Fingerprints**

The court then considered the issue surrounding the retention of fingerprints. In contrast to a DNA profile, which can be derived from a minute sample of biological material located at a crime scene, a fingerprint is harder to obtain from a crime scene and its utility is heavily dependent on the quality of the impression and the surface upon which it is left. In addition, a

---

855 Ibid. (this correlates with the view of Baroness Hale in the House of Lords).
856 48 EHRR 50, para. 71.
858 48 EHRR 50, para. 76 citing the Data Protection Convention and the UK Data Protection Act, which list personal data revealing ethnic origin as a special category of sensitive data warranting an increased level of protection.
859 Ibid. para. 75. The judgment held, ‘The frequency of familial searches, the safeguards attached thereto and the likelihood of detriment in a particular case are immaterial in this respect. This conclusion is similarly not affected by the fact that, since the information is in coded form, it is intelligible only with the use of computer technology and capable of being interpreted only by a limited number of persons.’
fingerprint is exclusively a biological identifier; it does not contain (thereby it cannot reveal) genetic information similar to a DNA sample or a DNA profile. On this basis the European Commission on Human Rights has previously held that the taking and retention of fingerprints did not necessarily involve an interference with the right to respect for private life. Therefore one of the important elements of the Marper judgment is to distance itself from this original position and to extend the protection of informational privacy to fingerprints.

As Heffernan has observed, the court justified this move as a natural progression of another ECtHR authority. In PG v United Kingdom the court held that the recording by the police of a person’s voice interfered with the right to respect for private life because an individual can be identified by a voice recording. In contrast, in Freidl v Austria, the retention of photographs taken anonymously at a public demonstration but not processed to identify the individuals in the photograph did not engage Article 8(1). In Marper, the court located fingerprints within the gap between voice recordings and photographs (holding that a fingerprint is a unique biometric identifier applicable to a wide range of circumstances). The Court held that the retention of fingerprints in police databases without the consent of the person concerned was neither neutral nor insignificant and may potentially result in „important private life concerns”.

Widening the concept of informational privacy

The Court’s stance in Marper imposes a wide application of the concept of informational privacy. While it noted the serious ethical issues surrounding the retention of samples, in reality it drew no significant distinction between the three categories and their applicability to Article 8(1). This distinction (or lack of) has potentially broad ramifications for the retention of „personal information” by national authorities. As Heffernan importantly notes:

---

862 Ibid. 491.
865 48 EHRR 50, 84-85. Arguably these issues are exacerbated, in the Marper case, by the placement of fingerprints on a national database that was continually subject to speculative searches aimed at linking suspects to crime scenes.
Moreover, by analogising fingerprints with photographs and voice samples, the Court ring fenced within the protection of Art 8 (1) the broad gamut of criminal identification techniques. Whereas the taking and retention of cellular samples and DNA profiles have attracted controversy, the judgment suggests that the permanent and systematic recording by police authorities of other forms of personal information for purposes of criminal identification must also be justified by reference to the criteria in Art 8(2).866

Often debates surrounding informational privacy concern the actual or potential use to which the retained material can be put. The potential for abuse has featured heavily in the debates surrounding the potential retention of a DNA sample and/or a DNA profile.867 Unfortunately, the ECtHR in Marper did not engage in a thorough debate on the issue of the use of private information. Instead of attempting to establish a useful framework or threshold for the use of private information, the court held that the ‘mere’ collection and retention of the information (regardless of use) satisfied the threshold to engage Article 8(1), which as Heffernan alludes presents interesting questions now for all personal information that is currently retained by police.868

It is submitted that the ‘reflective’ regulatory framework postulated by this thesis would attempt to fill such a gap. The framework would formulate an all-inclusive approach incorporating the collection, retention and potential use of DNA during a criminal investigation. A primary benefit of such an approach is that it would promote public debate on the shifting boundaries of concepts (such as informational privacy) and would aid in producing a framework that has the capacity to adapt to changes and developments in technology but also endeavours to capture the values and boundaries of the society in which it is operating.

5.4.4. Article 8(2)

Therefore having established a prima facie violation of Article 8(1) the Court had to consider whether that interference was _in accordance with the law_,869 pursued a legitimate aim and whether the means to achieve this aim were _necessary in a democratic society_ for the prevention and detection of crime as stipulated under Art 8(2). The crux of this decision was based on determining the proportionality of the intrusion by assessing whether _the action taken is in response to a pressing social need, and that the interference with the rights protected is no greater than is necessary to address that pressing social need_.870 Importantly, the Court noted that it was not examining the issue of DNA retention in general but in relation to the applicants in this case, who had been suspected but not convicted of a criminal offence.871

In assessing the issue, the ECtHR placed a major emphasis on the relevant Council of Europe texts involving the retention of biometric data. It focused particularly on the Committee of Ministers’ Recommendation R (92)1 in relation to the use of deoxyribonucleic acid (DNA) analysis within the framework of the criminal justice system (adopted 10 February 1992) _which stresses the need for an approach which discriminates between different kinds of cases and for the application of strictly defined storage periods for data, even in more serious cases_.872 The ethos of balance and respect for individual rights is evident from the explanatory memorandum accompanying the Recommendation;

_The Council of Europe has interested itself for a number of years in the impact of new technologies on matters relating to human rights and fundamental freedoms. It has done so in the belief that, on the one hand, the evolution and use of these new technologies are necessary and justified in the interest of the progress of society but, on the other hand, that the use of such technologies sometimes carries an inherent risk of infringing human rights and fundamental

---

869 The Court was equivocal on the issue of whether the interference was _in accordance with law_ but was not persuaded of the need to resolve the issue definitely for the case. In contrast, the court readily accepted that the retention by the police of fingerprint and DNA data pursued the legitimate purpose of the detection of future crime which fell, in turn, within the concept of _the prevention of disorder or crime_ in Art 8(2), see _S and Marper v United Kingdom_ (2008) 25 EHRR 50, para. 100.
871 48 EHRR 50, para. 10.
872 _S and Marper v UK_ 48 EHRR 50, paras 109–110.
freedoms if the proper balance is not struck between opposite interests in accordance with what is necessary in a democratic society.

The ECtHR noted that it was important to focus on R(92)(1) as the recommendation was formulated by the Council of Ministers in conjunction with the European Convention on Human Rights and the Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (ETS No. 108).\textsuperscript{873} Elaborating the Court noted that when drafting this document the Council of Ministers were: _Mindful ... that the introduction and use of these techniques should take full account of and not contravene such fundamental principles as the inherent dignity of the individual and the respect for the human body, the rights of the defence and the principle of proportionality in the carrying out of criminal justice._\textsuperscript{8} It also highlighted the importance of paragraph 7, which outlines the data protection provisions that should accompany the implementation and use of DNA within the criminal justice system: _The collection of samples and the use of DNA analysis must be in conformity with the Council of Europe’s standards of data protection as laid down in the Data Protection Convention No. 108 and the Recommendations on data protection and in particular Recommendations No. R (87) 15 regulating the use of personal data in the police sector._\textsuperscript{8}

In relation to the collection of information, the Court referred to Principle No. 2 in Recommendation No. R (87) 15, which details the use of personal data in the police sector. The principle outlines that the collection of personal data for police purposes should be minimised and should be limited to situations where such retention is necessary for the prevention of a _real danger_ or the suppression of crime.\textsuperscript{874} Any exceptions to these limitations should be stipulated under national legislation. Importantly, particularly from the UK context, the principle, excludes open-ended, indiscriminate collection of data by the police. Principle 7 states:

\begin{quote}
  Measures should be taken so that personal data kept for police purposes are deleted if they are no longer necessary for the purposes for which they are
\end{quote}

\textsuperscript{873} Convention ETS No. 108 of the Council of Europe for the Protection of Individuals with Regard to Automatic Processing of Personal Data (of 1981) – this was the first legally binding international instrument with worldwide significance on data protection. For further information see http://www.coe.int/t/dghl/standardsetting/DataProtection/History_more_en.asp.

\textsuperscript{874} _Real danger_ is to be understood as not being restricted to a specific offence or offender but as including any circumstance where there is reasonable suspicion that serious criminal offences have been or might be committed to the exclusion of unsupported speculative possibilities.
stored. For this purpose, consideration shall in particular be given to the following criteria; the need to retain data in the light of the conclusion of an inquiry into a particular case; a final judicial decision, in particular an acquittal; rehabilitation; spent convictions; amnesties; the age of the data subject, particular categories of data.

The Court also noted paragraph 8 of Recommendation No. R (92)1. Paragraph 8 outlines criteria for the storage and retention of DNA information and is worth quoting at length:

Samples or other body tissue taken from individuals for DNA analysis should not be kept after the 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. Measures should be taken to ensure that the results of DNA analysis are deleted when it is no longer necessary to keep it for the purposes for which it was used. The results of DNA analysis and the information so derived may, however, be retained where the individual concerned has been convicted of serious offences against the life, integrity or security of persons. In such cases strict storage periods should be defined by domestic law.

Samples and other body tissues, or the information derived from them, may be stored for longer periods;

-when the person so requests it; or

-when the sample cannot be attributed to an individual, for example when it is found at the scene of a crime;

-where the security of the state is involved, the domestic law of the member state may permit retention of the samples, the results of DNA analysis and the information so derived even though the individual concerned has not been charged or convicted of an offence. In such cases strict storage periods should be defined by domestic law.

It is noticeable that the UK retention provisions failed to implement the majority of the provisions outlined above, particularly paragraph 8 of R (92) 1. The applicants’ samples and profiles were kept after being arrested for relatively minor offences. The samples and profiles
were retained even though neither individual was convicted, and there were no clear guidelines for storage period. Given the fact that paragraph 8 was constructed with regard to the ECHR, it is submitted that it is of little surprise that the UK approach was deemed to contravene Article 8. The explanatory memorandum to paragraph 8 adds weight to this argument:

The working party was well aware that the drafting of Recommendation 8 was a delicate matter, involving different protected interests of a very difficult nature. It was necessary to strike the right balance between these interests. Both the European Convention on Human Rights and the Data Protection Convention provide exceptions for the interests of the suppression of criminal offences and the protection of the rights and freedoms of third parties. However, the exceptions are only allowed to the extent that they are compatible with what is necessary in a democratic society.

Importantly, the explanatory memorandum provided guidance on circumstance where the general rule that DNA material must be deleted after use may be justifiably circumvented:

However, the working party recognised that there was a need to set up data bases in certain cases and for specific categories of offences which could be considered to constitute circumstances warranting another solution, because of the seriousness of the offences. The working party came to this conclusion after a thorough analysis of the relevant provisions in the European Convention on Human Rights, the Data Protection Convention and other legal instruments drafted within the framework of the Council of Europe. In addition, the working party took into consideration that all member states keep a criminal record and that such a record may be used for the purposes of the criminal justice system (see Recommendation No. R (84) 10 on the criminal record and rehabilitation of convicted persons). It took into account that such an exception would be permissible under certain strict conditions:

- when there has been a conviction
- when the conviction concerns a serious offence committed against the life, integrity and security of a person;
- the storage period is limited strictly;

- the storage is defined and regulated by law;

- the storage is subject to control by Parliament or an independent supervisory body.

While the relevant European instruments cannot bind the court, the fact that the Council of Ministers made these recommendations _after a thorough analysis of the relevant provisions in the European Convention of Human Rights, the Data Protection Convention and other legal instruments drafted within the framework of the Council of Europe_ weighed heavily during the court's examination of the UK retention provisions.\(^875\)

Having considered the UK approach in light of the above instruments and a number of other factors (such as the unique position of the UK in indefinitely retaining the DNA information of those not convicted of an offence,\(^876\) the sensitive information involved in a DNA sample, the potential stigmatising impact of prolonged retention (citing the particular impact it may have on minors)\(^877\) on a state repository and the lack of adequate procedures to seek

\(^875\) 48 EHRR 50, para. 101.

\(^876\) The Court observed _the only jurisdictions within the Council of Europe to allow the indefinite retention of fingerprint and DNA material of any person of any age suspected of any recordable offence_. See _S and Marper v UK_ 48 EHRR 50, para. 110. Within other Council of Europe countries the collection and subsequent retention of a DNA sample (and its relevant DNA profile) is predominately limited to those individuals suspected of committing a serious offence: Austria (serious assaults), Belgium (serious crimes – mainly sexual assaults and murder); France (mainly serious crimes against the person and sexual assaults); the Netherlands (offences carrying sentences exceeding four years); Norway (sexual abuse, crimes against life and health and crimes posing danger to the public); and Sweden (offences carrying sentences exceeding two years). The DNA retention policies of member states also vary. Generally the majority of countries will immediately remove an individual from the database if they are acquitted of an offence, although exceptions exist (e.g. Finland (individual removed from database one year after acquittal); Denmark (removal after ten years if acquitted); and Switzerland (removal after five years if acquitted)). Countries such as Austria, Finland and the Netherlands also have procedures to remove an individual from their databases after a specified period of time even after they have been convicted of a sufficiently serious offence to warrant entry on their database in the first instance. See Williams, R. and Johnson, P, _Forensic DNA Databasing: A European Perspective_ (Interim Report, June 2005). Available online: [http://www.dur.ac.uk/resources/sass/WilliamsandJohnsonInterimReport2005-1.pdf](http://www.dur.ac.uk/resources/sass/WilliamsandJohnsonInterimReport2005-1.pdf). An Excel document detailing detailed figures on each state is also available see: [http://www.dur.ac.uk/p.j.johnson/Euopean_Database.xls](http://www.dur.ac.uk/p.j.johnson/Euopean_Database.xls).

\(^877\) _S and Marper v UK_ 48 EHRR 50, para. 124. The Court cited with approval the recommendations of the Nuffield Council of Bioethics on its concerns in relation to the indefinite retention of the bio-information of minors on the database. (See Nuffield Council on Bioethics, _The Forensic Use of Bio-information: ethical issues_ (London: Nuffield Council on Bioethics, 2007). Both the Nuffield report and the ECtHR in Marper (para. 55) noted the difficulty of reconciling the indefinite retention of minors’ DNA records on the database with the 1989 UN Convention on the Rights of the Child. Article 40 of the Convention states that the right of every child alleged of, accused of, or recognised as having infringed the penal law is to be treated in a manner consistent with the promotion of the child's sense of dignity and worth, which reinforces the child's respect for the human rights and fundamental freedoms of others and which takes into account the child's age and the desirability of promoting the child’s reintegration and the child’s assuming a constructive role in society. For example, children have general been afforded a greater level of privacy during the criminal process, see _T v the United_
the ECtHR held that the _blanket and indiscriminate nature of the powers of retention of fingerprints, cellular samples and DNA profiles of persons suspected but not convicted of offences_ failed _to strike a fair balance between the competing public and private interests_ and overstepped _any acceptable margin of appreciation in this regard_.

However, while the _Marper_ decision is often used by those who criticise the establishment of a DNA database, it is pertinent to note that while the court was severely critical of the UK approach, importantly, it recognised the legitimacy of a DNA database as an effective policing tool for combating crime. It made a number of observations on the concept of a proportionate regime in the area of DNA retention, a consideration of which is useful for assessing the current barometer for a retention regime that would be amenable under Article 8 of the ECHR. Thus the following limitations would aid in achieving an element of proportionality in pursuit of the legitimate aim of preventing and investigating crime:

- Limiting the retention period;
- Further limiting the retention period for those categorised as children under the law;
- Correlating the retention period to the seriousness of the offence for which the individual was arrested;
- Recognising that the retention of cellular samples was particularly intrusive; and

---

878 The ECtHR placed a heavy reliance on the limited procedures that were available to individuals to seek removal of their information from the database. The court stated that there was a _lack of independent review of the justification for the retention according to defined criteria_. The ECtHR held that the _exceptional case_ approach was arbitrary and unsatisfactory and that for retention to be justified it should be predicated upon criteria such as offence seriousness, previous arrests, and the strength of suspicion against the person. Although as Waller L.J. held in the Court of Appeal _at retention stage consideration of the circumstances of the offence of which the person has by this stage been acquitted seems to me almost certainly irrelevant_. See _R (S and Marper) v Chief Constable of the S. Yorkshire Police_ (2002) 1 WLR 3223, 3242–43 (AC) (UK).

879 48 EHRR 50, para. 125. The absolute condemnation of the UK approach is evident in the following passage: _The Court is struck by the blanket and indiscriminate nature of the power of retention in England and Wales. The material may be retained irrespective of the nature or gravity of the offence with which the individual was originally suspected or the age of the suspected offender; fingerprints and samples may be taken, and retained, from any person of any age, arrested in connection with a recordable offence, which includes minor or non-imprisonable offences. The retention is not time-limited; the material is retained indefinitely whatever the nature or seriousness of the offence of which the person was suspected. Moreover, there exist only limited possibilities for an acquitted individual to have the data removed from the nationwide database or the materials destroyed; in particular, there is no provision for independent review of the justifications for the retention according to defined criteria, including such factors as the seriousness of the offence, previous arrests, the strength of the suspicion against the person and any other special circumstances_. Ibid. para. 119.

880 Ibid. paras 105–106.
* Providing an independent process for an individual to appeal against his or her retention, during which the reviewer would consider the seriousness of the offence [of which the person was suspected], previous arrests, the strength of the suspicion against the person and any other special circumstances.881

The court specifically referred to the position in Scotland where the retention by the authorities of the DNA of unconvicted persons is confined to retaining the DNA of adults who have been charged with violent or sexual offences and, even then, for a period of three years,882 which can be extended for a further two years with the consent of a Sheriff, where it is demonstrated that there is reasonable grounds for retention.883 The Court held that the Scottish system is notably consistent with Committee of Ministers’ Recommendation R (92) 1, which stresses the need for an approach which discriminates between different kinds of cases and for the application of strictly defined storage periods for data, even in more serious cases.

881 48 EHRR 50, para. 119.
882 The situation in Scotland, which has a separate legal system and policing tradition, differs from that in England and Wales. The principal legislation is the Criminal Procedure (Scotland) Act 1995, as amended by the Criminal Justice (Scotland) Act 2003 and the Police, Public Order and Criminal Justice (Scotland) Act 2006. Whereas it was once necessary to obtain the authorisation of a police inspector to take mouth swabs, these can now be taken on arrest by a police constable. However, the samples and resulting profiles must be destroyed if the individual is not convicted or is granted an absolute discharge. A recent qualification provides that biological samples and profiles may be retained for three years, if the arrestee is suspected of certain sexual or violent offences including rape, indecent assault and lewd and libidinous behaviour, and murder, assault and reckless conduct causing actual injury even if a person is not convicted. (Section 83 of the 2006 Act, adding s.18(A) to the 1995 Act.) Thereafter, samples and information should be destroyed unless a Chief Constable applies to a Sheriff for a two year extension. The onus is on the police to show reasonable grounds for retention. This application must be within three months of the due destruction date. The law does not preclude repeat requests for further extensions of two years. A final appeal is possible to a Sheriff Principal. Another distinguishing feature of the Scottish position is that while volunteer samples can be retained with consent as in England, this consent can be withdrawn at any time, requiring destruction of the relevant sample and related information, s.56 of the 2003 Act. For further information on Scottish DNA retention policy see Campbell L, ‘The Scottish DNA database and the Criminal Justice and Licensing (Scotland) Bill” (2010) 14(2) Edinburgh Law Review 290; see also Johnson P and Williams R, ‘DNA and Crime Investigation: Scotland and the UK National DNA Database” (2004) 10 Scottish Journal of Criminal Justice Studies 75; Nuffield Council on Bioethics Report, The forensic use of bio-information: ethical issues (London, 2007), 10-11, available at: http://www.wwwnuffieldbioethics.org. There have been a number recent reports in Scotland on the issue of DNA retention see Consultation on the Acquisition and Retention of DNA and Fingerprint Data in Scotland, CRES 1058 (Edinburgh: Scottish Government), Fraser Report on Retention of DNA and Fingerprint Data: Government’s response (Edinburgh: Scottish Government); Acquisition and Retention of DNA and Fingerprint Data in Scotland: Consultation Report (Edinburgh: Scottish Government). For further information on the Scottish database see Scottish Police Services Authority, available at: http://www/spsa.police.uk/services/forensic_services/dna
Thus the ECtHR recommendation, choice or ‘blueprint’ for a DNA database (in relation to not subject to a conviction) is the time limit model for those arrested for serious offences.\textsuperscript{884} Moreover recent ECtHR jurisprudence has also recently legitimised limited DNA retention regimes for those convicted of an offence, see \textit{Van der Velden v the Netherlands}\textsuperscript{885} and \textit{W v the Netherlands}.\textsuperscript{886}

5.5. \textit{Marper}: Flawed justifications

Thus, given the ECtHR approval of the Scottish system it is unsurprising to see England and Wales (and Northern Ireland) have since adopted similar DNA retention criteria. In February 2011 the UK government introduced the Protection of Freedoms Bill.\textsuperscript{887} In relation to DNA profiles and fingerprints, the Bill proposes:\textsuperscript{888}

---

\textsuperscript{884} In addition to the following, differentiation between minors and adults provides an independent mechanism to appeal the retention of information and has established sufficient safeguards to protect the information.

\textsuperscript{885} Application no.20689/08, 20 January 2009. Shortly after the \textit{Marper} judgment, the issue of DNA retention was also examined in \textit{W v the Netherlands}. In 2007 the individual, who was a minor, was found guilty of causing grievous bodily harm in the Netherlands. The applicant was sentenced to a suspended term of juvenile detention, a community service order of 30 hours and a training order of 20 hours. As a result of the conviction under the DNA Testing (Convicted Persons) Act, the public prosecutor sought a DNA sample from the individual, to obtain a DNA profile to be uploaded to the national database. The applicant objected and argued that in accordance with Article 8 (and Article 40 of the Convention on the Rights of the Child 1989), the personal interests of a minor should be balanced against the general interests of society when it was being considered whether to apply the Act to that minor. The applicant submitted that regard should be had to the age of the convicted person at the time of the commission of the crime, the seriousness of the offence, the circumstances under which the offence had been committed, the risk of the convicted person reoffending and other personal circumstances of the convicted person. However, the applicant’s objections were dismissed in the national courts. The issue was also dismissed in the ECtHR. Declaring the application inadmissible the Court found that, contrary to \textit{Marper}, the \textit{W} case involved the collection and retention of an individual’s DNA who was convicted of a criminal offence. The court confirmed that the DNA Testing Act satisfied the proportionality requirements of Article 8, citing that material can only be taken from persons convicted of an offence of a certain gravity, and that the DNA records can only be retained for a prescribed period of time that is dependent on the length of the statutory maximum sentence that can be imposed for the offence that has been committed. The Court therefore held that the provisions of the Act contain appropriate safeguards against blanket and indiscriminate retention of DNA information. The Court then noted that because the DNA material is stored anonymously and encoded, and the applicant will only be confronted with his stored DNA record if he had previously committed another criminal offence or commits one in the future, the Court argued that there was no reason to diverge from its findings in \textit{Van der Velden} because the applicant in this case was a minor.

\textsuperscript{887} The Freedom Bill amends the recently enacted Crime and Security Act 2010. The Crime and Security Act would have replaced the policy, introduced in 2001, of indefinite retention save in exceptional circumstances, with a single limit of six years for DNA profiles and three years for DNA samples from those arrested but not convicted. However, this section of the Act was not implemented. The Crime and Security Act was passed during the legislative ‘wash up’ period before the imminent general election in May 2010. The DNA retention provisions of the 2010 Act were subject to substantial criticism. For example, in a 2010 report the Joint Committee on Human Rights noted: The Government’s response to this case has been inadequate both in terms of the approach it has adopted to implementation and in relation to the substance of the proposals in the Crime and Security Bill. While we welcome the Government’s decision to act with haste, we are concerned that in this case, the Government’s priority has not been to remove the incompatibility identified by the European Court of Human Rights, but to ensure the continued operation of the National DNA Database with as few changes as possible to its original policy … There are a number of positive aspects to the Government’s proposals in the
Fingerprints and DNA profiles obtained from individuals arrested or charged with a minor offence will be destroyed ‘as soon as reasonably practical’ following either a decision not to charge or following acquittal;

The fingerprints and DNA of individuals can be retained for a short period until a speculative search of the relevant databases has been carried out;

In the case of individuals charged for, but not convicted of, a serious offence, fingerprints and DNA profiles may be retained for three years, with a possible two year extension if approved in court;

Fingerprints and DNA profiles will be retained for individuals convicted of an offence or given a fixed penalty notice and for extended retention on national security grounds (The retention of those samples would be initially for three years, with the power to ask a judge to approve two year extensions);
For individuals convicted of an offence committed when they were under 18, DNA can be retained indefinitely only if the custodial sentence is five years or more;

DNA given by individuals voluntarily, for example to eliminate them from an investigation, will be destroyed as soon as it has fulfilled the purpose for which it was taken;

DNA samples, for example saliva or blood specimens, must be destroyed as soon as a DNA profile has been satisfactorily derived from the sample and, in any event, within six months of the taking of the sample.\(^{889}\)

\(^{889}\) The Bill puts the DNA Database and the National DNA Database Strategy Board on a statutory footing for the first time. Interestingly, the government also announced plans to create a new watchdog, the Commissioner for the Retention and Use of Biometric Material, to oversee and possibly reject applications to retain DNA profiles on national security grounds. For an overview and consideration of the recent UK developments see McCartney C, “Of weighty reasons and indiscriminate blankets: The retention of DNA for forensic purposes” (2012) 51(3) The Howard Journal of Criminal Justice 245–260. The issue of DNA retention has recently been subject to review by the UK Supreme Court (which recently replaced the House of Lords as the highest appellant court), in \(R\) (on the application of \(GC\)) (FC) (Appellant) \(v\) The Commissioner of Police of the Metropolis (Respondent) and \(R\) (on the application of \(C\)) (FC) (Appellant) \(v\) The Commissioner of Police of the Metropolis (Respondent) [2011] UKSC 21, both cases were heard concurrently. In 2007, GC was arrested on suspicion of common assault on his girlfriend. The police obtained a DNA sample, fingerprints and photographs subject to the relevant PACE provisions, GC was subsequently acquitted. In 2009, C was arrested on suspicion of rape, harassment and fraud. Similarly his biometric details were taken in accordance with the provisions of PACE. The applicant’s charges in relation to fraud and harassment were dropped and he was subsequently acquitted of rape at trial. On conclusion of their proceedings both appellants requested the destruction of personal information that had been acquired during their respective criminal investigations. Their requests were refused as there were no exceptional circumstances within the meaning of the ACPO guidelines. The appellants issued proceedings for judicial review of the retention of their data based on the fact that as a result of the \(Marper\) decision by the ECtHR, the retention of their personal data was incompatible with Article 8. When presented to the Divisional Court, the court held that it was bound by precedent thus affirming the House of Lords decision in \(Marper\), and it dismissed the applications for judicial review and granted a certificate that the cases were appropriate for a leapfrog appeal to the Supreme Court. The Supreme Court, by a majority, ruled in favour of the applicants. Lord Dyson, providing the lead judgment of the majority, held that it is ‘common ground’ that \(Marper\) UK necessitated overruling. The Court also agreed that because of the ECtHR in \(Marper\), the indefinite retention of the appellants’ data under the current retention policy (which was based upon ACPO guidelines) was unlawful as it was incompatible with Article 8 of the ECHR. Therefore the central question to be addressed by the court in these appeals was how to proceed on this issue. Section 3 of the Human Rights Act 1998 (‘HRA’) requires the court, insofar as it is possible to do so, to interpret legislation in a way which is compatible with Convention rights. The Court held that it was uncontroversial to view the statutory purpose of section 64(1A) as to remove the requirement to destroy data after it had served its immediate purpose so as facilitate the creation of a large collection of DNA profiles, i.e. a large DNA database. Such a database was predicated on the belief that it would aid in the preventing, investigating and prosecution of crime. Importantly though, the court held that Parliament did not intend (at the time of passing the 2001 Act) that, save in exceptional circumstances, the data should be retained indefinitely. Rather, Parliament conferred a discretion on the police to retain data, the court arguing that the natural meaning of the word ‘may’ in section 64(1A) is ‘permissive not mandatory’. The court reasoned that there was no reason to assume that Parliament intended for the relevant legislation to be enacted in a disproportionate manner so as to violate Article 8. Holding that the police were entrusted with implementing the statutory regime, thereby theoretically there is no reason why the police, in conjunction with the Secretary of State, should be unable to create workable guidelines for the implementation of these provisions. As a result of this, it is possible to interpret section 64(1A) in a way which is compatible with Article 8 of the ECHR as interpreted by the ECtHR in \(Marper\). As a result of this the court
The proposed DNA retention criteria in England and Wales outlined under the Protection of Freedoms Bill is similar to the recent provisions outlined in Northern Ireland.\textsuperscript{890} England and Wales and Northern Ireland all draw heavily on the \textit{Scottish model} in an attempt to reduce the number of non-convicted individuals retained on the database,\textsuperscript{891} drawing the line at those charged with a serious, violent or sexual offence. Adoption of a policy similar to Scotland is unsurprising; as Hepple argues the \textit{Marper} decision strongly hints that uniformity with

\textsuperscript{890} For details of the proposed changes in Northern Ireland see \textit{Consultation on Proposals for the Retention and Destruction of Fingerprints and DNA in Northern Ireland}, Department of Justice (NI) (March 2011). Available at: \url{http://www.dojni.gov.uk/index/public-consultations/archive-consultations/consultation_paper_-_retention_of_data_and_fingerprints_in_northern_ireland.pdf}. For a thorough response to the DNA retention changes in Northern Ireland see the Genewatch submission to the consultation process: available:\url{http://www.genewatch.org/sub-567519}

\textsuperscript{891} The Northern Ireland DNA Database operates under different legislation from that in England, Wales and Scotland. The authority arises from the Police and Criminal Evidence (Northern Ireland) Order 1989, as amended by the Police (Amendment) (Northern Ireland) Order 1995 and the Criminal Justice (Northern Ireland) Order 2004, but the law mirrors that of England and Wales. DNA may be taken without consent from anyone charged with a serious, violent or sexual offence. Adoption of a policy similar to Scotland is unsurprising; as Hepple argues the \textit{Marper} decision strongly hints that uniformity with
Scotland would be acceptable as being within ―the margin of appreciation‖ open to the UK Government‖. 892

However, while this _Scottish model' has found favour with the ECtHR (and others such as the Nuffield Council of Bioethics), 893 the logic behind this retention principle is not entirely clear. There is a growing concern that the _Scottish model' promoted in Marper is in fact overtly stigmatising a particular group of non-convicted individuals. 894 For example, under the previous model, obtaining DNA from all those arrested for a recordable offence, the police could claim that DNA collection and retention were not overtly stigmatising but a routine facet of criminal investigation protocol. However, under the revised system, the collection and retention of biometric information is directly linked to a particular classification of offence, namely those arrested for a serious, violent or sexual offence.

As was discussed earlier such an approach (linking retention with arrest and offence seriousness) is highly problematic. It is submitted that such an approach may result in a form of discrimination (potentially contravening Article 14 of the ECHR). 895 The concern is that if we engage in post-acquittal assessment of retention, we are singling out individuals on the basis of _risk_ and are refusing to allow them to return to their default position before their original contact with the criminal process. Lord Justice Waller commented on this issue during the Court of Appeals decision in the Marper case:

> If justification for retention is in any degree to be by reference to the view of the police on the degree of innocence, then persons who have been acquitted and have their samples retained can justifiably say this stigmatises or discriminates

893 See Nuffield Council on Bioethics Report, The forensic use of bio-information: ethical issues (London, 2007), chapter four. The Report found that _Fingerprints, biological samples and DNA profiles should be retained indefinitely only for those convicted of a recordable offence. This would bring the law in England, Wales and Northern Ireland into line with that in Scotland. The exception would be the DNA of people charged with serious violent or sexual offences, which could be kept for up to five years even if they are not convicted.' 894 For an example of such criticism see McCartney C, Williams R and Wilson T, The Future of Forensic Bio-information (Nuffield Foundation 2010).
895 See European Convention on Human Rights, Article 14‘ _the enjoyment of rights and freedoms set forth in this Convention shall be secured without discrimination on any ground such as sex, race, colour, language, religion, political or other opinion, national or social origin, association with a national minority, property, birth or other status._"
against me – I am part of a pool of acquitted persons presumed to be innocent, but I am being treated as though I was not.\textsuperscript{896}

The difficulty is that when retention becomes a subjective determination (particularly when conducted by the police), those subjected to retention become guilty by a lesser degree – the message is clear, the sample is being kept because we think you are going to offend in the future!\textsuperscript{897} The concern is that under this form of regime (those convicted of offences and ‘potential’ future criminals) the database is essential perceived as a database for ‘undesirables’ housing the ‘known active offending population’.\textsuperscript{898} The argument is that because the database is perceived as a criminal repository that the failure to return an individual to his or her position before arrest has a stigmatising effect on the individual involved.\textsuperscript{899}

The concern is that such categorisation habitually results and exacerbates inequalities within society, which are utilised as a form of social control. Seminal writers such as Becker,\textsuperscript{900} Foucault\textsuperscript{901} and Garland\textsuperscript{902} (among other notable luminaries) have long discussed the existence of ‘othering’ in society, arguing the majority often utilise the ‘caracal’ (of which the criminal process is a central component) to ‘manage’ the ‘underclass’ or ‘dangerous populations’ within society.\textsuperscript{903} Therefore in the context of a DNA database it is not surprising that the majority utilise the resource in an attempt to manage the ‘risky populations’ within society.

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{896} \textsuperscript{896} R (S and Marper) v Chief Constable of the S. Yorkshire Police (2002) 1 WLR 3223, 3242–43 (AC) (UK)
\item \textsuperscript{897} See Nuffield Council on Bioethics Report, The forensic use of bio-information: ethical issues (London, 2007), 33. Full report available from \url{http://www.nuffieldbioethics.org}
\item \textsuperscript{899} In a tragic case in the UK a mother of an individual who was falsely accused of exposing himself to a women at a train station has claimed that her sons indefinite retention on the database (despite the charges being dropped) were a major source of grievance before he took his own life a couple of months later. The women claims that her son was ‘traumatized’ by the event and felt that it was inherently unfair that he was now being retained on a criminal database for life. See Morris, N. ‘Mother claims son killed himself after DNA profile taken’ The Independent (UK) (August 8, 2010).
\item \textsuperscript{900} See Becker H, Outsiders: Studies in Social Deviance (Simon and Schuster 1963).
\item \textsuperscript{901} See Foucault M, Discipline and Punish: the Birth of the Prison (New edn, Penguin 1991).
\item \textsuperscript{902} See Garland D, The Culture of Control: Crime and Social Order in Contemporary Society (Oxford University Press 2001).
\item \textsuperscript{903} There is a rich literature in the area of social theories of crimes, for useful introductions see Johnson R, ‘Social Class and Delinquent Behaviour’ (1980) 18(1) Criminology 86–93; Garland D and Sparks R (eds), Criminology and Social Theory (Oxford University Press 2000); Rock P, ‘Sociological Theories of Crime’ in Maguire M, Morgan R and Reiner R (eds), The Oxford Handbook of Criminology (4th edn, Oxford University Press 2007). For deeper analysis see among others Braithwaite J, Crime, Shame and Reintegration (Cambridge University Press 1989); Cloward R and Ohlin L, Delinquency and Opportunity (Free Press 1960); Matza D, Delinquency and Drift (Wiley 1964); Young J, The Exclusive Society (Sage 1999); Downes D and Rock P, Understanding Deviance (Oxford University Press 2003).
\end{itemize}
\end{footnotesize}
society. Under this rationale the inclusion of those arrested for offences is of little concern to the _majority_ as they do not see it as in _their_ interest.  

In contrast there are those who suggest that retention (even for those who have been acquitted) is not actually stigmatising. For example, Swergold argues there is no merit to the idea that such a policy is actually harmful to the acquitted individuals, citing the ECtHR decision not to compensate the parties in _Marper_ for _distress and anxiety caused by the knowledge that intimate information about each of them had been unjustifiably retained_. But such criticism is surely erroneous as the ECtHR explicitly noted the stigmatisation concerns attached to the retention of biometric data. Thus it is important to acknowledge that storage on these databases creates a risk of stigmatisation, _shadows of suspicion are projected upon those whose data is stored_, so it is important to acknowledge the stigmatising potential inherent in DNA retention.  

Therefore, it is important to acknowledge that the amended UK approach which is modelled on the Scottish model (after it received the proverbial _thumbs up_ from the ECtHR), is problematic as it places a stigma upon a particular class of arrestees, namely those arrested for serious, violent or sexual offences.  

Thus it is imperative that we begin to re-evaluate the justifications for retention, as the concept of retaining the DNA of an individual who has been subject of an arrest (but has been acquitted or charges have been dropped) is particularly problematic. If states are to continue with this approach, it is submitted that they will have to address two pertinent issues: one, whether the retention of an individual or category of individuals (for example, those arrested for a sexual offence) can be justified when the individual involved is not subject to conviction? To justify such retention the state will have to produce reliable and independent evidence that such an individual (or group of individuals) present a significant future risk of offending over the rest of the unconvicted population. Secondly (and importantly), whether the retention of this information will reduce the potential future risk from occurring or will improve the chances of identifying and capturing the individual if he or she does commit a

---

904 A concern in relation to the UK recommendations is that the revised three year retention regime is arguably attempting to manipulate this argument. By drawing the line at a serious offence _us_ (the law abiding citizens) versus _them_ (the barbarians at the gate) argument is exacerbated by adopting a higher threshold of offence, as the majority use the offence seriousness as justification of the erosion of the rights involved.  


906 48 EHRR 50, para. 120.  

907 Ibid. para. 122. Moreover, the Court highlighted that the stigmatisation can be especially harmful when minors are concerned. See also ibid. para. 124.  

908 Wright D and De Hart P, _Privacy Impact Assessment_ (Springer 2012), 58.
future offence. In short, if persuasive evidence can be adduced to justify why an individual (or category of individuals) should be subject to retention (even if not subject to conviction) then the state may be justified in retaining the DNA from these legitimately ‘risky’ individuals. Such an approach would align with the growing incorporation of scientific and evidence based risk theories into the realm of policing.  

The adoption of a ‘tailored’ approach could be aligned with the ‘reflective regulatory framework’ which could facilitate this independent research in combination with public discourse to create an informed, reasoned and justified societally acceptable approach to the categories of individuals who should be subject to DNA retention. A concern with this approach is that if we allow the debate to become dominated by science and risk it may present empirical validity that makes the retention of DNA profiles of non-convicted individuals more ‘palatable’ despite the inherent human rights and due process concerns surrounding such retention.

There is a growing call for a refined and justified approach to DNA retention; Murphy provides a useful summary of the use and benefit of such an approach:

DNA typing is too powerful a method of identification to scrub it from investigations altogether, but its power also warrants great caution. I tend to think that a narrowly composed, scrupulously maintained database, with protections in place to prevent undue exploitations, is the most desirable means of striking the balance between the benefits of DNA databasing and its potential harm. It also strikes me as the most sound approach given the practical constraints of limited resources to construct and maintain such databases. I

---

909 As the Human Genetic Commission in the UK observes, “This apparent move from entitlement-based to risk based retention signals, significantly, the introduction of a more scientific approach into policing practice, moving investigation from the territory of belief (ad hominem suspicion) to scientific theory (prediction based on known facts).” As the report continues “the NDNAD may, as the NPIA says, have revolutionised” policing, by foregrounding science, research, and the use of statistical evidence”. See Human Genetics Commission (UK), Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance and use of the National DNA Database (November 2009), 37.

For an account of the growth of technology and science in policing see Cope N, "Intelligence Led Policing or policing led intelligence" (2004) 44 British Journal of Criminology 188. A concern is that the discourse is becoming increasingly dominated by risk as opposed to focusing on the appropriate level of state intervention in a liberal democracy. While risk has long been a concern for criminal justice, the current political and popular preference is for ‘risk control’, which attempts to prevent the recurrence of a new crime and to eliminate risk completely, rather than management or reduction, which accepts the inevitability of error. Clear and Cadora argue that risk calculation may be for one of three purposes: risk control, risk management or risk reduction. See Clear T and Cadora E, “Risk and Correctional Practice” in Stenson K and Sullivan R (eds), Crime, Risk and Justice: The Politics of Crime Control in Liberal Democracies (Willan 2001), 59.
would prefer a state of the art database with fewer, but better tailored, entries over a forever flagging, backlogged repository of unmanageable numbers of low-level, one time offenders.

If, however, the current trend of expansion were to continue- such that not just certain classes of serious offenders or even all convicted offenders, are to be included, but all arrestees then it seems to me that a certain tipping point is reached. Once databases cease to draw meaningful lines around their constituent populations – and I would classify inclusion of arrestees as such, given the large number of arrests annually – then the corresponding benefits of keeping them small fade. In the face of unmitigated enthusiasm to expand DNA databases, my intuition is to favour a population-wide register as a way of correcting for the problem of inequality, encouraging the population to attend to oversight, and avoiding the actual and expressive entrenchment of extant socioeconomic and racial disparities in the criminal justice system.910

The difficulty for locating justifications for retention is that currently there is a dearth of quality research on this issue. This issue has been recently reiterated in a substantial report, *The future of Forensic Bio-Information*, which found that:

... almost all who urge caution, and many of those who promote, the future development of these technologies now seem to agree that there is a paucity of independent and authoritative research on how, and the extent to which, the information derived from them directly impacts on criminal investigations or usefully supplements other forms of information held by the police and other relevant agencies. There remains a lack of robust evidence and critical assessment of the benefits and costs of rapidly increasing expenditure in this area. It is widely argued that this shortcoming prevents informed decision-making and makes problematic the necessary efforts to justify particular levels of investment in forensic bio-information within the legal system domestically

---

and trans-nationally, albeit this is a systematic feature of all police resource allocation.\textsuperscript{911}

Therefore it is submitted that if we are to persist with retention policies predicated on time limits (even those watered down to only include those arrested for serious offences) clear evidential based justifications must be proffered. A fundamental criticism that can be leveled at the current UK recommendations is that there is no clear reason why this _three year retention period for those arrested for serious crime_ has been adopted. There is a paucity of research on the appropriate retention periods for DNA profiles of those arrested, never mind research indicating that three year retention of those arrested for serious crime is a suitable categorisation.\textsuperscript{912} Given the current means of selecting the appropriate retention periods one is inclined to agree with Gloria Laynock, the director of the Jill Dando Institute, who equated current means of assessing retention to _stick[ing] your finger in the air and think[ing] of a number_.\textsuperscript{913} Interestingly, as Ashworth and Redmayne have recently observed, the _more serious offences tend to have lower recidivism rates than less serious ones, so in terms of risk of reoffending the Scottish policy [upon which the UK policy is now based] might even be said to target the wrong people_.\textsuperscript{914}

Recently there have been a number of research studies conducted in the US which aim to illustrate that it is beneficial to retain the DNA profiles of arrestees.\textsuperscript{915} However, despite the findings of these research studies, a common denominator of these studies is that there was a


\textsuperscript{912} There have been a number of pilot studies in recent years that have attempted to produce evidence based results that would justify retaining the DNA profiles of arrestees for whom no further action is taken. The reports attempt to produce tangible public benefits from the retention of these profiles. See for example, Tseloni A and Pearse K, _DNA retention after arrest: Balancing privacy interests and public protection_” (2011) 8(1) European Journal of Criminology, 32–47. For an interesting hypothetical DNA retention study utilising a previous Cambridge study in Delinquent Development, see Kazemian L, Pease K and Farrington D, _DNA Retention Policies: The Potential Contribution of Criminal Career Research_” (2011) 8(1) European Journal of Criminology, 48–64.

\textsuperscript{913} Hansard, HC Deb, 9 December 2009, c113WH.


political or law enforcement influence notable throughout, raising questions over the independence and legitimacy of the findings.\textsuperscript{916}

It is submitted that the reflective regulatory framework that was introduced towards the end of chapter three provides an appropriate means of reconciling the difficulties surrounding DNA retention. Its primary use is its capacity to consider the various interests in the DNA debate and \textit{reflect} upon and locate a measured and justified course of action. In terms of a

\begin{footnotesize}
\footnotesize
\begin{itemize}
\item For example, a Chicago study on preventable crimes highlighted the cases of eight particular offenders who committed 60 further offences (including 53 murders and rapes) after their initial arrests by law enforcement. The study \textit{finds} that if these individuals had been sampled and their DNA profiles retained on the state database, the subsequent crimes could potentially have been avoided: \textit{This study proves the public safety benefit of requiring DNA samples upon arrest for felony crimes. Most states require DNA collection upon felony conviction, but review of criminal history records show that offenders typically have numerous felony arrests before a conviction is ever secured. The full potential of state DNA databases in solving and preventing crimes cannot be fully realised until state legislatures act to expand the DNA databases to require DNA collection for felony arrestees.} \textsuperscript{3} See City of Chicago, \textit{Chicago’s Study on Preventable Crimes: Requiring DNA for felony arrests can solve and prevent violent crimes - Waiting for conviction can cost lives} (2005). Available at: \url{http://www.dnaresource.com/documents/ChicagoPreventableCrimes-Final.pdf}. A similar study was conducted in Maryland, which in assessing the cases of three offenders found that 20 additional crimes could have been prevented if DNA had been obtained and retained after these individual were first arrested. (See \textit{Maryland Study on Preventable Crimes} (2007). Available at: \url{http://www.denverda.org/DNA_Documents/Arrestee_Database/MarylandDNAarresteestudy.pdf}). There are numerous problems with both studies: for example, both lack the necessary independence to instill a sense of legitimacy in the findings (The Chicago Study was commissioned and conducted by the City of Chicago group, whilst the Maryland study was conducted by the Maryland state police). Moreover, both studies display an element of \textit{convenience}. For example, both studies select a limited sample size, eight and three respectively, with the eleven individuals chosen displaying significant levels of criminality after their initial arrest. There is no denying the possibility that the taking of a DNA sample (and the retention of the derived profile upon the state database) may have prevented the subsequent offences. However, to equate the retention with certain prevention is perhaps misleading; one could for example argue that the individuals involved may not have discarded DNA at any of the subsequent crimes scene, thus the retention of their DNA on the database would be of little use. Although for arguments sake, let us assume that the DNA retention would have enabled the subsequent offences to be prevented (i.e. the police located DNA at the first future crimes scene and the offender was subsequently convicted of the offence, thereby preventing him or her from engaging in any future public criminality during time in prison. It is submitted that the \textit{consequentialist} logic proffered by both research studies is problematic, firstly, the sample sizes (eight and three) are too small to provide an adequate basis for the wide scale implementation of policy based on these findings. Secondly, there is no mention of how these individuals were chosen, thus it would seem convenient that the 11 individuals chosen had histories of repeat recidivism. An argument can be made that the individuals were chosen to suit the desired findings of the report, which again undermines the legitimacy of the findings for widespread application. While the concept behind the studies, attempting to locate a scientific or justifiable basis for lowering the sampling threshold to those arrested for a felony offence, was admirable, the methodologies used to derive the results lack the necessary independence, breadth or depth to add any credible weight to the DNA retention debate. Similar studies have been conducted in Washington in 2008 \textsuperscript{3} (citing the occurrence of numerous crimes that could have been prevented if the legislature had not rejected the opportunity to lower the DNA retention threshold in 2005), see \url{http://dnasaves.org/files/WASHINGTON_STATE_PREVENTABLE_CRIME.pdf}; in Denver in 2009 (similarly to the Chicago and Maryland studies, focussing on 5 individuals who had committed another 52 crimes after their initial arrest), available at: \url{http://denverda.org/DNA_Docuemnts/Denver%27s%20Study.pdf}; in Indiana in 2009 (The report adopted a different approach, it focused on the cost saving ($50 million a year) that could be achieved by retaining the DNA of those arrested for felony offences. The report focused on the efficacy element of DNA and its capacity to rapidly include or exclude individuals early in police investigations, thereby saving police time and costs), available at: \url{http://www.denverda.org/DNA_Documents/Arrestee_Database/Indiana%Arrestee%20Legislation%20-Jan%202009.pdf}. The same criticisms as outlined in the main text can be directed at these research studies.
\end{itemize}
\end{footnotesize}
DNA database it presents three notable advantages over current approaches, namely, as was outlined above, its aim to produce a legitimate group of ‘risky’ individuals for retention, its ability to absorb the occurrence of ‘signal crimes’ (by avoiding the ‘knee-jerk’ response to high profile crime and DNA profiling which is proving a significant driver of DNA expansion regimes in other jurisdictions) and its ability to adapt to developments in DNA technology.

**Time Limits**

Perhaps the biggest threat to the successful maintenance of a time-limit regime is the occurrence of ‘crimes of relevance’ within the jurisdiction in which the database is based. A ‘crime of relevance’ is a crime in which a biological sample has been discarded and may (or may not) prove useful for a criminal investigation. Take the following hypothetical example. A series of serious crimes occur in a jurisdiction that operates a strictly limited DNA database. At each of the crime scenes a DNA sample is obtained (from which a successful DNA profile is derived). The forensic laboratory confirms that the DNA sample found at all the crime scenes is from the same individual, thus police suspect the existence of a serial offender. As the crimes continue to go unsolved, public anxiety and police frustration increase. In such an environment (even if there were an independent study conducted that formulated an appropriate period of DNA retention), the fixed time limits and use of DNA during a criminal investigation would come under pressure from the need to solve the serious crimes. Thus a pertinent question to acknowledge is whether the time-limit approach would be capable of surviving a bout of signal crime. It is suggested that arbitrary time limits are akin to ‘drawing lines in the sand’ – the main problem being that emotive tides of public opinion will invariably attempt to wash away the ‘lines’ or fixed time limits.

While the above example is at best speculative, its purpose is to highlight the potential difficulty in maintaining fixed time limits when faced with serious crimes in which DNA evidence may be perceived as crucial. A contemporary example is the current trajectory of the US DNA retention regime, in which public support for the expansion of the retention regime is being largely driven by pro-DNA advocates (and sensationalised media attention) whom continually cite the potential and utility of DNA profiling for criminal investigations.917 As observed in chapter three, the use of DNA in solving signal crimes

---

917 There are a growing number of groups in the US that are lobbying for the lowering of DNA collection and retention threshold laws to include arrestees. See for example, DNA saves, a group described as committed to
(combined with the current rights adverse atmosphere) creates a dangerous environment in which to maintain a semblance of balance and objectivity during the DNA debate – thus maintenance of a time-limit approach may be difficult to sustain within such an environment.

However, even if fixed time limits are sustainable it is submitted that there are two additional concerns, namely the use of DNA beyond its lawful retention and the increasing use of Machiavellian DNA investigative techniques. One of the driving forces behind the UK DNA expansion was the outcome of the *Attorney General’s Reference* (No. 3 of 1999) case, in which the Court of Appeal deemed a DNA match founded on the basis of an illegally retained DNA profile to be inadmissible. Although the decision was overturned by the House of Lords upon appeal (and the match was deemed admissible), the government at the time used the confusion surrounding the case as a central driver when implementing the 2001 Act (allowing the retention from all those charged with a recordable offence).

Commenting on the case, Wasik criticises both the HOL decision and the government reaction in the case where the police have acted in breach of PACE by retaining DNA the passage of DNA arrestee laws. The website provides a detailed account of cases, such as Katie Sepich, in which DNA was vital to the apprehension of the offender (who in most cases had been previously arrested without a DNA samples being procured). For further information see http://dnasaves.org/.

*Attorney General’s Reference No.3* (2000) 2 Cr App R 416. In essence the dramatic expansion in the UK was aided by two controversial cases; *R v B* (*Attorney General’s Reference* (No.3 of 1999)) [2001] 2 AC 91 and *R v Weir* [2001] Crim LR 656. Both cases concerned serious offences (murder and rape respectively) and in both the individuals involved had been linked to the crimes by DNA profiles which should no longer have been on the database. Originally, the individuals involved had been charged with minor offences but were subsequently acquitted and charges dropped respectively. In the first case, the court held that the DNA profile on the database was retained illegally thereby it was deemed inadmissible and the individual was acquitted of rape. In the second case the conviction was quashed on appeal as the appeal court held that the samples were inadmissible and should have been excluded from the original trial. Ultimately, the House of Lords overturned the decisions stating that if (section 64) did not make evidence obtained as a result of a failure to comply with that prohibition inadmissible, but left it to the discretion of the trial judge. The Explanatory Notes accompanying the 2001 Act indicate that this provision was a direct result of the decisions in the Court of Appeal and House of Lords concerning the admission of DNA evidence that had been illegally retained. See Explanatory Notes to the Criminal Justice and Police Act, 2001, para. 210. Prior to the Act, the House of Lords had ruled that the admission of such evidence was within the judge's discretion. In response to these decisions and the accompanying public concern the relevant provision in the 2001 Act amended s.64 PACE to permit the retention of fingerprints and DNA samples from those subsequently acquitted or against whom proceedings had been dropped. The Attorney General justified the changes implemented by the 2001 Act by referring to the controversial outcome in the *R v B* case: “The Joint Committee on Human Rights ... commented: ‘This [ruling in *R v. B*] has the curious result that the police are under a legal duty to destroy material, but are able to use it as evidence if they breach their duty by keeping it.’ The Bill’s proposals ... seek to put right this anomaly. The ruling of the Judicial Committee of the House of Lords allows the court a discretion to use the information, but that only affects cases where by chance, inadvertence or inefficiency the samples have been kept ... The Government’s view is that the evidence should not be discarded and that the police should be able to make use of that valuable and objective evidence. In my view, once it is acceptable that prints and samples should be able to be retained and properly used in the defence of individual liberty, which has been attacked by criminals if they are proved to be such, it is a proportionate use of the power of society to enforce the protection of the individuals who compose it.’ The Attorney General (Lord Williams of Mostyn), Hansard, HC (Series 5) vol. 625, col. 1042 (9 May 2001).
evidence which quite clearly should have been destroyed, the legislative response has been to change the law with retrospective effect so as to legitimise what was improperly done.\textsuperscript{919} Thus in any regime in which a strict time-limit approach is in operation, the issue of _matches_ occurring after their legal retention will remain a possibility. Accordingly, protocols will have to be established that ensure the timely removal and destruction of such information when they have reached the end of their _legal life_. Further discussion of this issue will be elaborated upon in the subsequent chapter, however at this juncture it is submitted that for an effective time limit regime to be in operation it is imperative that the police are not _encouraged_ to retain samples (and their corresponding profiles) beyond their lawful retention.\textsuperscript{920} Thus caution is needed in affirming the admissibility of evidence that has been unlawfully retained.

_Use and ‘Back end’ DNA profiling_

The difficulty surrounding DNA retention and time limits is not an insurmountable obstacle: the creation of a strict deletion regime accompanied by a court policy of refusing to admit _matches_ or evidence derived from matches that were illegally retained would go some way in assuaging this issue. However, if we are successful in creating restricted DNA databases predicated upon strict retention criteria, a pertinent question to ask is – where do we go from here? The concern is that if we move forward with tailored (thereby smaller) DNA databases the chances are that there will be fewer hits when searching the DNA database. The question to ask is whether the public or the police will be content with minimising or undermining the _utility_ of DNA and DNA databases within the criminal justice system.\textsuperscript{921}


\textsuperscript{920} The importance of establishing adequate governance and oversight arrangements will be discussed in the next chapter.

\textsuperscript{921} The issue of utility has been the subject of significant academic commentary. For example, is the use of the database to be restricted to its capacity to solve crimes and/or assist criminal investigations, or is it to include less tangible benefits such as deterrence: i.e. an individual who is retained on the database will be deterred from committing a future offence. In the context of this section, utility is linked to the specific issue of the use of a DNA database for investigating crime. For interesting discussions on utility see Williams R, Johnson P and Martin P, _Genetic Information & Crime Investigation: Social, Ethical and Public Policy Aspects of the Establishment, Expansion and Police Use of the National DNA Database_ (Welcome Trust 2004), 45–46; McCartney C, Williams R. and Wilson T, _The Future of Forensic Bio-information_ (Nuffield Foundation 2010), 21–39; Goulka J, Mattheis C, Disley E and Steinberg P, _Issues in Policing, Toward a Comparison of DNA Profiling and Databases in the United States and England: Technical Report_ (Centre on Quality Policing, A RAND Infrastructure, Safety and Environment Centre 2010). See http://www.rand.org/pubs/technical_reports/TR918.html; Human Genetics Commission (UK), _Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance and use of the National DNA Database_ (November 2009), chapter four.
A concern within the current discourse surrounding DNA in the criminal process is that there has been an insular focus upon on one aspect of the DNA debate – namely the prolonged retention on the DNA database of those arrested but not convicted of an offence. The insular focus on DNA retention, combined with the continuing development of DNA technology has enabled other controversial DNA procedures to become increasingly prominent without adequate debate or public scrutiny.

It is suggested that given the allure of DNA evidence and particularly its capacity to solve signal crimes, police (particularly in an environment of smaller databases and restricted avenues for securing legitimate DNA samples) may increasingly turn to alternative methods of utilising DNA during a criminal investigation once the prospect of constructing large DNA repositories becomes restricted. Word count prohibits a detailed discussion on these issues but potential consequences surround the increasing use of controversial collection measures (such as mass screening and surreptitious sampling), the potential growth of unregulated shadow databases that operate outside the legislative framework and/or the increasing use of ‘back end‘ DNA databasing techniques.\footnote{Williams R, Johnson P and Martin P, Genetic Information & Crime Investigation: Social, Ethical and Public Policy Aspects of the Establishment, Expansion and Police Use of the National DNA Database (Welcome Trust Report 2004).}

‘Back end‘ databasing is based on attempting to derive more intelligence from the legitimately obtained and retained DNA profiles and samples by ‘mining‘ the information for further intelligence. As outlined in chapter three, in general there are two types of DNA sample that can be gathered: crime scene samples and comparator samples. Both forms of samples can be mined for additional intelligence. In relation to crime scene samples, the growing practice is referred to as ‘phenotype sampling‘.\footnote{For a fascinating overview of the current trends in phenotype DNA searching and the growing calls for regulation see Koops B and Schellekens M, “Forensic DNA Phenotyping: Regulatory Issues” (2008) 9 Colombia Science and Technology Law Review 158–202. See also the Forensic DNA Phenotype (FDP) Project at the Centre for Bioethics at the University of Pennsylvania, in the US. The project examines the potential benefits and problems associated with genetics in law enforcement. Given the promise of this technology, the goal of the project is to monitor FDP developments in the US and internationally. The website of the group provides a resource for information (such as cases in which the technology has been utilised, countries which have regulated the use of the technology and current/novel developments in the area), the website is available at: http://forensicsdnaethics.org/resources/laws.}

It entails examining the crime scene sample for particular genetic sequences that may suggest that a potential perpetrator may have particular physical traits\footnote{Information regarding the age of the offender can be useful to a police investigation: it can help police to narrow down the potential pool of suspects in an individual case. Human chromosomes have particular DNA sequences at their ends, termed telomeres, which shorten every time a cell divides. By analyzing the length of} (e.g., eye colour, hair colour and ethnicity).\footnote{925} The
ultimate goal of such an approach would be to derive a ‘genetic photo-fit’ of the donor of the crime scene sample. While the use of this technique is currently limited, given the continued research into the human genome it may prove an effective investigation tool in the future; thus it is important for any legislation to be prepared in a manner that can adapt to

the telomeres one can determine the biological age of the cell and consequently the age of the individual. Although the length of telomeres depends on both environmental and genetic factors, it correlates significantly with human age. Currently, the error of age determination by telomere shortening analysis exceeds five years but with improvement of methodology, it will soon be possible to estimate the age with a very small margin of error. See Hewakapugea S, van Oorschot R and Baindur-Hudsona S, –Evaluation of mtDNA mutations to predict age” (2008) 1(1) Forensic Science International: Genetics Supplement Series 561–562; Karlsson A, Svenssona A, Marklund A and Holmlunda G, –Estimating human age in forensic samples by analysis of telomere repeats” (2008) 1(1) Forensic Science International: Genetics Supplement Series 569–571. Human phenotypic traits, such as skin and iris pigmentation, and stature and facial characteristics, are strongly linked to an individual’s genetic make-up and the combination of particular genes and DNA sequences. The majority of these traits are controlled by a large number of genes, consequently complicating this area of study. Commonly, scientists focus on traits which are controlled by a single gene or small genetic combinations. Such genetic markers associated with skin and hair pigmentation have been identified and have been subject to extensive investigation. See Graham E, –DNA reviews: predicting phenotype” (2008) 4(3) Forensic Science, Medicine, and Pathology 196–199; Budowle B and Daal A, –Extracting evidence from forensic DNA analyses: future molecular biology directions” (2009) 46 BioTechniques 339, 349.

The UK Forensic Science Service (FSS) has conducted research into ethnic inference, as well as other commonplace characteristic markers. As a result of this research, the FSS runs 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 SGM plus 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 SGM Plus profile in each of the five British ethnic groups: white European, Afro-Caribbean, Indian Subcontinent, South-East Asian and Middle Eastern – is calculated. See FSS Fact Sheet on commonplace characteristics. Available at: http://www.forensic.gov.uk/forensic/ssi/ssi_foissi_fsi/fssi_docs/43L_Commonplace_characteristics.pdf.

For example a company in the US, DNAPrint Genomics, offers a service known as DNAWITNESS 2.0; the website claims that the programme can construct a partial physical profile from the DNA ... essentially a partial reconstruction of their driver licence photo’. See Wade, N. –‘Unusual Use of DNA Aided in Serial Killer Search” New York Times (June 3, 2003). Although, it is worth noting that the company has since gone out of business but continues to licence the use of the technique, see Melba, N. —‘New DNA test can ID a suspect’s Race, but police won’t touch it” WIRED (Dec 20, 2007). Available at: http://www.geneticsandsociety.org/article.php?id=1057. While DNA analysis for determining physical characteristics is still in the embryonic stage and has not yet garnered significant support or approval from the entire forensic and scientific community, it has been reported as showing some early promise. In the US in 2003, the police tested a correlating DNA sample which had appeared at a number of different crime scenes for the potential physical characteristic of the perpetrator. The eyewitness testimony described the perpetrator as Caucasian, however, DNA testing revealed that the individual was statistically 85% African American and 15% Native American. Based upon these findings, the focus of the police investigation was altered and as a result Derrick Todd Lee was subsequently arrested and later convicted for these crimes. Police claimed (it is important to note the vested interest of these police claims) that without the information provided from the DNA testing Derrick Todd Lee would ‘more than likely’ not have been detected through traditional methods of police investigation. See —‘D3M left at crime scene could be used to create picture of criminal’s FACE” Daily Mail (17th Feb 2009): Available at: http://www.dailymail.co.uk/sciencetech/article-1146503/DNA-left-crime-scene-used-create-picture-criminals-FACE-say-scientists.html. See also Semikhodskii A, Dealing with DNA Evidence: A legal Guide (Routledge 2007), 46. Although others have argued that ‘the current state of technology gives no indication that it is likely to develop quickly’; see Nuffield Council on Bioethics, The Forensic Use of Bio-information: Ethical Issues (2007), 87. Available at: http://www.nuffieldbioethics.org.
such potentially controversial developments.\textsuperscript{927} As M’Charek observes as the technology on this topic develops, the politico-ethics at stake goes beyond individual moral principles, such as privacy, inviolability of the body, or informed consent, and requires a social responsibility and accountability for both the technologies and the practices in which they are put to use.\textsuperscript{928}

However, currently of greater concern is the increasing mining of comparator DNA samples (and their respective DNA profiles). A technique that is growing in popularity is the concept of familial DNA searching.\textsuperscript{929} It involves searching the legitimately retained comparator profiles that are stored on the DNA database not for direct matches but for partial matches, which because of the principles of hereditary may indicate that the donor of the _partially

\textsuperscript{927} For an interesting account of the developments in phenotype research in the Netherlands see M’Charek A, “Silent Witness, Articulate Collective: DNA Evidence and the Inference of Visible Traits” (2008) 22(9) Bioethics 519–528. In 1994 the Dutch government introduced legislation to regulate the collection and use of DNA evidence interestingly in May 2003 it amended this legislation to expand the legitimate use to include drawing inferences of _visible external personal characteristics_ from biological samples. It precludes searching for genes related to medical ailments by restricting the searches to genes that reveal traits that are overtly visible to anybody and that it can be stated with certainty that the individual involved is aware of them.


\textsuperscript{929} A reason for the growth of this technique has been in part the growing number of high profile success stories that have accompanied the use of the technique. It was first used in 2002 to solve a cold case from 1973, involving the murder and rape of three girls in Cardiff. The search of the UK NDNAD revealed a partial match in the form of Paul Kappen. A prior DNA mass screening had targeted 500 suspects in the local areas, including Joseph Kappen, Paul Kappen’s deceased father. Upon locating the partial match, the police secured a court order to exhume the body of Joseph Kappen, which subsequently proved to be a direct match to the DNA profile from the original crime scenes. In 2003, the technique was again used to solve the murder of a 1998 murder in Cardiff. Similarly to the Kappen case a search of the UK database with the profile located from the crime scene failed to reveal an exact match. It did, however, reveal a rare genetic marker that was also present in the original crime scene sample. The source of the partial match was a 14 year old child whose DNA had been retained on the UK database for a previous offence. Given the fact that the 14 year old child had yet to be born at the time of the murder, the police began to investigate the male relatives of the child. Eventually the police identified Jeffrey Gafoor as a suspect, who upon being confronted confessed to the 1988 killing. Despite its initial success stories, it was not until the solving of the Michael Little case in 2004 that the technique began to garner widespread publicity. The facts of the case involved a brick being thrown off a bridge in the United Kingdom, hitting the windshield of a truck being driven by Michael Little, resulting in the driver of the truck having a fatal heart attack. Upon examining the crime scene, the police located the brick, which upon examination revealed a bloodstain. A DNA profile derived from this stain was searched against the UK DNAD; however, it failed to reveal an exact match. The police then conducted a DNA mass screen in the surrounding areas for 350 individuals; again, though, this failed to produce a match. The police then turned their attention to the familial DNA technique and the familial search produced 25 partial matches. The police began by interviewing the individual with the closest match (16 out of 20 loci) who subsequently led the police to Craig Harman, who transpired to be a direct match for the bloodstain on the brick. As Williams and Johnson note this was the first case in which familial searching led to a successful criminal prosecution in a current police case. An example of the growing political will for the use and expansion of familial DNA profiling is illustrated by the recent activities of Mitch Morrisey, District Attorney of Denver in the US. Morrisey has created an extensive resource on the concept of familial searching (and DNA and criminal justice more generally). His website documents the regions and policies in which familial searching is currently being conducted (UK, New Zealand, California, Colorado and Virginia), whilst also providing accounts of the successful cases (currently standing at 36) in which the procedure has been utilised. For further information see http://www.denverda.org/DNA/Familial_DNA_Database_Searches.htm.
matched profile may be related to the donor of the crime scene sample. Word limits prevent a detail examination of this issue but given the issues confronted by the use of this technique (namely the idea of an individual being implicated in a criminal investigation because of their genetic relatedness) it is raises significant concerns, inter alia: efficiency, privacy, social concerns, disparity/discrimination, fairness/equality and democratic accountability.

The concept of familial searching involves a combination of computer software and the retained DNA profiles. As was elucidated in chapter two an individual inherits his DNA from his or her biological parents: thus under the principles of hereditary it is probable that an individual shares similar DNA sequences to parents and relevant offspring. A normal search on a DNA database searches for an exact match, between the crime scene sample and the comparator sample (which would be a 10 loci match in the United Kingdom and a 13 loci match in the United States). In contrast a familial search searches for a partial match to a crime scene sample potentially linking a relative of the donor to the crime. However, given that the combination of DNA profiles are based upon probability it is important to recognise that a partial match may also be linked to unrelated people who may have some of the same genetic markers; therefore as Greely et al note, usually, a partial match by itself will not be overwhelming evidence that the person who left the crime scene DNA is a relative of the donor in the Offender Index who provided a partial match. See Greely H et al, Family Ties: The Use of DNA Offender Databases to Catch Offenders’ Kin (2006) 34 JL Med & Ethics 248, 251. The relevance of a partial match can be evaluated and enhanced by assessing the number of matching alleles. There are two scenarios when partial matches may appear during a criminal investigation: an inadvertent partial match and a familial search. An inadvertent partial match may result as an accident: for example, a crime scene sample will often be the subject of contamination or degradation and as a result may not allow a full DNA profile to be obtained. Therefore a search of the database (with the partial crime scene sample) may locate a number of partial matches on the database. A familial search is significantly different. It denotes a deliberate trawling of a database to locate a potential familial or partial matches on the database. Take the following example: the police derive a full DNA profile from a crime scene; however, once searched upon the database it fails to reveal a match. The police then subsequently decide to search the database for a partial match that may reveal a potential familial member of the unidentified DNA profile. It is difficult to denounced the potential utility of the technique for criminal investigation, as in theory it does present a potential useful line of inquiry for the police. See Bieber F and Lazer D, Guilt by Association” New Scientist (23 Oct 2004), Williams R and Johnson P, “Inclusiveness, Effectiveness and Intrusiveness: Issues in the Developing Uses of DNA Profiling in Support of Criminal Investigations” (2006) 34 JL Med & Ethics 234.

Depending on the search criteria and the size of the database, a familial search can return thousands of possible leads. The search criteria can range from high search stringency (which is an absolute match) to a moderate search stringency to a low search stringency. The difficulty is finding the appropriate search stringency: a stringency that is too high may result in false negatives; i.e. excluding potential relatives. In contrast, a search stringency that is too low may identify numerous false positives, i.e. individuals who are not related to the potential owner of the crime scene profile. The cost of performing a search for a partial match on a DNA database is negligible but the cost of investigating a large number of partial matches, many of which may be false positives may be great. Steps can be taken to attempt to verify the family relationship and reduce the number of retained leads. Methods include Y-STR testing (Y chromosomes are passed from father to son); geographical locations; other rare alleles and other relevant factors. These techniques are controversial because they involve retaining and reanalysing DNA samples. For a recent study on efficiency and familial searching see Myers S, Timken M, Sims G and Greenworld M, “Searching for first-degree familial relationships in California’s offender DNA database: Validation of a likelihood ratio-based approach” (2011) 5 Forensic Science International: Genetics 493–500.

It has serious privacy implications for all the individuals involved in the process, including the target (focal point) and the relevant family members. See Bieber F, Brenner C and Lazer D, “Finding criminals through DNA of their relatives” (2006) 312 Science 1315–1316.

An important issue is identifying the difficulties that such a procedure may cause the family unit. The issue is the capacity of this technique to shatter family assumptions by discovering links that were not thought to be there (illegitimate children, incest etc) and dissolving links that were thought to be there (extra-marital affairs, adoptions etc). Another worrying factor is the family perception of the focal point or pivot. Will their
Suter provides an excellent overview of the broad range of privacy concerns inherent when utilising this procedure:

Familial searches pose privacy concerns with respect to three different entities:

(1) the source of the genetic sample in the databank – the _genetic informant_ ' or _pivot person' – whose close match to the crime scene evidence leads police to investigate family members, (2) the relatives whom the police investigate and from whom they may try to obtain samples, and (3) the family unit as a whole. Each concern presents reasons to be wary of proceeding too readily with familial searches. At a minimum, these reasons suggest that, if familial searches are done at all, they must be performed with safeguards that would minimize the threats to the privacy interests of each of these groups.  

There are potential disparity and discrimination issues intertwined with this technique. Because we are now restricting databases to those convicted of crime (dependent, however, upon jurisdiction), criminal justice systems tend to overly impact upon ethnic minorities and the socially impoverished in society. Therefore the argument is that by utilising a technique such as familial searching on a database that already disproportionately represents certain sections of the community that it will essentially subject entire ethnic and socially impoverished communities to a _life time of genetic surveillance_. The concern here is that while the technique of familial searching and the establishment of a DNA database do not create the disparities and discrimination in the criminal justice, there use will exacerbate and magnify these issues. See Greely H, Riordan D, Garrison N and Mountain J, _Family ties: The use of DNA offender databases to catch offenders' kin_” (2006) 34 Journal of Law, Medicine and Ethics 248–262.  

There is a second discriminatory angle to familial searching linked to the concepts of fairness and equality. Quite simply, it discriminates between those who have a relative on the database and those who do not. A concern is that those who are happy to bear the _cost_ of this technique do not see this technology as affecting _their_ interests (often based on _othering_ assumptions and beliefs that _criminality runs in families_). See Krane D, Bahn V, Balding D, Barlow B and Cash H, _Time for DNA disclosure_” (2009) 326 Science 1631–1632.


For detailed discussions on the issues created by the use of familial searching in the criminal process see Murphy E, _"Relative Doubt: Familial Searches of DNA Databases”_ (2010) 109 Michigan Law Review 290–348; Epstein J, _"Genetic Surveillance: The Bogeyman Response to familial DNA_

938 For an excellent recent overview of familial searching in the United Kingdom and the United States see Krimsky S and Simoncelli T, Genetic Justice: DNA Databanks, Criminal Investigations and Civil Liberties (Columbia University Press 2011), chapter four. Currently in the U.S. familial searching is not authorised at a federal level. Initially, the FBI NDIS Procedures prohibited 'the release of the offender's personally identifiable information' when a partial match was located. (See Bulletin, FBI, Interim Plan for the Release of Information in the Event of a 'Partial Match' at NDIS (July 20, 2006), available at http://www.ndis.org/publications/newsletters/codis_bulletin_2006.pdf). Although in 2006 the FBI reversed its position by implementing an interim plan which permitted the release of partial matches in 'situations in which there is no other available investigative information'. (See ibid.). The policy enabled individual states to decide whether they would authorise the release of their DNA information to a requesting state. The main reason for the FBI's reluctance to federally authorise this procedure was because it was feared that the _success_ of this procedure has been subject to conflicting reports. 942

384 For example see Curran J and Buckleton J, "Effectiveness of familial searches" (2008) 84 (7) Sci Just 164, 164. A recent article noted that since 2004 there have been 70 such searches in the UK with 18 producing a
The increasing use of novel DNA procedures such as phenotype searching and familial DNA searching are another illustration of the ‘function creep’ or ‘mission creep’ concerns that are often associated with new technology. A concern is that we are currently myopically focusing on elements of the DNA debate (such as DNA retention and arbitrary time limits), at the expense of other important areas. This has enabled the use and development of other controversial DNA techniques to ‘fly under the radar’. For example, techniques such as familial searching are being increasingly utilised during criminal investigations. The concern is that such techniques are being established and utilised without any prior public discourse or oversight mechanisms for the use of these procedures.

This issue is illustrated when one considers the protocols for the use of the procedure in the United States. A recent study has found that states have been reluctant to implement guidelines on the use of familial searching, finding that most states have refrained from prescribing rules governing partial match reporting or familial searching in statute, regulation or well publicized memoranda. The study highlights a startling lack of transparency in rulemaking in relation to this procedure. Of the 32 states that responded to the survey on state familial searching policies, 12 were found to have no written policy. Of the remaining states that claimed to have written policies only 2 states have made these policies publically available. Maryland has implemented legislation prohibiting the use of familial searching. Alternatively California has released a memorandum that authorises both the reporting of inadvertent partial matches and the deliberate trawling of the California database for partial matches under limited circumstances. While the UK has adopted formal rules or a


Ibid. Ram notes that ‘a not insignificant amount of policy making surrounding identification of possible family relationships in state forensic DNA databases occurs in a fashion that is nearly impenetrable to public oversight’.

Ibid. See also Nakashima E, ‘DNA Tool to Solve Crimes Can Entangle Suspects’ Kin.’ Wash Post (21 April 2008).

Ram N, ‘DNA Confidential’ Science Progress (Oct. 2009). Available at: http://www.scienceprogress.org/wp-content/uploads/2009/10/dna_matching.pdf. The lack of federal authorisation or clear procedures for the technique has not prevented a number of states from using it during criminal investigations, at least four states without written policies have nonetheless reported partial match information to investigators in the past. See Rosen J, ‘Genetic Surveillance for All’ Slate (17 March 2009). Available at: http://www.slate.com/id/2213958/ Six other states prohibit intentional familial searching, while their policy regarding inadvertent familial searching has not been publically disseminated. Fifteen states currently allow the reporting of inadvertent partial matches.
Memorandum of Understanding for the use of the tactic, the details of this agreement have not been publically disseminated. As Williams and Johnson observe, discussions between ACPO, the Home Office, the Information Commissioner, and representatives under which such searches will be carried out and their results integrated into existing investigative procedures. However, the agreement is operationally sensitive and has not been publicly disseminated.  

This policy of allowing laboratories and the police to develop and formulate policies for the use of familial searching in a criminal investigation without external oversight is an area of concern. It is suggested that this technique (and all other DNA related techniques utilised during a criminal investigation) should be subject to the rigours of the legislative process. Given the sensitivity of the material involved (access to an individual’s genetic material), it is vital that transparency underpins any procedure involving DNA in the criminal justice system. Public trust is essential – therefore debate is crucial. While we can all celebrate the use of this technology and the application of familial searching to seemingly bring perpetrators such as the ‘Grim Sleeper’ to justice, these success stories should not be allowed to mask the need to ensure that adequate oversight, transparency, public discourse and accountability measures underpin a state’s policies for using this technology.

5.6. Universal DNA Database

Finally it has been suggested by a number of commentators that a number of the concerns in relation to the DNA debate, such as mass screening, surreptitious sampling, and the growth of arbitrary DNA databases can be alleviated by the construction of a universal DNA database. While a detailed consideration of the creation of such a database is unfortunately not possible given the word constraints of the thesis, two issues will be briefly considered.

Firstly, it has been argued that a universal DNA database presents a ‘fairer’ option than the current proliferation of arrestee (or non-convict) DNA databases. Those in favour of such

---


950 For example see Kaye DH and Smith ME, ‘DNA Databases for Law Enforcement: The coverage question and the case for a population wide database” in Lazer D (ed), DNA and the Criminal Justice System: The technology of Justice (Massachusetts Institute of Technology 2004), 260.

951 It is acknowledged that the use of the word ‘fairer’ is arguably problematic. The word fair is essentially a loaded term that will be underpinned by the perspective in which it finds itself. In this context, the word fair is proffered in terms of equality, i.e. that it is fair that citizens should be treated equally when possible (in the absence of a justification from differential treatment, such as a conviction).
an approach argue that if we as a society are willing to implement a regime that houses the DNA of those predicated upon arrest (in the hope of enhancing the criminal intelligence aspect of the database), then we should be prepared to allow the creation of a comprehensive DNA database. While undoubtedly a controversial proposition, it is submitted that such arguments are persuasive - allowing a suspect regime whilst arguing against a comprehensive regime is arguably a hypocritical standpoint. A suspect (who is released without charge) should be allowed to return to the same position as before police arrest. An alternate viewpoint supposes that individuals who come in contact with the police should be _tarnished_ by this encounter.

An argument in favour of such an approach is the current growth of arbitrary arrestee DNA databases, which allow the police to be the arbiters of collection and retention. Allowing the police to control who and whether a person should be retained on the database is a dangerous model as it enables the police to target and retain biological information about particular sections of a society. It also adds weight to the argument that we are drifting further towards a criminal justice system predicated upon crime control values, by minimising judicial oversight in favour of police decisions. Recent reports of disparity within the UK database add credence to the argument that allowing police to be the arbiters of the database provide police with a temptation to create databases of the _usual suspects_. A recent inquiry seems to confirm the problems articulated above as it was found that British police officers were...

---

952 Williamson R and Duncan R, _DNA Testing for all: There are two fair possibilities for forensic DNA testing: everyone or no one_ (2002) 428 Nature 585.

953 For example, to highlight the arbitrary nature of the UK database let us consider the breakdown of the database on 31 March 2006. At this date the NDNAD contained 3.7 million comparator profiles. This included a 12 % replication rate; therefore the database housed approximately 3.3 million individuals. The breakdown of the individuals on the database illustrates that over half of the individuals on the database at time of entry were under 25. Eighty per cent of the profiles were from men; 76% from white Europeans and 7% from Afro-Caribbean. Using Home Office statistics (racial category selected by arresting officer) and census data (racial category self selected) the Guardian newspaper has calculated and reported that 37% of black men, 12 % of Asian men and 9% of white men are housed on the NDNAD. The result is a DNA database populated by the usual suspects, which disproportionally represents ethnic minorities and the socially impoverished in society. Recent figures from Genewatch exacerbate the seriousness of this situation, highlighting the danger to children: According to new figures obtained by the campaign group Genewatch, almost 45,000 black children aged 10 to 17 in England and Wales – about 23% of all black children in the age group – have been added to the database in the past five years. By contrast, the DNA profiles of just under 10% of white youths aged 10 to 17 – about 440,000 children – have been added. Facts and Figures: Number of people with records on the NDNAD. Available at: [http://www.genewatch.org/sub-539481](http://www.genewatch.org/sub-539481). See also Leapman C, _Three in four young black men on the DNA database_ The Telegraph (5 November 2006). As Helen Wallace director of Genewatch stated, _The racial bias in the database is shocking and black children have been disproportionately affected._ Doward J, _Racist bias blamed for disparity in police DNA database_ The Guardian (9 August 2009). Available at: [http://www.guardian.co.uk/politics/2009/aug/09/police-dna-database-black-children](http://www.guardian.co.uk/politics/2009/aug/09/police-dna-database-black-children).
arresting people on the basis of obtaining a DNA sample. To avoid this "othering" we essentially have a simple choice, we retain the DNA (perhaps just the DNA profile to alleviate ethical concerns surrounding the DNA sample) of the entire population or we confine DNA retention to a specific group of individuals (whose DNA retention is justified by satisfying strict retention criteria, such as relevance and recidivistic probability).

One of the major problems is that current police practices overly police ethnic minorities and/or the socially disadvantaged. Therefore a DNA database populated by racially biased police practices will inevitably result in a racially skewed and disproportionate DNA database, as evident from the current UK database. The reasons for the disparities range from racial prejudice shaping the discretionary decisions of some police officers and prosecutors, to race-neutral police deployment patterns that lead to more aggressive policing in minority communities than others.

While it is acknowledged that the DNA database is not creating the racial issues within the system, it is argued that the database is exacerbating the existing racial issues in the police in the UK. A universal or comprehensive DNA database might perhaps be a favourable way forward on the basis that it would be non-discriminatory and offer a "real and worthwhile gain in the endeavour to ensure that the guilty, and only the guilty, are convicted of crimes." However, it is important to note that the establishment of a universal DNA database will not prevent discriminatory police practices. While there are those who debunk the legitimacy of such an approach by stating it "solves the discrimination problem because it makes us all suspects." As Walker and Cram argue "area or national testing on a compulsory basis..."


955 This is an issue that has been recognised as a problem for modern policing, for example, The European Code of Police Ethics and the ECRI recommendations for police powers of stop and search emphasise the need for policing procedures to be racially and culturally sensitive and to avoid prejudice.


958 (R (S and Marper) v Chief Constable of the S. Yorkshire Police [2004] UKHL 39, para. 87 (Sedley J.).
should be rejected'. A society in which compulsory sampling becomes the norm will eradicate the importance of the concept of policing by consent: "a society that does not ultimately rest for its lawfulness on the voluntary, willing adhesion of the vast majority of citizens to its policing and court system is a failing society".

However, it is submitted that if one's choice is limited to the current trend of arrestee databases or a universal DNA database, then the latter is a considerably fairer option. As Kaye and Smith observe, "Like the double helix of the DNA molecule … privacy and equality are intertwined in complex ways. When they are untangled and evaluated, the case for a population wide DNA database is strong … at the very least it deserves substantial debate".

Secondly, it is contended that given the increasingly technological society in which we now reside the concept of a universal database may perhaps become a reality in the foreseeable future. Thus it is important that we engage with this issue from a neutral, objective and

---

961 As Williamson and Duncan suggest in contrast to the current trends there would seem to be two fair possibilities for forensic DNA testing: "everyone or no one". See Williamson, R and Duncan, R, -DNA testing for all: there are two fair possibilities for forensic DNA testing: everyone or no one" Nature 418 (8 August 2002). Available at: www.nature.com. Similarly Phillipson suggests "this arbitrary process of adding to the [arrestee] database breeds injustice. Perhaps we owe it to society to all be included?" Expanding Phillipson states: "It's not as simple or as sinister as [an] Orwellian government database versus virtuous civil libertarians: it's a real dilemma that we should try to think about dispassionately and with a full grasp of the facts." See Phillipson G, "The case for a complete DNA database" The Guardian (19 November 2009). Available at: http://www.guardian.co.uk/commentisfree/libertycentral/2009/nov/19/comprehensive-dna-database/print.
962 Kaye DH and Smith ME, "DNA Identification Databases: Legality, Legitimacy and the case for population Wide Coverage" (2003) Wis L Rev 413, 459. In addition the establishment of a DNA database would remove the need for the controversial and rarely successful DNA mass screens (or DNA dragnets), surreptitious sampling and familial searching.
963 For example, The United Arab Emirates announced plans in 2009 to implement the world's first universal DNA database. At present the UAE database only houses 5,000 DNA profiles, which have been obtained from convicted felons. See Lutz M, "UAE: Government to create DNA database of all residents, starting with children" LA Times (7 Oct 2009). Available at: http://latimesblogs.latimes.com/babylonbeyond/2009/10/uae-government-to-create-dna-database-of-all-residents-starting-with-children.html. From the start it is important to highlight that the cultural and human rights ideals found in western democracies differ drastically from totalitarian states. Nonetheless it is important to consider at the very least the practical and technical issues that the UAE encounters when attempting to establish the world's first universal DNA database. As Jeffreys states: "It will be interesting to see how this develops … how this works out will really set the scene for how other countries approach this problem. If it's seen as a great success which the population and citizenry fully endorse, I think it will open the way for a lot of other countries going down this route … if it turns into a disaster for whatever reason, that will be the end of the story … it is an interesting experiment at this point." See Youssef M, "DNA database set to start in a year" The National (7 October 2009). Available at: http://www.thenational.ae/apps/pbcs.dll/article?AID=/20091007/NATIONAL/710069853/1133.
informed standpoint as technology and society continues to develop. Interestingly when the Nuffield Council 2007 report commented on the creation of a universal DNA database it stated:

There was a sharp division of opinion on this issue among respondents to our consultation. Some argued that the contribution to crime control and public safety would justify the financial investment and offer a proportionate benefit to any loss of privacy. Respondents also proposed a compulsory population-wide database as the solution to discrimination and inequalities in treatment. For example, Benedict Birnberg, who has over 40 years experience as a civil liberties lawyer, argues that: "A universal bio information database […] would remove the taint of discriminatory selection, of some people being stigmatised because their bio information and not others was held […]. There would remain some potential for bio information being put to sinister use but that potential would be reduced by being held by an independent repository."

However, the Nuffield Council ultimately found against the establishment of a universal DNA database, but importantly it acknowledged that it is an issue that should remain on the agenda because of the evolving nature of DNA technology and society:

Currently, the balance of argument and evidence presented to us is against the establishment of a population-wide forensic DNA database. We conclude that such a response would be: disproportionate to the need to control crime; unlikely to secure public support; and impractical for the collection of samples from different categories of persons (such as visitors to the United Kingdom). However, the possibility of its establishment should be subject to review as biometric technology develops, and in the light of research on the potential contribution of such a database, under appropriate safeguards, to public safety

964 See Report published by the Nuffield Council on Bioethics in 2007, As a population-wide identification tool, DNA profiles suffer two disadvantages. Current technology does not allow a person's DNA profile to be determined in real time as a check on their identity. If this were to become possible, identical twins (almost one per cent of the population) have identical DNA profiles, but not identical fingerprints, making fingerprints the more obvious choice for a population wide database for instant identification checks, should one be introduced. Nuffield Council on Bioethics Report, The forensic use of bio-information: ethical issues (London, 2007), 86. Available at: http://www.nuffieldbioethics.org/fileLibrary/pdf/The_forensic_use_of_bioinformation_-_ethical_issues.pdf

242
and the detection of crime, and its potential for reducing discriminatory practices.\textsuperscript{965}

In reality, regardless of the ideological concerns that a universal database would create, it would seem that at present the implementation of such a database is not feasible. It is submitted that despite the _equalising_ effect, crime fighting potential or criminal deterrence\textsuperscript{966} effect that a universal DNA database might have that currently practicality, expense,\textsuperscript{967} public acceptance\textsuperscript{968} (although this difficult to gauge) and legality would present potentially insurmountable barriers to the establishment of such a DNA retention regime.\textsuperscript{969}

\textsuperscript{965}Ibid.
\textsuperscript{966}It is also been suggested that a Universal DNA database would have clear crime preventative advantages. Peterson RS, DNA Databases: When fear goes too far\textsuperscript{966} (2000) 37 American Criminal Law Review 1219, 1228. Knowing that their DNA profile was being housed on a National DNA database, individuals would be less inclined, the argument suggests, to get involved with crime (either that or it would create a niche in the fashion market for _DNA free crime apparel_ for those not wanting to leave any trace behind!). This argument consequently develops in to an argument for public safety, on the basis that if individuals were less inclined to commit crime it would consequently lead to a safer society. As Kaye and Smith argue: _Thus substantial public safety benefits would likely flow from investment in a population wide database_, see Kaye DH and Smith ME, DNA Databases for Law Enforcement: The coverage question and the case for a population wide database” in Lazer D (ed), DNA and the Criminal Justice System: The technology of Justice (Massachusetts Institute of Technology 2004), 260. An extension of the public safety argument correlates with the current growth in the concept of victims’ rights. Often in DNA cases, it is highlighted that those who commit a serious crime have often committed a previously less serious offence. The argument is that if the individual’s DNA had been on the database, that would have avoided the subsequent crime as the individual would have already been penalised for the original offence, thereby promoting the rights of the potential victim.

\textsuperscript{967}The cost of swabbing the entire population would prove extremely expensive. One solution would be to correlate the database with the already established Guthrie card system, which swabs the newborn for the purposes of testing for various diseases. While it is often argued that the bigger the database the better, it may not be so straightforward. While a universal DNA database would undoubtedly create an exponential increase in the number of DNA matches per crime scene, the problem is that every DNA match would have to be investigated. Therefore the police would be under pressure to cope with the increase in investigative leads while the forensic laboratories, which are currently under pressure, would be overrun with DNA samples. Therefore one could suggest that the establishment of a universal DNA database could conceivably result in a law of diminishing returns because of the sheer size and impact of such a DNA database. The costs involved to create and adequately maintain and run such a database would seem to be unrealistic particularly in today’s financial environment.

\textsuperscript{968}An interesting hurdle would be the issue of public acceptance. A comparable contrast can be made with the US in the 1940s when the US government at the time attempted to implement a universal fingerprinting database. The plan was met with mass resistance from not only civil liberty groups but also from the general public. It would seem likely today that any attempt to implement a universal database would suffer the same fate as its 1940 counterpart. See Kaye DH and Smith ME, DNA Databases for Law Enforcement: The coverage question and the case for a population wide database” in Lazer D (ed), DNA and the Criminal Justice System: The technology of Justice (Massachusetts Institute of Technology 2004), 269. Although in today’s modern society individuals seem to be willing to share more of themselves and their private information than ever before, exemplified by the explosion of social network sites such as bebo and facebook. Add to this the growth of _the culture of control_ in today’s society and the willingness of individuals to accept infringements of their civil liberties for the sake of safety and convenience. See Garland D, The Culture of Control: Crime and Social Order in Contemporary Society (Oxford University Press 2001). In a society where the mantra of _the innocent have nothing to hide_ is gaining momentum it would be interesting to see a public debate on this particular issue.\textsuperscript{969} In light of _Marper_ it would be difficult currently to see how the establishment of a universal DNA database would be deemed _proportionate_.

243
The author believes that currently we need to step back and begin to locate clear rationales for DNA retention, thus ‘swabbing’ the entire state may currently be a move in the wrong direction in terms of the debates surrounding DNA retention. While a universal DNA database is currently more palatable than the current growth of arrestee DNA databases in a number of jurisdictions, universal retention would have a fundamental impact upon the relationship between the individual and the state. Thus any moves in this direction should be clearly underpinned by public discourse, debate and a desire to locate clear rationales for DNA retention.

5.7. Conclusion

While the Marper decision should be welcomed as a ‘shot in anger’ against the seemingly continuous erosion of privacy rights during the pre-trial investigation process, as Heffernan states, ‘The unanimous judgment of the Grand Chamber sheds a revealing light on the limits of police powers in relation to the gathering and retention of personal data for purposes of crime prevention.’ Importantly though for a number of reasons it should not be seen as a resounding conclusion to the DNA debate. The decision was flawed for a number of reasons, *inter alia*: the time-limit approach unfairly stigmatises a particular group of individuals and it is perhaps unsustainable given the current ‘oracle’ like perception surrounding DNA within modern society; and ultimately the decision was not grounded on any clear justifications or evidentiary foundations. Moreover a myopic focus upon the decision would result in a failure to consider a number of the novel DNA techniques that are continuing to develop such as phenotype and familial searching.

It is submitted that the ‘reflective’ regulatory framework offers an amenable solution to the conflicts that will habitually arise when utilising DNA profiling in the criminal process. The central benefit of such an approach is that it attempts to arrive at a measured and reasoned decision. Thus in the area of retention and use, it recognises the allure of retaining the DNA of a large group of individuals and maximising the use of the retained material. However, it would seek to ground such potential benefits in clear justifications and within a framework that ensures those targeted by the process are adequately protected. For example, it would aim to identify individuals who present a justifiable basis for prolonged DNA retention, whilst subjecting such decisions to external oversight and regular review; thus avoiding

---

current problems surrounding unjustifiable expansion, reactionary legislation, circular debates, premature use of novel DNA investigation techniques and transparency. Moreover it would situate the use of these technologies against the backdrop of continuing civic engagement in informing the public and assessing public support for the use of these technologies.
6. Governance

6.1. Introduction

When discussing the concerns in relation to the use of technologies it is often a worry that an overly dark and apocalyptic picture of technology and society is portrayed.\(^{971}\) This should not be the case. Technology (and science) have and will continue to have a positive impact on almost all areas of society. In the context of this thesis, utilising technology during a criminal investigation can not only help to identify and eliminate potential suspects but it can also protect the rights of those engaged in the process.\(^{972}\) It can do this by adding to the _checks and balances_ of a criminal process, as Marx observes _new technologies ... have the potential to enhance ... by providing audit trails and documentary evidence of policing activities_.\(^{973}\)

Thus we return to the concept of how to utilise and insert modern technology into the criminal process. This thesis is proffering an all-encompassing _reflective_ regulatory framework as a suitable mechanism for enabling the benefits of the technology while allowing them to be introduced in a measured and organic manner (ensuring that its use is consistent with the relevant rights and due process values of the period and location in which it is operating). Central to the success and legitimacy of this framework is ensuring that it is underpinned by an adequate system of _governance_. In relation to governance, two areas will be central: integrity (including both the range of processes within the system and the sensitive information involved) and, arguably most importantly, public confidence and trust (which arguably will be central to the success or failure of any technology or policing procedure).

6.2. ‘Good’ Governance

In policing the term governance generally can be subdivided into two areas. Firstly, it has been linked to the increasing regulation and ordering of a complex modern society, of which

---


\(^{972}\) For example see a fascinating account of the use of CCTV in the custody suite, Newburn T and Hayman S, _Policing, Surveillance and Social Control: CCTV and police monitoring of suspects_ (Willan Publishing 2002).

the concept of a state police is deemed to be a fundamental component. The second issue focuses on a narrower understanding of the term, namely the constitutional and institutional arrangements for framing and directing the policies of the police. This chapter is concerned with the latter.

However, from the beginning it is important to note that the author has avoided adopting a prescriptive approach on the issue of governance. This approach is not to be seen as a decision to "sit on the fence" but is grounded in prudence and pragmatism. Given the relatively recent discovery and incorporation of DNA profiling into the criminal justice system, it is unsurprising to observe that there are considerable differences in how the technology is being introduced and governed in international jurisdictions. Divergences can be attributed to a variety of factors (such as resources, and cultural and political values).

Thus at present there is a lack of commonality on what represents good governance. Additionally, the concept of "good" is a vague term riddled with subjectivity. In the context of any jurisdiction it is dependent on a collection of common values, norms and narratives: thus it is likely to vary from one jurisdiction to the next. As Hindmarsh and Prainsack note:

"By 'governance' here we refer to a cluster of rules for, and practices of, conduct and decision making that go beyond parliamentary legislation and governmental"

---

974 Essentially derived from political science it concerns itself with the increasing complexity of western industrial societies' governance. See generally, Rhodes R, Understanding Governance: Policy Networks, Governance, Reflexivity and Accountability (Open University Press). As Rose and Miller observe, political power is exercised today through a profusion of shifting alliances between diverse authorities in projects to govern a multitude of facets of economic activity, social life and individual contact. See Rose N and Miller P, "Political power beyond the state: problematics of government" (1992) 43(2) Public Policy and Administration 173, 174. In addition, governance in this sense has been expanded to include government activities both within and outside the state, particularly in combating the growing transnational security issues of modernity. See generally Johnston L and Shearing C, Governing Security: Explorations in Policing and Justice (Routledge 2002).


976 Although it could be argued that DNA profiling and DNA databases are or have the ability to be subsumed under the first area as well.

977 For a superb account of such differences see Hindmarsh R and Prainsack B (eds), Genetic Suspects: Global Governance of Forensic DNA Profiling and Databasing (Cambridge University Press 2010).

measures. Governance includes practices and institutional arrangements of and between both governmental and non-governmental actors. We understand as _good governance_, institutional and practical arrangements and modes of governance that enjoy high levels of public trust. However, questions about _good governance_ cannot be answered in a general way. What _makes sense_ in one national context can seem starkly different in another, as they are marked by differences in informal practices, legal, cultural and political traditions; policy narratives; and sometimes, religious beliefs.\(^{979}\)

Thus instead of outlining a prescriptive approach to governance this chapter will argue that any governance regime should endeavour to be underpinned by a collection of broad goals (explicitly ensuring integrity and securing and maintaining public confidence)\(^ {980}\) that seek to protect the human rights and due process values of those targeted by the process. The approach is in line with the concept of a _reflective_ regulatory framework for a number of reasons. Firstly, it promotes civic engagement and public discourse which are central to the _reflective_ nature of the framework. Secondly, the benefits of underpinning the framework with broad values and goals enables the framework to remain organic and reactive to the developments in technology and science (which enhances the ability of the relevant safeguards to continually protect the human rights and due process values of those targeted by the process). Given the rapidly developing nature of DNA technology and methods of using it during a criminal investigation, it is submitted that such an approach is currently superior to a rigidly prescriptive rule book that may quickly become outdated or archaic.

In general the concepts of integrity and public trust are intertwined. Thus it is argued that public trust can be developed and maintained by developing a system designed to ensure that the integrity of the system is protected by a _notching_ principle.\(^ {981}\) As Etzioni observes in the context of DNA and the criminal process, _we must carefully notch the slippery slope, set clear markers for what is allowed and not allowed, and establish penalties for the abuse of_


\(^{980}\) The two concepts are not proffered as an exhaustive list of goals that should underpin a governance system, however, it is argued that the concepts are broad enough to encompass a range of supplementary issues that will aid in achieving the required legitimacy for the system.

genetic information; if policies governing DNA usages include adequate protections of this type, they deserve our full support.\textsuperscript{982} Therefore to promote trust in the system, it is vital that strong, rigorous (but flexible and adaptable) \textit{notches} or safeguards are implemented to incorporate the myriad of processes involved when utilising DNA within the criminal process. If these \textit{notches} are implemented and rigorously enforced it would assist in allaying the public's understandable human rights, due process and ethical concerns concomitant with the utilising of DNA in the criminal justice process. The following section will consider a number of the most important \textit{notches}.\textsuperscript{983}

\textbf{6.3. Integrity}

For the legitimacy of a system the integrity of all aspects of the system must be ensured. In the context of DNA within the criminal process, this entails ensuring the range of processes involved are sufficiently administered to produce accurate results. As alluded to in chapter two a failure of a process or procedure (such as a failure to follow the required protocols may lead to the contamination of a DNA sample) will impact upon the veracity of the adduced evidence, an issue that is magnified by the role of DNA profiling in the criminal process; thus an erroneous result or mistake that prevents or undermines the utility of a DNA sample may have serious ramifications for a criminal investigation or at a criminal trial.

In short this means that the information produced must be consistently accurate and reliable. A method of ensuring the correct administration of a system and the content involved (which in the case of DNA is particularly sensitive) is to subject the system to a process of regular review (both internal and external) and efficient oversight. Thus clear procedures outlining collection, transfer and storage of the DNA samples, laboratory procedures, communication of information (such as the location of a DNA profile \textit{match} to an external party) and any other subsequent use need to be clearly outlined within a framework drafted in a manner that

\begin{flushright}
\end{flushright}
promotes the regular audit, review and oversight of such processes. The presence of such an approach promotes not only the integrity of the information contained within the system but also promotes the integrity of the system as a whole.

6.3.1. Safeguards

As a result of the sensitive material involved, the safe and secure retention of this material (i.e., its integrity) is imperative if public trust and confidence is to be maintained. Moreover, justifications for the establishment of a database and the scope of who should be sampled and whose DNA retained on the repository are intrinsically linked to custodianship and security provisions of the database. Often it has been the presence (or lack of) these safeguards that have proved central when retention and collection policies have been challenged in jurisdictional courts. In terms of DNA collection and subsequent retention, there are two types of information to be safeguarded, namely the DNA sample and the derived DNA profile.

984 For example, when considering the proportionality of the UK DNAD retention regime in *Marper*, the ECtHR stressed that in assessing the privacy implications of the regime that it was imperative to consider the security measures (surrounding issues such as access and confidentiality) that were established to protect the collected and retained personal information. Consequently, to enhance the amenability of a DNA retention regime, the domestic law has to afford appropriate safeguards so as to prevent the use of such personal data that may contravene Article 8. The Court noted that such protections became even more important when utilising automated systems to store and systematically search sensitive data for policing purposes. See *S & Marper v UK* 48 EHRR 50, para. 67. See also the Canadian decision, *R v S.A.B* 2 S.C.R. 678, 2003 SCC 60.

985 However, it is important to note that usually the retention of a DNA sample and/or a DNA profile is accompanied by a myriad of other information. For example, in the UK, profiles are stored on the DNA database with the name, date of birth, sex, ethnic appearance and offence for which the DNA sample was taken. The record on the NDNAD also incorporates a ‘Phoenix Arrest/Summons report number’ which establishes a link between the NDAD and the Police National Computer (PNC). A major concern with the UK DNA Database is that information on the PNC is accessible on approximately 10,000 computer terminals in the UK and to 56 bodies, including governmental intelligence agencies and the secret service, and government departments and groups such as the Association of British Insurers. In contrast to the UK other jurisdictions retain less associated information and place further barriers to restrict access to the information. For example in the US, currently the DNA profiles stored in the NDIS contain a specimen identifier, the sponsoring laboratory’s identifier, the initials or names of the DNA personnel associated with the analysis, and the actual DNA profile characteristics. The NDIS does not store criminal history information, case related information, social security numbers or dates of birth. No personal identifying information other than a specimen identification number is stored in the NDIS. If a match (or association) is identified and later confirmed, a public forensic laboratory must initiate contact with other laboratories involved in the match in order to obtain the name of the offender. Similarly, in Canada profiles are stored with only a unique identification number (other information in relation to the donor of the DNA information is removed). See Bramley B, ‘DNA databases’ in Fraser J and Williams R (eds), *Handbook of Forensic Science* (Willan Publishing 2009), chapter 12. The unique identification number is coupled with a barcode which allows the profile to be linked to the original donor. The staff at the databank do not have access to the barcode system. The Information Commissioner Office has recommended that a similar system be implemented in the UK, arguing that the information retained on the PNC should be limited to identifications such as height or eye colour, as opposed to details including an individual’s offence. The office further recommended that records which would not in themselves be retained on the PNC should be reduced to the bare identifiers and be removed from the main system and held in such a way that it could only be accessed
Database - DNA profile

The data protection ramifications of the storage of a DNA profile were considered in detail by the Law Reform Commission. The Commission found (and it is agreed by the author) that the definition of 'data' under the 'Data Protection Acts' (The Data Protection Act 1998 and the Data (Amendment) Act 2003) will incorporate the retention of a DNA profile on a database. Moreover, it was argued that the storing of a DNA profile on a DNA database can be located within the meaning of 'personal data' under the Act. It has even been suggested that a DNA profile may in fact fall within the remit of 'sensitive personal data' under that Act as it is capable of inferring the gender, ethnicity and racial origin of an individual.

986 The EU Data Protection Directive (95/46/EC) sets out the EU requirements in relation to data protection. The directive has been transposed into Irish law in The Data Protection Act 1988 and The Data Protection (Amendment) Act 2003 (together the 'Data Protection Acts') and set out the legal framework for data protection under Irish law. The relevant regulatory body in Ireland in relation to data protection is the Data Protection Commissioner.

987 For a more detailed consideration of the data protection issues see LRC Consultation Paper, Law Reform Commission, Consultation Paper on the Establishment of a DNA Database (LRC CP – 2004). Under the 2003 Act ‘Data’ is defined as automated data and manual data; ‘Automated Data’ is defined as information that: (a) is being processed by means of equipment operating automatically in response to instructions given for that purpose; or (b) is recorded with the intention that it should be processed by means of such equipment; ‘Manual Data’ is defined as information that is recorded as part of a relevant filing system or with the intention that it should form part of a relevant filing system.

988 Defined as 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 likely to come into, the possession of the data controller. ‘ See section 2(a)(iv) of the 2003 Act. The definition of ‘Data’ in the 1988 Act was effectively limited to information that was held in a computer or in electronic form and consequently did not apply to data that was processed manually or held in paper files or in other hard copy or analogue form. The 2003 Act significantly altered this position by applying the data protection rules to manual data that is recorded as part of a relevant filing system. This means that the data protection rules now apply not only to information held in computer or electronic form (such as computer systems, computer databases, telecommunications systems, CCTV surveillance systems, etc.) but also to any filing system that is organised such that specific information relating to a particular individual is readily accessible (which may, of course, include paper files). One common misconception frequently encountered is that the data protection rules only apply to data that is ‘sensitive’ in nature. This is not the case. This misconception arises primarily because of the use of the term ‘personal’ (an expression which most people equate with some level of sensitivity) in the definition of ‘personal data’. The definition of ‘personal data’ makes it clear that it applies to any data relating to a living individual who 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. The data does not have to be in any sense private or sensitive in nature. An individual’s name and address may be sufficient to identify him or her and may therefore constitute personal data under the Acts.

989 ‘Sensitive Personal Data’ is defined as personal data as to: (a) the racial or ethnic origin, the political opinions or the religious or philosophical beliefs of the data subject; (b) whether the data subject is a member of a trade union; (c) the physical or mental health or condition or sexual life of the data subject; (d) the commission or alleged commission of any offence by the data subject; (e) any proceedings for an offence committed or alleged to have been committed by the data subject, the disposal of such proceedings or the sentence of any court in such proceedings.

251
Thus it is imperative that the retention of DNA profiles on a database fall within the protections provided for within the Data Protection Acts.\textsuperscript{990} In general the Data Protection Acts outline eight data protection principles which data controllers\textsuperscript{991} (who in the case of DNA profiles will invariably be the custodian of the DNA database) must abide by when processing\textsuperscript{992} an individual’s data.\textsuperscript{993} The eight principles are: obtain and process the data or the information constituting the data fairly; ensure that the data is accurate and complete and, where necessary, kept up to date; ensure that the data has been obtained only for one or more specified, explicit and legitimate purposes; do not further process the data in a manner incompatible with that purpose or purposes; ensure that the data is adequate, relevant and not excessive in relation to such purposes; do not keep the data for longer than is necessary for such purposes; and take appropriate security measures against unauthorised access to, or unauthorised alteration, disclosure or destruction of, the data, in particular where the processing involves the transmission of data over a network, and against all other unlawful forms of processing.\textsuperscript{994} An important protection within data protection principles is that a person should have the right to access their personal data.\textsuperscript{995}

\begin{itemize}
  \item The Commission notes that there are general exceptions to the Data Protection Acts, such as the prevention, investigation and prosecution of offences, but that these are subject to a case by case prejudice test. See LRC Report, \textit{Law Reform Commission Report: The Establishment of a DNA Database} (LRC 78 – 2005), para. 4.15.
  \item “Data Controller” is defined as a person who, either alone or with others, controls the contents and use of personal data.
  \item “Processing” of or in relation to information or data is defined as meaning performing any operation or set of operations on the information or data, whether or not by automatic means, including: (a) obtaining, recording or keeping the information or data; (b) collecting, organising, storing, altering or adapting the information or data; (c) retrieving, consulting or using the information or data; (d) disclosing the information or data by transmitting, disseminating or otherwise making it available; or (e) aligning, combining, blocking, raising or destroying the information or data.
  \item Under the Acts an individual is also afforded a number of legal rights entitling him or her to: (a) establish the existence of personal data; (b) access that personal data; (c) object to certain types of processing; (d) have their names removed from the mailing lists of direct mail-shots; (e) not be forced to make access requests; (f) have certain rights in respect of automated decision taking processes; (g) have any misleading or incorrect personal data rectified, blocked or erased; (h) complain to the Data Protection Commissioner; and (i) seek compensation through the courts. Although section 5(1)(a) of the 1998 Act exempts access to data kept for the purpose of preventing, detecting or investigating offences, apprehending or prosecuting offenders', where allowing access may adversely affect the aim of the proceedings. Despite this, the exemption should not be allowed to operate as a blanket ban on access to the retained information. Thus it is submitted that access should be considered on a case by case basis, with procedures clearly outlined by the custodian of the DNA database.
\end{itemize}
There are exceptions to data protection principles for the areas of prevention, investigation and prosecution of crime: however, these restrictions are to be considered on a case by case basis. For example, section 2A(1)(c)(i) of the 1998 Act as inserted by section 4 of the 2003 Act allows the processing of retained information where it is necessary for the administration of justice. There is also a general exemption in section 8(e) of the 1998 Act which allows data to be processed when outlined under an enactment. Thus it is submitted that the retention and processing of a DNA database would fall within the remit of this section.

The creation of adequate security measures is vital to ensure the integrity of the retained information. Given the sensitive and complicated issues surrounding database security, recommendations for precise security measures are not possible within the thesis. However, a number of general security measures can be proffered, inter alia: limiting the number of individuals whom have access to the database, creating barriers to access (such as security cards, a formal security check in, or requiring biometric verification (iris/voice/fingerprint recognition), password protection (which would change regularly) and a rigid firewall protection system that would protect the computer system from being ‘hacked’. In addition security measures should be created for the secure transfer of information from the custodian to the Gardai (and vice versa). To ensure adequate security measures are adopted, it is submitted that a detailed study of the required security measures should be conducted in conjunction with (but preferably before) the establishment of a DNA database. The study should be conducted by an independent group with the necessary expertise and should form part of an evolving process that concentrates on not only establishing the requisite security measures but also maintaining the required levels once the database is operational.

996 In response to this rising number of security breaches, the Minister for Justice and Law Reform established a Data Protection Review Group in January 2009 to discuss the main regulatory options available to Ireland in relation to legislating for data breaches which occur as a result of human error, loss or theft of data or equipment on which data is stored. Following a period of public consultation, the Data Protection Review Group issued a report recommending that the reporting obligations of data controllers in relation to data breaches should be set out in a statutory Code of Practice as provided for under the Acts. The Data Protection Commissioner published a draft Security Breach Code of Practice on 31 May 2010 for public consultation (the ‘Draft Code’) on which the Data Protection Commissioner invited comments and observations from the public. On 7 July 2010. The Data Protection Commissioner formally approved a ‘Personal Data Security Breach Code of Practice’ (the ‘Approved Code’). The Approved Code has been approved pursuant to Section 13(2)(b) of the Acts. The Data Protection Commissioner has published general guidance on the issue of security, which is available on the Data Protection Commissioner’s website www.dataprivacy.ie.

997 As the LRC Report notes, ‘the commission recommends that in setting up the database, provision should be made for adequate resources to carry out an expert study to determine the precise form that these measures should take.’ LRC, Law Reform Commission, Report: The Establishment of a DNA Database (LRC 78 – 2005), para. 4.09.
While the retention of DNA profiles on a DNA database falls within the remit of the Data Protection Acts, it is submitted that the retention of sensitive genetic information presents novel concerns, particularly surrounding privacy, from the perspective of data retention. Therefore it is arguable that a privacy and data protection assessment needs to be conducted to address the novel (and potential future) concerns that are associated with the retention of a DNA profile in a state repository. There is no disputing that the retention of an individual’s biometric data is a highly sensitive issue. Given DNA profiling’s capacity to divulge familial relationships, ethnicity and susceptibility to disease it is unsurprising that the Council of Europe standards acknowledged this sensitivity.\footnote{For example, the Council of Europe’s 1981 Data Protection Convention outlines that personal data revealing these characteristics may not be the subject of automatic processing unless domestic law clearly establishes appropriate safeguards. Protection for children is not provided for within this provision specifically but it can be inferred from Article 40 of the UN Convention on the Rights of the Child, which provides that treatment of a child in the criminal process must be consistent with the promotion of the child’s sense of dignity and worth and consider the child’s age and the desirability of promoting his/her reintegration into society. Walsh D, Human Rights and Policing in Ireland: Law, Policy and Practice (Clarus Press 2009), 110.}

\textit{Databank – DNA sample}

Interestingly it would seem that the biological sample (from which the profile is derived) does not currently fall within the term ‘personal data’ within the Data Protection Acts.\footnote{LRC Report, Law Reform Commission Report: The Establishment of a DNA Database (LRC 78 -2005), para. 4.15. \textit{inter alia}, the storage of the samples should be entrusted to the custodian (preferably an independent body subject to regular external review and oversight), samples should be stored and catalogued in accordance with numbers as opposed to a person’s name, storage of the samples should be in a secure room access to which is limited to authorised personal with barriers to access the secure room imposed (swipe cards, biometric verification such as fingerprints, iris, voice recognition) and there should be regular external review to ensure the environment and protocols are appropriate to ensure and maintain the integrity of the samples. See LRC Report, Law Reform Commission, Report: The Establishment of a DNA Database (LRC 78 -2005), para. 4.21, the Commission recommends that stringent and effective safeguards be put in place to ensure that all biological}
recommendation surrounding the DNA database, it is suggested that an independent expert study should be conducted in conjunction (or preferably before) the establishment of a regime which enables the state to collect and retain an individual's biological samples. The expert study would make specific recommendations as to the precise security mechanisms that should be adopted to guarantee the security of the samples.1001

An alternative way of protecting the DNA sample from potential abuse is to destroy it once a working DNA profile has been derived. Such an approach has been gaining increasing momentum. For example, the Protection of Freedoms Act in the UK includes a provision instructing that a comparator DNA sample will be destroyed once a DNA profile has been successfully obtained (within a period of six months).1002 The provision can be linked to the Marper decision in which the Court placed a strong emphasis on the concerns surrounding the retention of a DNA sample, given the sensitive genetic material contained within.1003

While the retention of a DNA sample does indeed create significant ethical issues, it is of slight concern that during the DNA debate it is at times offered as a red herring, to manipulate discourse surrounding the retention of DNA material in general. Its destruction is primarily offered as a reassurance that retained samples will not fall into the hands of insurance companies or be subject to eugenics type research.1004 However, despite the public unease in relation to the state retaining our entire genetic sequence, there are increasing calls from the scientific community that it may be prudent to retain the DNA sample. For example, the European Network of Forensic Science Institute (ENFSI) argues that it is prudent to retain DNA samples in case the current technology or DNA profile loci are subject to change.1005 In contrast, others such as the UK Human Genetics Commission (HGC) have criticised the unnecessary retention of comparator samples.1006 The HGC acknowledged the principal

1004Given the unhealthy history of eugenics and biometric identifiers this may perhaps be a legitimate concern (e.g., the XXY syndrome debacle in the 1960s). See Price WH and Whatmore PB, - Criminal Behavior and the XYY Male” 213 Nature 815 (25 February 1967). Recent trends would suggest that such research may not be confined to the annals of history. For example, 17 research proposals have been submitted and approved by UK DNA Database Strategy Board since 1995. The studies have considered a variety of issues ranging from ethnicity to familial searching. See Bramley B, – DNA databases” in Fraser J and Williams R, Handbook of Forensic Science (Willan Publishing 2009), 331.
reasons for retention, namely quality assurance, retesting and technological development, however, it found that these reasons were not compelling and could be achieved by other methods. 1007

The issue of comparator sample retention or destruction received significant attention during the Law Reform Commissions Consultation Paper and subsequent Report which examined the establishment of a DNA database in Ireland. 1008 In the Consultation Paper the commission held that destroying the comparator sample after a successful profile had been derived and once the criminal case had been finalised 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. 1009 However, the Commission recommendation was subject to criticism. The most persuasive criticism was based on the potential for technological development. Submissions to the Commission claimed that destroying the samples would result in a failure to future proof the database. 1010 The concern is that the database may become locked in outdated technology. The submissions argued that we should focus not on destruction but on security. 1011 Ultimately, the Commission overturned its original recommendation in the subsequent LRC report in which it recommended the retention of comparator samples under strict security measures set out in legislation. If, for whatever reason, a DNA profile is removed from the database and destroyed, the corresponding DNA sample must also be destroyed. 1012

Given the nascent stage of DNA research, continuing research into the human genome and possible future developments, it is submitted that the LRC Report recommendation is correct: at the very least this is an issue that we should attempt to engage in an objective and

1007 Ibid. For example, HGC argued that quality assurance could be achieved by the retention of a sampler number of anonymous samples and that technological developments and retesting could be achieved by re-sampling the original suspects.
1010 Ibid, 60.
1011 Ibid. For example the Commission recommended that samples will most likely be in the form of saliva that has been dried onto paper. Storage of paper at room temperature lends itself to easier security than samples in a freezer. The samples themselves will not be identifiable. Each could be given a bar code. Thus, the profiles will not be traceable to an individual sample without the computer code to link the bar code to the database of names. It would be possible to devise a system that can be checked and audited by an external body to ensure that no abuse has taken place. Ibid.
1012 LRC Report, Law Reform Commission Report: The Establishment of a DNA Database (LRC 78 -2005), 61. Interestingly, the Commission also recommended that the situation be reassessed in five years time in order to determine whether the retention of samples, in addition to profiles is still necessary.
It is currently prudent to retain the DNA samples but subject them to a rigorous safeguard system clearly outlining access, responsibility and penalties for breach of protocol.

6.3.2. Custodianship

In constructing a DNA database, the question of custodianship is of vital importance: if the DNA information is perceived not to be ‘in safe hands’ it may undermine the public trust and legitimacy of the DNA regime as a whole. In general the custodian is responsible for the storage of the DNA profiles and their DNA samples, the routine searching of the DNA database to locate ‘matches’ and then to inform and transfer the information of the ‘match’ to the police (or another assigned body or individual). In addition the custodian is also usually responsible for the security and accuracy of the retained information, the reliability of the entire system and relevant processes, and the removal (amendment) of the information (such as the DNA profiles) when required.

As will be elaborated upon in the next chapter, the Law Reform Commission conducted a detailed analysis of the establishment of a DNA database in Ireland. In its Consultation Paper it conducted a useful review of the available custodianship arrangements for a DNA database. The Commission began by examining the current situation in Ireland. While

---

1013 As Prainsack observes, ‘On the issue of sample storage … it would be desirable to move the focus of public discussion from the supposed danger of sample retention, which in principle enables authorities to obtain information on disease risks and traits of the originator of the sample, to a more sober weighing of the risks and benefits inherent to this practice. Sample retention has clear benefits with respect to confirming a suspected ‘match’ between a crime scene profile and a subject profile, for example. The Home Office’s (2009) proposal to destroy samples as soon as the derived profile has been successfully uploaded to the database seems driven by a desire to anticipate public concerns and appease them preemptively, perhaps to dampen potential resistance to more problematic aspects of proposed policy changes.’ See Prainsack B, ‘Implications for governance’ in Hindmarsh R and Prainsack B (eds), Genetic Suspects: Global Governance of Forensic DNA Profiling and Databasing (Cambridge University Press 2010), 34. The Kopp report made a similar recommendation, ‘the integrity and reliability of crime scene samples, donor and suspect samples throughout the chain of retrieval and submission must be held to ensure integrity’. See Review of Resource Needs in the Forensic Science Laboratory and the Wider Scientific Context in Ireland (Kopp Report 2007), 37; as the report elaborates this will impact a range of Garda processes from arrest and detection of prisoners, to crime scene examination, to the submission of samples to the Garda Technical Bureau and their further transport to the Forensic Science Laboratory.

1014 This issue will warrant further consideration in the next chapter when the proposed Irish position is examined.

1015 LRC Report, Law Reform Commission Report: The Establishment of a DNA Database (LRC 78 -2005), para. 4.03.


Ireland does not have a DNA database at present, the Forensic Science Laboratory (FSL), established in 1975 (as an associated office of the Department of Justice, Equality and Law Reform), is currently the sole provider to the Gardai of DNA profiling (and other forensic techniques) for the purposes of criminal investigation within the State. The FSL is currently located in Garda Headquarters in the Phoenix Park in Dublin and staffed by civil servants from the Department of Justice, Equality and Law Reform.

The Commission then provided a useful overview of the custodian arrangements in a number of common law countries including the US, Canada and the UK. For example in the US the national DNA database (known as the National DNA Index) is maintained by the Federal Bureau of Investigation (FBI). The Combined DNA Index System is subject to external oversight by a public advisory committee (which consists of individuals with the required expertise and a Supreme Court judge) and is also externally monitored and audited by the Inspector General of the Department of Justice Office. The police are also the custodian of the database in Canada.

For further details on the Irish Forensic Science Laboratory (which has been recently renamed Eolaíocht Fhoireinseach Eireann (EFE)), see http://www.foresnicscience.ie.


In 1998 (established by the DNA Identification Act 1994) the United States, on a federal level, established the National DNA Index System (NDIS), which would be facilitated by the Combined DNA Index System (CODIS). The US National DNA Index System is essentially a three tier system: the local databases feed into state databases with the state databases feeding into the National DNA database. CODIS enables DNA profiles to be compared between the NDIS and the various state databases. Local and state DNA databases operate within the specifics of their particular state legislation. Local DNA databases (LDIS) transfer their profiles into the state DNA database (SDIS) which is housed and maintained by a designated state laboratory. The state databases then transfer their DNA profiles to the National DNA databases when obliged by state legislation. See Bramley B, “DNA Databases” in Fraser, J and Williams R, Handbook of Forensic Science (Willan Publishing 2009), 324. To allow for the transfer and comparison of DNA profiles between states and the national database, it was necessary to develop an automated system of exchange. Following the success of a pilot project using CODIS (it was established initially as pilot project in 1990 using 14 states) and local laboratories, The national DNA Database System (NDIS) became fully operational in 1998. As of April 2008 there were 129 local laboratories, 50 state laboratories and two federal laboratories (the FBI and the Army) analysing DNA samples and loading and speculatively searching DNA profiles against the NDIS. When transferring DNA profiles a state must have signed a memorandum of understanding to the effect that they are working in compliance with the FBI standards (such as minimum set of loci for a DNA profile). The US government funds the NDIS, while local and state DNA databases are funded by individual states. For further details see the FBI website: available at: http://www.fbi.gov/hq/lab/codis/clickmap.htm. For an excellent study of US developments see Krimsky S, and Simoncelli T, Genetic Justice: DNA Databanks, Criminal Investigations and Civil Liberties (Columbia Press 2011).


Canada’s DNA database (NDDB) was established in 2000, as part of the DNA Identification Act 1998. As stated on the NDDB website: This legislation allowed a DNA data bank to be created and amended the [Canadian] Criminal Code to provide a mechanism for a judge to order persons convicted of designated offences...
external oversight provided by an advisory committee with a specific position for a representative of the Privacy Commissioner of Canada.\textsuperscript{1024}

In the UK the custodianship of the database has evolved in recent years. Originally custodianship was vested in the UK Forensic Science Service (FSS) under a Memorandum of Understanding with the Association of Chief Police Officers (ACPO) supported by the Home Office.\textsuperscript{1025} However, as a result of public pressure and policy decisions (such as the one to close the FSS)\textsuperscript{1026} the custodianship of the database transferred temporarily to the Home

to provide blood, buccal or hair samples from which DNA profiles will be derived. ‘The law became operational on the 30 June 2000. See \url{http://www.nddb-bndg.org/main_e.htm}. For an excellent account of DNA and the Canadian Criminal Justice system, see Gerlach N, \textit{The Genetic Imaginary: DNA in the Canadian Criminal Justice System} (University of Toronto Press 2004). See also Lalonde S, ‘Canada’s National DNA Databank: A Success Story’ (2006) 39 Canadian Society of Forensic Science Journal 1. The NDDB has two principal indexes: The Convicted Offender Index (COI) is the electronic index that has been developed from DNA profiles collected from offenders convicted of designated primary and secondary offences; the Crime Scene Index (CSI) is a separate electronic index composed of DNA profiles obtained from crime scene investigations of the same designated offences addressed in the Act.

\textsuperscript{1024} See the Royal Canadian Mounted Police, \textit{Annual Report 2008–2009} for further details of custodianship arrangements. Available at: \url{http://www.rcmp-grc.gc.ca/dnaac-adncc/annurp/2008-2009-annurp-eng.htm#kinship}. In accordance with the DNA Identification Act, the RCMP have imposed strict procedures governing the handling of DNA profiles and biological samples to ensure that privacy interests are protected. Information collected by the National DNA Data Bank will be used strictly for law enforcement purposes. All other uses including medical research are strictly prohibited and punishable by law. A National DNA Data Bank Advisory Committee has also been established to advise the Commissioner of the RCMP on matters relating to the establishment and operation of the National DNA Data Bank. See the privacy and security section of the Canadian DNA website. Available at: \url{http://www.nddb-bndg.org/pri_secu_e.htm}. However, DNA sampling is not videotaped.


\textsuperscript{1026} On announcing its plans to close the FSS service in December 2010, the UK government cited that costs were the primary motivating factor: the service was operating at £2 million loss a month. In addition police had informed the government that the increase in private market laboratories offering forensic science services would result in reduced costs opportunities for the police in the external market. In a written statement to MPs, the government announced that it had to take clear and decisive action to sort out the FSS after it got into serious financial difficulty … The police have advised us that their spend on external forensic suppliers will continue to fall over the next few years as forces seek to maximise efficiencies in this area … We have therefore decided to support the wind-down of the FSS, transferring or selling off as much of its operations as possible.’ ‘Forensic Science Service to be wound up’ \textit{BBC News} (14 December 2010), available at: \url{http://www.bbc.co.uk/news/uk-11989225}. For criticism of the government’s decision to close the FSS see McKie R, ‘Axing of Forensic Science Service may lead to rise in miscarriages of justice, scientists warn’ \textit{The Observer} (12 February 2012). The House of Commons Science and Technology Committee has opened an inquiry into the closure of the FSS. The terms of reference for the inquiry have been announced as follows: What will be the impact of the closure of the FSS on forensic science and on the future development of forensic science in the UK? What will be the implications of the closure on the quality and impartiality of forensic evidence used in the criminal justice system? What is the financial position of the Forensic Science Service? What is the state of, and prospects for, the forensics market in the UK? Specifically whether the private sector can carry out the work currently done by the FSS. The volume and nature of the forensic work carried out by police forces will also be examined in this light. What are the alternatives to winding down the Forensic Science Service? So far as they are known, are the arrangements for closing down the FSS, making staff redundant and selling its assets adequate? The Forensic Science Society will be making a submission to the Committee on those points from the list above on which it is fully able to comment.’ See Rincon P, ‘MPs to probe closure of forensic science service’ \textit{BBC News} (19 January 2011), available at: \url{http://www.bbc.co.uk/news/science-environment-12230878}. 

Office before being transferred to the National Policing Improvement Agency (NPIA). The NPIA is responsible for overseeing the day to day operations of the National DNA Database service, ensuring that it is operated in line with agreed standards and that the quality and integrity of the service is protected.\footnote{See National Policing Improvement Agency (NPIA) website for further details, available at: http://www.npia.police.uk/en/8934.htm. In the NDNAD Annual Report for 2006/07, it reported that the NPIA had taken over custodianship of the NDNAD. The decision to transition the FSS in to becoming a government owned company resulted in a rethink on custodianship and ownership of this sensitive and critical national system. As an interim measure the custodianship role was transferred to the Home Office in 2005 and following the launch of the NPIA in 2007, the custodianship role came across to the new organisation. This ensures that control and ownership of the DNA data remains within a wholly governmental organisation. A decision has now been taken, endorsed by the NDNAD Strategy Board and given Ministerial approval in March 2008, to take this process one stage further and to physically transfer the NDNAD itself from the FSS into an NPIA secure environment together with its associated staff and services. This project is being delivered as part of the NPIA Forensics programme and is on course for completion by the end of 2009. See http://www.npia.police.uk/en/docs/NDNAD07-09-LR.pdf.}

Having conducted an international assessment, the Commission considered three options for the custodianship of the database in Ireland: maintaining the status quo by granting custodianship to the FSL, maintaining the FSL but establishing a new independent body to act as custodian of the database or create a new statutory, independent body (which would subsume the FSL) and act as the custodian of the database. On the first issue, maintaining the status quo, the Commission noted a number of favourable reasons for adopting this approach: namely, cost saving and pragmatism.\footnote{LRC, Law Reform Commission, Consultation Paper on the Establishment of a DNA Database (LRC CP – 2004), para. 8.05. As this approach would remove the need to create a new agency, it is argued that it would be less resource intensive, in both hiring and training of staff.} However, despite acknowledging the competence, efficiency, independence and integrity of the FSL, the Commission highlighted that given the close relationship (in terms of location and access) there is a public perception that the FSL is not distinct or independent from the Gardai.\footnote{Ibid. para. 8.06. For example, 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 during which 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.’} Similarly the 2006 Kopp Report (a report assessing the forensic resource needs in Ireland)\footnote{In 2006 the government appointed Professor Ingvar Kopp (a former director of the Forensic Laboratory in Sweden) to conduct a review of the resource needs of the Forensic Science Laboratory and the wider scientific context in Ireland. The central purpose of the review was to provide an external and expert analysis of the Forensic Laboratory in Ireland in comparison with international best practice. Moreover, it was asked to consider a number of specific issues: to assess the resource needs of the laboratory (particularly as a result of the envisaged increase in activity following the establishment of a DNA database), to recommend how the working relationship with the Gardai could be improved, to clarify the use and presentation of forensic evidence in legal proceedings and to consider means of promoting research and academic links between the academic community and forensic laboratory. For details and recommendations of the report see Review of Resource Needs in the Forensic Science Laboratory and the Wider Scientific Context in Ireland (Kopp Report 2007). Commenting on the report the Minister observed that Overall, the review found that the laboratory compares well in terms of}
laboratory (in the grounds of Garda Headquarters) as ‘completely inadequate’. Moreover, the Law Reform Commission agreed with the argument put forward by the Human Genetics Commission in the UK that allowing a single body to analyse DNA samples and to derive DNA profiles for the purpose of being entered on the database in tandem with acting as custodian of the database creates a potential conflict of interest. Thus to promote independence and minimise the conflict the Law Reform Commission recommended that it is more appropriate to establish a new independent, statutory body to establish and act as the custodian of the database.

The second option considered this issue further (i.e., maintaining the FSL in its current format but creating a new independent body to act as the custodian of the database). Under this regime the FSL would generate profiles which would then be transferred to the independent body which would maintain and manage the DNA database. The independent body would be the sole custodian, conducting searches of the database and informing the police of the intelligence generated from these searches. The primary benefit of this option is that it resolves the potential conflict of interest that was alluded to previously (as the body creating the DNA profiles would be separate from the body maintaining the repository of the

---

1031 Review of Resource Needs in the Forensic Science Laboratory and the Wider Scientific Context in Ireland (Kopp Report 2007), 31. In response to this issue the government has subsequently announced its intention to build a new forensic laboratory in a different location. ‘Work is under way to provide as a priority a new purpose built facility for the Forensic Laboratory. Deputies will be aware that the site is located at the Backweston Complex in Kildare adjacent to the State Laboratory and to the Department of Agriculture, Fisheries and Food’s Agrilabs. This world class state of the art facility will be a major public investment and will facilitate the effective operation of the criminal justice system – including the DNA database – for many generations to come.’ Dermot Ahern, Minister for Justice, Equality and Law Reform, Dail Debates Vol. 675 No. 1, 7 (May 13, 2010). However, as a result of the constrained financial climate in which we now find ourselves, it is unlikely that such a project will be completed in the near future.

1032 See Human Genetics Commission (UK), Inside Information-Balancing Interests in the Use of Personal Genetic Data (May 2002), para. 9.27. Available at: http://www.hgc.gov.uk/insideinformation/index.htm#report. Generally the concept of allowing a body to act both as the custodian of the database and supplier of DNA profiles to the database has long been subject to extensive criticism. See for example, see Human Genetics Commission (UK), Inside Information-Balancing Interests in the Use of Personal Genetic Data (May 2002). Available at: http://www.hgc.gov.uk/insideinformation/index.htm#report.

profiles). However, the Commission concluded that this approach was not practical from an Irish perspective (because of the small size of the jurisdiction and the relatively low number of crime scenes in which DNA samples are located), and introduced an unnecessary level of complexity to the custodianship question. In addition, it created additional risks surrounding the transfer of information between the FSL and the new body.

The third option proposed the establishment of an independent statutory body which would subsume the Forensic Science Laboratory and the DNA database, to be known as the Forensic Science Agency. The Agency would incorporate the current Forensic Science Laboratory and be assigned as the custodian of the DNA database. It would be responsible for both analysing DNA samples to derive a DNA profile and for the storage of the derived profiles (in the form of an electronic repository) and the relevant crime scene and comparator samples. The electronic repository (i.e. the DNA database) would be assigned to a particular Department within the Agency. The Agency would house the database division in a separate department to the FSL. The Commission found in favour of the third model, arguing that it ensures that both the obtaining and matching of DNA profiles is carried out by a body perceived publicly as independent. While acknowledging that the body would be funded from the public exchequer, the LRC argued that while the general purpose of the Agency would be specifically outlined in legislation (and the minister may implement various policy decisions) the day to day operations and general operation of the Agency would be free from outside interference. To promote objectivity and independence the Agency would be governed by a board which would be subject to external oversight. The membership of the board and the relevant oversight measures will be discussed further below.

---

1036 Ibid. para. 4.13.
1037 While the adoption of such a system would present risks surrounding data/information disclosure between the institutions, such risks could be minimised by establishing sufficient safeguards and buffers to minimise such risks. This concept is regularly deployed in other areas such as banking and business, and is known as establishing ‘Chinese Walls’. It is defined as an ethical barrier between different divisions of a financial (or other) institution to avoid conflicts of interest. See Sullivan D, “Big Boys and Chinese Walls” (2008) 75(1) The University of Chicago Law Review 533.
1039 The Commission argued that the courts service could provide a blueprint for the new Agency. The Courts service was established as an independent corporate body following the enactment of the Courts Service Act 1998. See LRC Report, *Law Reform Commission, Report: The Establishment of a DNA Database* (LRC 78 -2005), para. 4.09.
A related factor is whether the body should be a private or public institution. Associated with this is whether police should compensate the body for work conducted (including the creation of a DNA profile and the searching of the DNA database). The argument in favour of privatisation is that the cost of submitting a sample and requesting that it be searched on the database may act as a deterrent against police ‘frivolously’ using the services of the body. However, the Law Reform Commission found that a strictly commercial model was undesirable, citing the complexity involved in adopting such a model and the fact that it would redefine the current remit of the forensic science services in Ireland. Despite the rejection of the commercial model the Commission did recognise the need for the Forensic Science Services to be adequately funded.

6.3.3. Codes of Best Practice

Central to the collection, retention and use of DNA in the criminal process is the need to create adequate regulations and codes of best practice, covering areas such as the taking of samples, transmission of comparator samples to the laboratory, the transmission of crime scene samples to the laboratory, the communication of results from the laboratory to the Gardai, the storage of DNA samples and the presentation of such evidence in a court of law. As the Kopp Report observed there is a need to develop a framework to ensure optimum usage and delivery of forensic science. It will provide the basis on which to develop codes of practice and protocols required by legislation. The core of the proposals is to establish an effective two way communication flow and provide a mechanism to facilitate

---


1041 LRC Report, Law Reform Commission, Report: The Establishment of a DNA Database (LRC 78 -2005), para. 4.12, noting that "the Commission is of the opinion that any such model would require focused and detailed debate regarding the advantages and disadvantages of what would be a far-reaching transformation of the forensic service in Ireland'.

1042 The importance of adequate funding cannot be overstated. The issue of resources and adequate funding was subject to an extensive examination in 2006 in the Kopp Report. See Review of Resource Needs in the Forensic Science Laboratory and the Wider Scientific Context in Ireland (Kopp Report, 2007).

1043 The absence of such codes increase the chances of mistakes occurring. For example, in 2004, a prosecution error led to a witness in court being informed that he was HIV positive. "Witness told in court he has HIV" The Guardian (25 May 2004); "Inquiry into HIV court blunder" BBC News (25 May 2004).

See LRC Report, Law Reform Commission, Report: The Establishment of a DNA Database (LRC 78 -2005), para. 4.21 "The Commission recommends that stringent and effective safeguards be put in place to ensure that all biological samples are stored under appropriately secure conditions. An expert study should be carried out to determine the precise form that the measures should take”.

263
mutual accountability and demonstrable transparency in the processing of DNA samples'.  

Additionally, it is important during the creation of a DNA database that there is a concerted effort to implement a forensic investigation and awareness training strategy.  

When establishing codes of best practice, it is important during the consultation phase that a wide a range of stakeholders are involved in the process, inter alia, human rights advocates, legal practitioners and international representatives (with comparable experience), and that it is not limited to those with a vested interest in its use (namely, the Gardai, the laboratory and other relevant stakeholders such as a private research company developing DNA profiling techniques). In addition it is important that codes of best practice address the full range of issues that are created by the collection, retention and use of the genetic information. It is important, and a benefit of adopting a reflective approach, that codes should attempt to reflect the developing/emerging issues surrounding the potential use of novel DNA practices such as familial searching, phenotype searching and surreptitious sampling.  

As it is impossible for legislation and codes of practice to cover the full range of issues created by the application of a procedure or practice a central benefit of the reflective framework is its ability to evolve with the technology and fill in identified gaps.  

Moreover it is imperative that there are measures (such as effective oversight) established to ensure that the Gardai (and the laboratory technicians) operate in a manner outlined by these codes of best practice; similarly the necessary resources must be provided to allow these codes to be implemented and maintained at the desired level.  

At all times a theme of diligence must run through the culture and frameworks underpinning the use of DNA within the criminal process. The junk in/junk out concept alluded to in chapter two is intrinsically linked to the early collection, handling and analysis stages of the process. As a result an effective and reliable database (and any subsequent results) is directly linked to the manner in which the technology is utilised by the early stakeholders in the process. Thus integrity is dependent on co-dependency between the police and the forensic laboratory; as the Kopp Report observed in the context of reliable  

---

1045 For a list of the various proposed measures see Review of Resource Needs in the Forensic Science Laboratory and the Wider Scientific Context in Ireland (Kopp Report 2007), 36.  
1046 As the LRC Report, para. 4.29 recommends it is imperative that an efficient system be designed to ensure that both the DNA profiles and samples are destroyed as provided by legislation’. See LRC Report, Law Reform Commission, Report: The Establishment of a DNA Database (LRC 78-2005) See also LRC Report, draft Bill 2005, s. 24(2)(b).
evidence there is a co-dependency on processes conducted throughout the exhibit cycle within An Garda Síochána and the processing of samples in the laboratory.1047

6.3.4. Oversight

Linked to the establishment of codes of best practice is the development of adequate oversight arrangements. It is important that the procedures and regulations are adhered to. In the absence of effective oversight procedures, the concern is that codes of best practice may not reflect the practical reality of a situation. Therefore to prevent merely illusory safeguards it is important that clear regulations and codes of best practice are subject to appropriate review and oversight.

Legitimate oversight should consist of regular reviews (both internally and externally). Internally the role should be tasked to an individual (such as a compliance officer whose role is independent from those engaged in the process). However, while the establishment of internal review procedures is a welcome endeavour, it is submitted that to maintain the legitimacy of an institution and a mechanism (such as a DNA database) it needs to be subject to regular external oversight.

External review and oversight should be vested in an independent external body. Under the Law Reform Commission's recommendation (to establish an independent Forensic Science Agency), it recommended that the Agency (and the bodies within the Agency such as the FSL) should be subject to independent review.1048 The goal of such reviews (which should be conducted regularly) is to ensure that the security and integrity of the body is being maintained. Similar recommendations were proffered by the Kopp Report in the context of a DNA database. It recommended legislative arrangements for the establishment of an oversight body to monitor the operation of the database. The body would be responsible for publishing reports on the operation of the database, whilst also developing codes of best practice for a myriad of issues involved in the use of DNA in the criminal process.1049

The importance of establishing independent oversight of the database and the use of DNA in the criminal process more generally has long been on the agenda in the UK. For example, 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_.\(^{1050}\) Such a body was created in the UK, referred to as the National DNA Database Strategy Board. It operates under the tripartite arrangements for the governance of policing, comprising members from the Association of Chief Police Officers, the Home Office and the NPIA (the National Association of Police Authorities). Representatives from the Human Genetics Commission and the Information Commissioners Office also sit on the Strategy Board.\(^{1051}\)

It is imperative that the independent review committee has the necessary expertise to competently and adequately conduct a comprehensive review (which in the case of DNA and

---

\(^{1050}\) See House of Lords Select Committee on Science and Technology Human Genetic Databases: Challenges and Opportunities (HL Paper 57 20 March 2001), para. 7.66. The UK Human Genetics Commission made a similar recommendation, focusing on the lack of independent external oversight involved in the process. It argued 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_, see Human Genetics Commission (UK), Inside Information-Balancing Interests in the Use of Personal Genetic Data (May 2002), para. 9.32. Available at: http://www.hgc.gov.uk/insideinformation/index.htm#report. It offered four recommendations: that the National DNA Board should encompass lay members; the creation of a new independent advisory body (which would report to the National DNA Board and provide oversight for the entire DNA process from the collection and taking of samples to the generation of DNA profiles); the operation of the National DNA Database and the role of the custodian should be independent from the FSS; finally, the creation of a new independent body to maintain a DNA databank of DNA samples. Given the sensitive information contained within DNA samples it was argued that stringent security measures need to be established. A similar view was recommended by the Australian Law Reform Commission, which argued that an independent body should house the DNA samples as opposed to the laboratory that generates the DNA profiles. See Australian Law Reform Commission and the Australian Health Genetics Committee Report – Essentially Yours: The Protection of Human Genetic Information in Australia (ALRC 96, 2003), paras 41.112–41.149.

\(^{1051}\) It is argued that this approach provides accountability to the police service, parliament and ministers. In addition there are representatives from the Association of Chief Police Officers Scotland, the National Policing Improvement Agency, including the NDNAD Delivery Unit, the NDNAD Ethics Group, the Human Genetic Commission and the Forensic Science Regulator. A representative from the Information Commissioner is also a member in an observational capacity and the board may seek expert advice as necessary. Advice is provided by an independent NDNAD Ethics Group on the NDNAD Strategy Board on matters referred to it by the board. For a detailed overview of the governance arrangements see Human Genetics Commission, Nothing to Hide, Nothing to Fear: Balancing Individual Rights and public interest in the governance and use of the national DNA database (Human Genetics Commission 2009), 100. The inclusion of a human rights and ethical representative on the board had been a subject of a lengthy campaign. In 2007, when the Home Office advertised positions for the establishment of an ‘Ethics Group of the National DNA Database’ (including Chair and eight members), the advertisement highlighted the importance of establishing such a group _Independent ethical advice and input is necessary to ensure that appropriate account of a wide set of views, and protection of individual rights, is retained in the decision-making process._ See The Times (UK) (13 March 2007).
a DNA database involves a range of complex issues). It is submitted that the Canadian approach provides an instructive approach for overseeing a forensic DNA program. Their national database (which is maintained by the Royal Canadian Police) is subject to review and oversight by an advisory committee (which includes experts in policing, privacy (in the form of the Privacy Commissioner in Canada), bioethics, genetics, medical ethics and law). The inter-disciplinary committee is entrusted with seeking a balance between the concerns (such as ethical and human rights) and the use of DNA technology. In the past, the committee has spoken favourably about the emphasis on human rights (such as privacy) provided by the adoption of such an approach, [the committee] applauds the amended safeguards established to protect the privacy and security of convicted offenders DNA'. The Canadian approach accords with the recommendation of the Law Reform Commission. The Commission recommended that the Forensic Science Agency should be governed by a board comprising of individuals with relevant and varied expertise, but who are independent from government.

It is suggested that independent review of the database and the forensic laboratory should enable verification that standards and protocols are maintained to the requisite level of international best practice. In addition, there is a growing trend among international jurisdictions to establish independent ethical oversight or advisory bodies in the area of

---

1052 The Commission suggested that on the issue of creating DNA profiles for the database the body (FSL) conducting this process should be subjected to a separate independent review. It was argued that the laboratory which would be responsible for profiling and storing the DNA samples should be accredited under the ISO 17025 standard and would thus be subject to reviews by the Irish National Accreditation Board. For further information on the Irish National Accreditation Board see http://www.inab.ie. The Irish National Accreditation Board (INAB) is the national body with responsibility for accreditation in accordance with the relevant International Organisation for Standardisation ISO 17000 series of standards and guides and the harmonised EN45000 series of standards. The accreditation programme involves establishing and inspecting protocols and procedures for matters such as documentation, security, methodology, laboratory equipment, calibration, evidence management, reporting, and validation methods and training, which are then subject to external audit by INAB (the audit conducted by independent experts with the necessary expertise). An accreditation licence can be withdrawn if the organisation fails to meet the requisite standards. Currently the FSL has obtained the necessary accreditation for its practices and procedures for creating DNA profiles. LRC Report, Law Reform Commission, Report: The Establishment of a DNA Database (LRC 78 -2005), para. 4.10. See Annual Report of the National DNA Bank Advisory Committee, 2002, available at http://www.rcmp-grc.gc.ca/dna_ac/index_e.htm.

1053 LRC Report, Law Reform Commission, Report: The Establishment of a DNA Database (LRC 78 -2005), para. 4.13. The Commission specifically noted that the board should contain a representative from a human rights organisation, forensic organisation (separate to the FSL), data protection, Gardai and the state laboratory.

6.3.5. Deterrents and Limitations

To ensure compliance with the regulations and relevant codes of best practice it will be important to establish adequate deterrents. Two notable approaches are establishing penalties for a deliberate or reckless breach of a procedure or provision and/or creating a rule that a deliberate or reckless breach of a procedure will prevent the derived information being utilised in a trial setting.

In addition, it is also imperative that legislation provides specific rules outlining how such information can be utilised within the process (e.g., a DNA profile may be entered on the DNA database but may only be searched against specific indexes, such as a crime scene index). For example, in Canada the circumstances under which this information can be communicated are clearly outlined by statute. It limits access and use of forensic analysis, which is defined by the Canadian Criminal Code as comparison of DNA sample with results of DNA from crime scene sample.

In the UK, the statutory basis for the storage of samples and profiles is contained in section 64(a) of PACE, which limits the use of profiles to purposes related to the prevention or detection of crime; the investigation of an offence; the conduct of a prosecution or the identification of a deceased person or of the person from whom the body part came. It is submitted that these uses are vague and thereby at risk of abuse and misinterpretation. For example, there is no definition of the purposes related to the prevention or detection of crime, which could theoretically enable the retained DNA material to be utilised for a wide range of other purposes.

---

1056 For example in the area of genetics and policing, the Home Office in the UK established the NDNAD Ethics Group in 2007. It is a non-departmental public body created to provide closer scrutiny of the NDNAD. Its remit includes advising the Home Office on the ethical issues of the management, operation and use of the NDNAD, including applications for research involving access to NDNAD samples of data. See Human Genetics Commission, Nothing to Hide, Nothing to Fear: Balancing Individual Rights and public interest in the governance and use of the national DNA database (Human Genetics Commission 2009), 103. For wider ethical considerations see Gibbons S, Kaye A Smart C, Heeney C and Parker M, “Governing Genetic Databases: Facing Research Regulation and Practice” (2007) 34(2) Journal of Law and Society 163.

1057 Penalties could take the form of a monetary fine, dismissal from occupation and/or imprisonment. For example in Canada, unauthorised disclosure of DNA information is subject to criminal penalties of up to $250,000 and/or up to one year in prison.

1058 However, in reality the operation of such a rule would provide difficult as the admissibility of evidence at trial is invariably a judicial decision. This issue will receive further consideration towards the end of the Irish chapter when considering comparable Irish developments in this area.

1059 Section 6 DNA Identification Act.

1060 Section 487.08 (1).
range of purposes which are generally related to the prevention and detection of crime. Thus given the sensitivity of the information involved, ambiguous or open-ended legislative provisions need to be avoided.

6.3.6. Transparency

The rules governing a system (including a DNA collection, retention and use) must be underpinned by a number of values: explicitly clarity, transparency, accessibility and accountability. The need for transparency is heightened when it involves the use of technology by the police to obtain and store information from the populace. The public should be kept abreast and be engaged in civic dialogue about the workings, procedures and performance of these policing mechanisms. In addition, the legitimacy of a transparent system should be assured by independent oversight.

6.3.7. Utility

Of central importance is the need to avoid the use of rhetoric and engage with the public in an open, transparent and dispassionate debate about the use of DNA profiling within the investigative phase of the criminal process. To allow for such discussion it is important that we return to first principles and attempt to establish how useful DNA profiling or a proposed concept (such as a DNA database) is for criminal investigations. Within the literature such usefulness is captured within the phrase utility. Utility in this sense means a method of objectively assessing performance. For example in the context of a database, the Human Genetics Commission in the UK has attempted to create a tangible metric by aligning database utility to the benefits a database match has on associated police performance (i.e. did

\[1061\] For example in the Netherlands, the custodian of the database makes detailed statistics about the size of the database, the match reports issued, and a range of other information available through its website. See [http://www.dnasporen.nl](http://www.dnasporen.nl). See Williams R and Johnson P, Forensic DNA Databasing: A European Perspective (Welcome Trust 2005), 97. For a recent analysis of the Netherlands DNA system see Toom V, Forensic DNA Databases in England and Wales and the Netherlands: governance, structure and performance compared (2012) 31(3) New Genetics & Society 311.


\[1063\] For discussions on the utility of a DNA database see McCartney C, Williams R and Wilson T, The Future of Forensic Bio-information (Nuffield Foundation 2010); Human Genetics Commission (UK), Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance and use of the National DNA Database (November 2009).
it lead to the apprehension of a perpetrator or the solving of a crime), it states that _the extent to which a database produces measurable improvements in the police’s performance in correctly identifying and distinguishing offenders in relation to particular reported crimes_.

However the concept of _utility_ within the DNA profiling debate is fraught with difficulty. For example, using a DNA profiling within a criminal investigation involves a myriad of potential issues and outcomes, _inter alia_: expediency for the investigation (e.g. how quickly people are included and excluded from an investigation); no-suspect leads generated from use (i.e. whether police would have solved such a crime without the direction from the cold hit); potential tunnel vision from false positives derived from the initial match (whether police would have solved such a crime more quickly if it had not been for the initial miss-direction) – thus it may be difficult to ever precisely assess the exact benefit that the use (or failure to use) a DNA technique or procedure had had within a particular criminal investigation.

However, despite difficulties in defining its use such a review process should be conducted in every country that intends to implement a database or a particular DNA procedure. For example in the context of the database, in small countries with relatively low crime rates, one has to question whether a database is actually of substantial benefit or whether, given the currently constrained financial climate, resources may be better directed elsewhere. Often politicians will cite the benefits of establishing a DNA database, however, recent research has indicated that statistics cited during this debate are often inflated and taken out of context. For example a cursory glance at the UK Annual DNA Database Report in 2004-05 shows the Home Office reported that the UK DNA database resulted in an impressive 19,783 crime detections. Interestingly, however, when one considers the figures further they reveal that DNA was only involved in 0.35 per cent of recorded crime cases in the same year.

---

1065 See Human Genetics Commission (UK), _Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance and use of the National DNA Database_ (November 2009), 65.

1066 _National DNA Database Annual Report 2003–2004_, 23, available at www.fss.gov.uk. For further reading on DNA detection rates see McCartney C, _Forensic Identification and Criminal Justice: Forensic Science, Justice and Risk_ (Willan Publishing 2006), 57–60. This manipulation of figures and statistics was observed by the ECtHR in _Marper_. The Court observed that _the statistical and other evidence, which was before the House of Lords and is included in the material supplied by the Government appears impressive, indicating that DNA profiles that would have been previously destroyed were linked with crime-scene stains in a high number of cases_, however, the impressive statistics did not withstand scrutiny, with the Court concluding _neither the statistics nor the examples provided by the Government in themselves establish that the successful identification and prosecution of offenders could not have been achieved without the permanent and indiscriminate retention of the fingerprint and DNA records of all persons in the applicants’ position_. The ECtHR observations raise
For the purposes of clarity it is important to distinguish between a match and a detection. A ‘match’ refers to two profiles matching on the database.\textsuperscript{1067} For the purposes of statistics it is important to search for DNA detections as opposed to DNA matches. DNA ‘detection’ refers to a situation in which a DNA match was central to the identification of a suspect and aided in the solving of a crime.\textsuperscript{1068} However, even when presented with DNA detections one has to be careful not to ‘inflate’ their utility. DNA profiling rarely operates on its own: it is often conjoined with other policing techniques to bring a perpetrator to justice. As Williams and Johnson observe, ‘Many government statements have commended the power of the NDNAD at supporting the investigation of crime, and there can be no doubt that it has added significantly to police effectiveness, but exactly how much and in what ways still remain relatively unexplored.’\textsuperscript{1069} Thus caution and increased research is needed to paint a clearer picture of how ‘valuable’ DNA profiling and databasing is to criminal investigation.\textsuperscript{1070}

Even if one were to ignore the interplay between DNA profiling and other policing techniques, an examination of the UK DNA detections since the beginning of the DNA Expansion Program presents a less than impressive return on the dramatic increase in the comparator profiles retained on the NDNAD. The number of DNA detections made each year using the NDNAD has decreased since its peak in 2002/03, despite the database almost
tripling in size, and the proportion of DNA detections per recorded crime has remained at approximately 0.37 per cent.\textsuperscript{1071}

\textbf{UK National DNA Database Detections: 98–99 to 2008–2009}\textsuperscript{1072}

<table>
<thead>
<tr>
<th></th>
<th>98–99</th>
<th>99–00</th>
<th>00–01</th>
<th>01–02</th>
<th>02–03</th>
<th>03–04</th>
<th>04–05</th>
<th>05–06</th>
<th>06–07</th>
<th>07–08</th>
<th>08–09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparator DNA profiles</td>
<td>517,00</td>
<td>737,000</td>
<td>1,186,00</td>
<td>1,695,00</td>
<td>2,099,964</td>
<td>2,527,28</td>
<td>3,085,66</td>
<td>3,785,71</td>
<td>4,428,76</td>
<td>5,056,40</td>
<td>5,607,614</td>
</tr>
<tr>
<td>DNA detections</td>
<td>6,151</td>
<td>8,612</td>
<td>15,894</td>
<td>16,594</td>
<td>21,098</td>
<td>20,489</td>
<td>19,873</td>
<td>20,349</td>
<td>19,949</td>
<td>17,614</td>
<td>17,463</td>
</tr>
<tr>
<td>Recorded crimes (RC)</td>
<td>5,109,089</td>
<td>5,301,87</td>
<td>5,170,43</td>
<td>5,525,24</td>
<td>5,974,960</td>
<td>6,013,579</td>
<td>5,637,511</td>
<td>5,555,174</td>
<td>5,427,559</td>
<td>4,950,71</td>
<td>4,703,572</td>
</tr>
<tr>
<td>% RC &amp; DNA</td>
<td>0.12</td>
<td>0.16</td>
<td>0.29</td>
<td>0.29</td>
<td>0.35</td>
<td>0.34</td>
<td>0.35</td>
<td>0.37</td>
<td>0.37</td>
<td>0.36</td>
<td>0.37</td>
</tr>
<tr>
<td>Crime scene DNA added per year</td>
<td>11,951</td>
<td>16,844</td>
<td>27,104</td>
<td>40,296</td>
<td>61,431</td>
<td>60,226</td>
<td>59,247</td>
<td>68,774</td>
<td>55,217</td>
<td>50,579</td>
<td>49,572</td>
</tr>
<tr>
<td>Comparator DNA profiles added per year</td>
<td>243,199</td>
<td>213,075</td>
<td>389,951</td>
<td>501,212</td>
<td>488,519</td>
<td>475,297</td>
<td>521,118</td>
<td>715,145</td>
<td>722,476</td>
<td>591,028</td>
<td>580,174</td>
</tr>
<tr>
<td>Direct DNA detections</td>
<td>0.51</td>
<td>0.51</td>
<td>0.55</td>
<td>0.39</td>
<td>0.34</td>
<td>0.34</td>
<td>0.34</td>
<td>0.30</td>
<td>0.36</td>
<td>0.35</td>
<td>0.35</td>
</tr>
</tbody>
</table>

The majority of the detections involve matches between known suspects and crime scenes, or matches between a newly arrested individual and a crime scene profile (i.e. they are matches which do not require the retention of individuals’ records on a database). From available Home Office figures, Genewatch report that it is possible to estimate that only about 0.03 per cent of solved crimes involve matches between a crime scene DNA profile and an individual’s stored DNA database record as the first link to the suspect.\textsuperscript{1073} The majority of these offences are volume crimes, such as burglaries and thefts. This has led to a growing number of calls to expand the use of DNA databases to focus upon the investigation of

\textsuperscript{1071} Refer to table for breakdown of statistics.
\textsuperscript{1072} Sources: National DNA Database Annual reports since 2002/03. Earlier figures obtained from Hansard reports 10 September 2008: Column 1866W. Available on: \url{http://www.parliament.the-stationery-office.co.uk/pa/cm200708/cmhansard/cm080910/text/80910w0018.htm}.
\textsuperscript{1073} See Genewatch UK response to the Northern Ireland Department of Justice Consultation on Proposals for the Retention and Destruction of Fingerprints and DNA in Northern Ireland (June 2011), 5. Available at: \url{http://www.genewatch.org/uploads}.
volume crimes as opposed to more serious offences, arguing that such an approach raises the efficacy of the database.\textsuperscript{1074}

In 2008/2009, less than 1 per cent of DNA detections were for serious sexual offences (such as rape) or for homicide offences. Research seemingly indicated that the majority of detections involved persons who have previous convictions. Further evidence undermining the retention of comparator DNA profiles has been produced by a recent research study conducted by RAND Corporation in the United States.\textsuperscript{1075} The study examined the DNA policies of the United Kingdom and the United States. The report found that the number of crimes detected using DNA is driven by the number of crime-scene DNA profiles loaded on to the database, not by the number of individuals’ DNA profiles retained. As the RAND report states:

In assessing how DNA analysis is used to aid investigations in the U.S. system, we found that database matches are more strongly related to the number of crime-scene samples than to the number of offender profiles in the database. This suggests that _widening the net_, which research indicates has only a minimal deterrent effect, might be less cost-effective than allocating more effort to samples from crime scenes. Indeed, the UK Home Office reached this same conclusion in an analysis of its National DNA Database (NDNAD) performance.\textsuperscript{1076}

\textsuperscript{1074} McCartney C, Williams R and Wilson T, The Future of Forensic Bio-information (Nuffield Foundation 2010), 44–45. For a recent account of the relationship between DNA and volume crimes in Australia, see Raymond JJ, “A criminalistic approach to biological evidence: trace DNA and volume crime offences” Australian Digital Theses Program (ADT), available at: http://epress.lib.uts.edu.au/dspace/handle/2100/1131. In short the study found that while in theory DNA can be particularly useful for volume crimes (such as burglary and theft) in practice it is heavily dependent on the circumstances (the longer a crime scene is left, the greater the chance that the DNA samples will become degraded or contaminated), additionally the study found that of central importance to using DNA in investigating volume crimes was the provision of adequate resources (it is an expensive endeavour both in terms of fiscal costs involved in the analysis of the samples and the manpower costs involved for the police investigating the large number of samples that may be present at a crime scene). For an interesting analysis of DNA trace evidence and serial offenders see Lammers M, Bernasco W and Elfers H, “How Long Do Offenders Escape Arrest? Using DNA Traces to Analyse when Serial Offenders are Caught” (2012) 9(1) Journal of Investigative Psychology and Offender Profiling, 13–29.\textsuperscript{1075} Goulka J, Matthies C, Disley E and Steinberg P, Toward a Comparison of DNA Profiling and Databases in the United States and England (Centre on Quality Policing, A RAND Infrastructure, Safety and Environment Centre 2010). See http://www.rand.org/pubs/technical_reports/TR918.html. See also Home Office, Forensic Science and Pathology Unit, DNA Expansion Programme 2000-2005: Reporting Achievement (Home Office 2005).\textsuperscript{1076} Ibid.
Thus these preliminary reports indicate that retention should focus on the increasing collection and retention of crime scene samples as opposed to the retention of comparator profiles on a database.

6.4. Public Trust

Public confidence is vital to the success or failure of any new technology and/or policing mechanism. Integrity, transparency and other factors (such as utility and media commentary) will have an impact upon public trust and confidence. In general public confidence should be fostered by a process of continual civic engagement, education and debate.\(^{1077}\)

Critical to the issue of DNA profiling and DNA databasing is the concept of how the technology is perceived by the public, as Neyround and Disley observe: ‘New technologies have the potential to revolutionise policing. We need to match our attention to their crime-control effects with equal consideration of the ways in which they are portrayed and perceived by the public‘.\(^{1078}\) An interesting issue is the divergent role that DNA can have in the criminal justice system, as Lazer observes ‘the enigmatic‘ nature of DNA in the criminal justice system is publically perceived as both the diviner of guilt and a potential threat to liberty’\(^{1079}\). As Neyround and Disley describe ‘we see some disjuncture in public opinion; on one hand, welcoming the use of DNA when it secures convictions for high profile and serious crimes, but on the other hand fearing the implications of so much genetic information being stored by the state‘.\(^{1080}\)

As Heffernan notes ‘the social implications of this technology are profound and suggest the need for widespread inclusive debate as a prelude to the introduction of adequate and effective regulatory controls‘.\(^{1081}\) Given the sensitive nature of the material involved, to ensure public confidence the state needs to avoid the use of rhetoric and engage with the

---

\(^{1077}\) The use of a civic engagement approach can be seen in the UK Human Genetics Commission role in initiating and managing an independent 2008 UK Citizen’s Inquiry into the forensic use of DNA centred on the UK National DNA Database, particularly on the issue of potential infringements of human rights and civil liberties through the expanding police powers to collect and retain DNA on the UK NDNAD. See UK Human Genetics Commission, *A Citizens Inquiry into the Forensic Use of DNA and the National DNA Database* (2008).


public in an open, transparent and dispassionate debate on the use of DNA in the criminal process. 1082

Of particular importance, as was discussed in chapter two, is the need to demystify the silver bullet rhetoric surrounding DNA evidence that has unfortunately seeped into the public consciousness. As Cole outlines:

Although DNA typing [profiling] can be powerful forensic evidence, it should never be treated as a routine or magical method for generating truth. It will always be important for defence attorneys – and, preferably, independent defence experts – to scrutinize all aspects of DNA evidence, laboratory procedures and proficiency, and statistical arguments. 1083

As Maguire notes debate on this issue would be much more productive if commentators stopped lamenting "unhelpful gross exaggerations and apocalyptic visions of the future" and as Rule observes "playing to the grandstand of alarmed public opinion". 1084 It is submitted that the Forensic Laboratory in conjunction with a human rights body should conduct a regular campaign and provide information to the general public to raise awareness of the use (and inherent issues) involved in utilising DNA within the criminal process.

Unfortunately, given the alluring nature of a DNA database and the increase in the frequency of "signal crimes" solved by DNA, any debate involving DNA and a DNA database is often an emotive topic and susceptible to both media sensationalism and political rhetoric. As Kellie observes media attention that accompanies DNA profiling’s impact upon the criminal process often reflects "populist intent to provide reassurance to a public, who are perhaps losing their faith and confidence in the ability of the criminal justice system to live up to the purpose…of protection". 1085 The main concern surrounding the coverage and debate of DNA and DNA profiling is the lack of objective commentary and the tendency of both sides (those

in favour and those who oppose the application of DNA in the criminal process) to turn to scaremongering and exaggeration to elucidate their point.\textsuperscript{1086}

Voicing an opinion in relation to DNA profiling and a DNA database is not overly problematic. In fact, it is vital that the public should be engaged in and informed of the use of such sensitive material by the state. However, given the sensitive nature of the issue, it is suggested that recent discourse has been top heavy on rhetoric and is helping to foster this _infallible_ perception of DNA. Populist politics and sensationalised media coverage are not new concepts and neither are they restricted to the DNA debate. The problem though is that it can be particularly difficult for the public to separate their emotions and outrage stirred by horrific crimes, therefore it would seem prudent for our elected officials to refrain from _popular punitivism_\textsuperscript{1087} and instead of _fanning the flames_ they should attempt to engage and inform on this issue on an objective and neutral basis.\textsuperscript{1088} As such it is important that we as a society are objectively informed of both the benefits and concerns inherent in the use of DNA in the criminal justice system. As the Human Genetics Commission (UK) observes, _more reliable information about the National DNA Database is made widely available, in particular evidence of its usefulness in investigating crime and leading to the conviction of offenders_.\textsuperscript{1089}

A question to address is who should bear responsibility for informing the public of these issues. The European Network of Forensic Science Institute (ENFSI) has recently recommended that this role should be assigned to the custodian of the database (or in the absence of a database to the body responsible for DNA sampling). In its 2008 report, the ENFSI recommended, _Because DNA databases have a very important but also very delicate

\textsuperscript{1086} For example Webb and Tranter while discussing the ethical issues involved in using DNA profiling suggest that _at a fundamental level what is at stake in (using) DNA profiling is our humanity_. While proponents of a DNA database describe the benefits of DNA profiling with _almost childlike enthusiasm_; _predicated on an assessment that it (DNA profiling) offers truth and proof, (and) can reach back across time and space and link an offender with a crime_. See Webb E and Tranter K, _Genes R Us – ethics and truth in DNA_" (2001) 25 Altern. Law Journal 168–172.


\textsuperscript{1088} As will be further discussed in the next chapter Irish politicians have often been guilty of _fanning the flames_ during high profile criminal incidents in the past. The concern is that instead of objectively tackling the issues the politicians attempt to appease public opinion by becoming _hard on crime_. The myopic nature of this focus is extremely alarming. The use of rushed criminal justice legislation to deal with specific instances and localised problems may seem justified. However, it will be contended that this is an overly micro or narrow view of the goal of the criminal justice system. In fact, such a policy is akin _to the end justifies the means_, which in a macro sense would lead to a potentially unfair system thereby undermining the legitimacy of the system as a whole. See Campbell L, "Criminal Justice and Penal Populism in Ireland" (2008) 28(4) Legal Studies 559–579.

\textsuperscript{1089} Human Genetics Commission (UK), _Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance and use of the National DNA Database_ (November 2009), 94.
role in society, the custodian of a DNA database should develop tools to make objective information about the DNA database available to politicians, the public and the media.\textsuperscript{1090} Assigning such a role to the custodian of the database (or sampling process) is a welcome recommendation, as it is assumed that the custodian of the database should have the necessary expertise to fully and accurately inform the public on the complex issues involved in the DNA profiling process. As Jasanoff observes:

> Granting that high standards are a sine qua non for the responsible use of DNA tests does not, of course, amount to saying that technical standards are the only issue of concern in relation to this infant technology … the challenge is to learn how to govern, rather than be governed by, the power of DNA. If the problem is the broad one of governance, not simply the narrower one of standard setting, what role should experts expect to play in that process? … We need … expert bodies … to help us understand and mediate our relations with DNA-based techniques. In turn, the experts must learn to see their role as integral to democratic governance in what scientists have termed the age of genetics and to conduct their affairs accordingly.\textsuperscript{1091}

However, it is vital to ensure that this information is disseminated in a neutral and objective manner, stressing the need for the custodian of a database to be an independent body (thus avoiding the potential for bias that can result when the stewardship is located within the realms of law enforcement).

However, as the UK Human Genetics Commission (HGC) observes:

> the fundamental questions of public interest, such as how interests in individual privacy and criminal justice should be balanced, have never been subjected to widespread critique … However, it is on these fundamental questions about the relationship between the citizen, society and the state – in other words, questions

about the kind of society in which we want to live – that it is most vital that the public voice is heard.\textsuperscript{1092}

Therefore building upon the sentiments of the UK HGC, it is submitted that the expanded use of DNA in the criminal justice system should be underpinned by national debate, incorporating issues such as the privacy implications and due process concerns involved in the collection, retention and use of DNA during a criminal investigation.

The purpose of public debate is twofold: first, Socratic type dialogue (while potentially time consuming and frustrating) allows the exchange and developments of ideas which predominately result in an enhanced understanding and incorporation of different opinions in the resultant measures. Secondly, engagement with the public will aid in generating increased public trust in the use of DNA in the criminal process and on a macro level the criminal justice system as a whole.\textsuperscript{1093} The UK information Commission succinctly captures the issue in relation to a DNA database:

The NDNAD has developed to its present size and level on a somewhat random basis without any specific statutory basis to underpin it. Many of the current data protection related issues, such as the indefinite retention of personal data and difficulties with the process of getting the police to delete records, have developed piecemeal without meaningful public debate. If public perception is that the value of the NDNAD as a crime detection tool is being overstated to justify certain reductions in personal freedoms, e.g. retention of information on innocent people, then there has to be a significant risk that this will result in a loss of public support and co-operation. In the Information Commissioner's view until such issues are publicly debated and resolved and the NDNAD is put on a proper statutory footing and controlled independently any further expansion of the database could undermine its real value in terms of continued public support.\textsuperscript{1094}

\textsuperscript{1092} Human Genetics Commission, \textit{Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance of the national DNA database} (November 2009), 92.

\textsuperscript{1093} The UK HGC notes that current public opinions are essentially flawed as the debates this far have failed to incorporate the range of options available, as the report notes ‘claims are frequently made for the level of public support for the NDNAD, often backed up by the findings of opinion polls. However, when these take place without access to reliable evidence and exposure to the full range of arguments, they risk doing little more than providing an outlet for generalised and unexamined attitudes towards crime and civil liberties’. Ibid. 93.

\textsuperscript{1094} See Information Commission (response 17) in \textit{Keeping The Right People on the DNA Database: Science and Public Protection – Summary of Responses} (November 2009), 4-5.
Thus it is submitted that prior to the implementation of a new policing mechanism (such as a DNA database) there should be public debate on the issue. Subsequently an active public dialogue should be established to ensure that public confidence is maintained and to enable the approach to DNA technology and criminal justice (and potential developments) to accurately reflect the society in which it is operating.

A fundamental requirement for an ‘accurate’ public debate is that the information provided is sufficient and reliable. It is accepted that information will inevitably be fragmented as, for example, it will be dependent upon the medium in which information is transferred, the vested interests involved in providing the information and how the information is comprehended and understood by the individuals to whom it is provided. Thus as the UK HGC notes ‘Openness (access to information) and transparency with regard to how the information is produced, as well as the amenability of information to non-specialist understanding and appropriate support for the public’s ability to understand and interpret the information, are all important.’ Thus it is recommended that a ‘public awareness’ campaign on DNA profiling and the criminal process should be conducted.

The concern is that if the current level of public engagement is maintained, the public will continue to garner an often manipulated and distorted perception of the ‘utility’ of DNA for the criminal process. Although as Prainsack and Kitzburger observe the proponents of DNA may wish to maintain the current status quo of the ‘under informed public’:

Work in the field of public understanding of science has shown that in the domain of the life sciences, proponents of scientific advance have long sought to overcome the ‘knowledge deficit’ and resistance on the side of ‘non-experts’ by ‘educating’ them ... Our study indicates that the opposite is the case in the realm

1095 Human Genetics Commission, Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance of the national DNA database (November 2009), 93.

1096 For example see recommendation of the Human Genetics Commission, Ibid. 94.

1097 The value of all new technology should be clearly identified, demonstrated, and independently assessed or validated. The concept of value is a difficult concept as the term itself is subjective and will be viewed differently from different stakeholders. For example, police will argue that DNA detections produced a definitive example of the utility of a DNA database, however politicians (whom may be under fiscal restraints) may question the true value of such a DNA detection i.e., could the same result have been achieved through a less costly approach. Similarly human rights advocates may argue that the amorphous concerns such as privacy should create a ‘negative’ element to be deducted from the value of the same DNA detection. Thus as alluded to in the previous chapter care needs to be taken before automatically accepting the ‘benefits’ or ‘value’ of DNA within the criminal process.
of criminal investigation: people in law enforcement authorities often state that the less ‘the public’ knows about police work at the crime scene, the better.  

While divulging the sensitive operational practices of criminal investigators may cause pragmatic concerns, this thesis is not calling for complete disclosure of policing practice, but is recommending that transparency and accountability should underpin general policing practice (including various procedures enabling the collection, retention and use of sensitive biological information such as DNA).

A useful methodology in the UK since the Marper decision has been the approach of utilising Citizens Inquiries in an attempt to capture the public mood and varying attitudes towards the national DNA database. Utilising this public engagement and discursive approach, HGC has suggested that whilst individuals attitudes towards the use of DNA predominately remains the same, there is often a qualification and a deeper understanding of the issues involved as a result of this process. Such an approach aids in maneuvering the DNA dialogue from a ‘language of truth’ towards a new consensus-building –DNA as a language of trust‖ narrative in the context of a governance shift to participatory governance.

Finally, to maintain public trust (and ultimately legitimacy) in a policing procedure there should be adequate accountability and complaints mechanisms inbuilt in the process. Although as Walsh observes, ‘Accountability to the public remains one of the great unsolved challenges of policing not just in Ireland but probably in most common law jurisdictions.

---

1099 The approach was praised by the House of Lords Constitution Committee report Surveillance: Citizens and the State, which noted the benefit of adopting a deliberative approach, noting that ‘impressed by the use of this [Citizens’ Inquiry] technique for eliciting informed opinions by citizens and thus helping to shape policies’ and recommending that ‘the Government ... should explore opportunities for applying versions of the Citizens’ Inquiry technique to surveillance and data processing initiatives involving databases’. Report available at: http://www.publications.parliament.uk/pa/Id200809/Idconst/18/1802.htm, paras 430–432.
1100 ‘What we have learned from deliberative exercises of this sort is that when people are enabled to apply their values to questions about the NDNAD in the light of good-quality information, the outcome is often a confirmation, but almost always a qualification, of their initial position, and this qualification often comes about as a result of insights into the perspectives of others.’ Human Genetics Commission, Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance of the national DNA database (November 2009), 95. Interestingly, the report ‘tentatively’ subdivided the differentiating perspectives towards the use of DNA in the criminal process. It observed five ‘ideal types’, namely, forensic utilitarians, negative libertarians, securitarians, proportionalists and personalists.
However, given the sensitive nature of the material involved in the utilising of DNA in the criminal process, it is imperative that this ‘accountability malaise’ is not allowed to continue. In particular an adequate removal and complaints mechanism needs to be established.  

The right to have one’s information removed from the database is an important issue. Thus to protect against the arbitrary population of the database, the grounds for removal must be clearly outlined, and prolonged retention should be the exception as opposed to the norm (with retention necessitating that strong reasons are proffered for it).

If a DNA profile removal is refused, an individual has the option to submit the case for judicial review. Although the purpose of judicial review is not to appeal the decision (thus assessing the justification around the retention) but to assess the entitlement of the individual making the decision and fairness of the process, i.e. how the decision was made. It is submitted that an independent review procedure should be implemented to enable an individual to appeal his or her subsequent retention. This would allow an independent body to assess the justifications of the case, against clear guidelines for retention, which would potentially avoid the delay and significant cost involved in seeking a judicial review. The body should be independent from the police, yet it should have the necessary expertise to arrive at a fully informed decision.

1103 The retention of an individual’s DNA profile on the database after it has served its purpose or after its legal life is a particularly problematic issue. A concern amongst international jurisdictions is the onus being placed on the individual to seek and ensure removal of the relevant information. For example, removal from the NDIS in the US is governed by the DNA Fingerprinting Act 2005. It does not specify federal retention periods but outlines an expungement policy. It allows individuals who have been arrested or detained (but not charged or convicted) to apply to have their DNA profiles removed from the NDIS (DNA Fingerprint Act 2005 (n.21), 3084-5 (s.1002(2))). Expungement only occurs once the director of the FBI receives a court order stating that the relevant charges have been dropped and the case has been dismissed or has resulted in an acquittal. Therefore the burden for removal rests with the individual. Similarly those who have a conviction overturned may also apply to have their profile removed. See Expungement of DNA Records in Accordance with 42 U.S.C. 14132(d)(1)(A). Available at: http://www.fbi.gov/hq/lab/html/expungement.htm. The expungement policy is similar to the pre-Protection of Freedom Act provision in the UK where an applicant who has been acquitted, released without charge or had proceedings discontinued has to request to have his or her DNA sample destroyed and DNA profile removed from the database, while the decision to do so is at the discretion of the Chief Constable. This approach was subject to substantial criticism in the Marper decision. Moreover provisions will have to be established to verify how a deletion system is actually performs. For example, gaps in information regimes (between for example the custodian of the database and the police) may result in profiles remaining on the database for longer periods than is necessary. For considerations of this and similar issues see ENFSI DNA Working Group, DNA Database Management: Review and Recommendations (April 2010), 14.

1104 As the UK HGC recommends ‘clear and explicit rules for the removal of samples/profiles from the database be drawn up so that consideration and, if necessary, argument can be addressed to whether a given case falls under that rule’. See Human Genetics Commission (UK), Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance and use of the National DNA Database (November 2009), 102.

6.5. Conclusion

It is essential that strict, transparent safeguards and procedures are established for the use and application of DNA in the criminal justice system, as the chairman of the UK NDNAD Strategy Board observes, “If DNA technology is to continue to be an important tool in the drive to reduce crime and detect offenders, it is vitally important that those charged with the responsibility of managing and operating the Database do so in an environment of integrity, probity and independent scrutiny.” While the chairman’s comments focus specifically on a DNA database, it is argued that the underlying sentiment can be extended to the entire use of DNA profiling in the criminal process.

This chapter has proffered a governance regime predicated upon two central concepts, integrity and public trust. The concepts rely on establishing adequate ‘notches’ (such as safeguards for the retained information, custodianship, codes of best practice, external oversight and penalties for breach of use) which aim to protect the human rights and due process concerns of those targeted by the process. Additionally, in keeping with the ‘reflective’ regulatory framework it postulated that such ‘notches’ should be situated against a backdrop of civic engagement and debate, which will aid in fostering ‘a narrative of trust’ in DNA technology. It is submitted that such an approach will enable the continued use and integration of DNA into the criminal process but will provide an adequate means of utilising its benefits whilst concurrently adapting and evolving to ensure that the individuals targeted by the process are sufficiently protected.

Chairman of the NDNAD board. See NDNAD Annual Report 2003–4, available at www.forensic.gov.uk, 4. As McCartney observes, “During the criminal process, the standards required of forensic evidence need to be high to minimise the risks of wrongful conviction based upon flawed or weak scientific evidence. There needs to be greater scepticism of the power of forensic science to avert risk, bring certainty to the criminal process and to provide security for society, and less reference to new technologies to justify the removal of safeguards and protections for individuals and society.” See McCartney C, Forensic Identification and Criminal Justice: Forensic science, justice and risk (Willan Publishing 2006), 213–214.
7. Ireland and DNA profiling: A critique

7.1. Introduction

On 19 January 2010 then Minister for Justice, Equality and Law Reform, Dermot Ahern introduced plans to establish a DNA database in Ireland. Given the sensitive issues involved in affording the state the right to collect, retain and subsequently use an individual’s genetic information for the purposes of criminal investigation, it was encouraging to hear the minister note on introducing the Criminal Justice (Forensic Evidence and DNA Database System) Bill to the Oireachtas that close attention was paid to finding the right balance between, on the one side, the public interest in the detection of crime and securing justice for victims and, on the other, the rights to bodily integrity and privacy (emphasis added). It is unsurprising that the then minister began his speech by stressing the importance of achieving balance within this debate. As was introduced in chapter one and illustrated in chapter three there are key balances to be struck when establishing a DNA database, ranging from bodily integrity and privacy issues associated with collection and retention respectively to due process concerns and ethical issues surrounding how the DNA information is used and maintained in the criminal process.

The concern from an Irish perspective is that in recent times the rights and due process protections afforded to the individual have been increasingly diluted as the state has continually waged a war on the crime crisis in Ireland. Of particular relevance has been the growing prevalence of organised or gangland crime. Sensationalist media coverage

---


1110 Although ‘criminal organisation’ was defined for the first time in s.70 of the Criminal Justice Act 2006, the term ‘organised crime’ has been long used in political debates, media commentary and other forums. See
and reactionary politics have combined to create an environment in which individual rights often take a "back seat" to assuage the growing levels of public concern and anxiety.\textsuperscript{1112} It is submitted that within this populist environment the introduction of a DNA database (and the use of DNA more generally) needs to be located within an appropriate framework that will ensure that the human rights and due process concerns of those targeted by the process are adequately protected. In the absence of such an approach, the use of DNA profiling within the criminal process is susceptible to rapid function creep and expansion (which are aided in particular by its capacity to assist in solving signal crimes). The concern from an Irish perspective is that Irish governments have a precarious history of falling "victim" to populist

\begin{flushright}
\end{flushright}

\textsuperscript{1111} While the term "gangland" is typically linked to the phrase "gangland killing", which generally refers to a planned homicide effected with the use of a firearm, previous Ministers for Justice, Equality and Law Reform have argued that the terms are not restricted to this situation. See \textit{Dail Debates}, 13 April 2000, vol 518, col. 388, per Minister for Justice, Mr. McDowell. However, the phrase is often used in this situation, see, for example \textit{Dail Debates}, 14 December 2006, vol 619, col. 1677. For further reading on the organised crime situation in Ireland see Campbell L, --Responding to Gun Crime in Ireland” (2010) 50(3) Br J Criminol 414–434; Campbell L, --The recovery of "criminal" assets in New Zealand, Ireland and England: Fighting organised and serious crime in the civil realm” (2010) 41 VUWLR 15; Hamilton C, --Organised criminals as "agents of obligation": The case of Ireland” (2011) 17(4) Eur J Crim Policy Res 253–266.


\textsuperscript{1112} The coverage of "organised crime" has featured heavily in a variety of media settings; for a brief introduction to the growing coverage, see Cusack J, --Gilligan seen as father of modern organised crime” \textit{Sunday Independent} (26 June 2011); Williams P, \textit{Badfellas} (Penguin Ireland 2011); Williams P, \textit{Crime Wars} (Merlin Publishing 2008); Williams P, \textit{The Untouchables: Ireland’s Criminal Asset Bureau and Its War on Organised Crime} (Merlin Publishing 2008); Williams P, \textit{Crime Lords} (Merlin Publishing 2004); McCaffrey M, \textit{Cocaine Wars} (Summersdale 2011); Duggan B, \textit{Mean Streets: Limerick’s Gangland} (O’Brien Press Ltd 2009). Similarly, a number of papers run regular columns and "revealing insights" into the organised crime world in Ireland, such as the \textit{Sunday World} (and the now defunct \textit{News of the World}), for example see --Operation Gangland" \textit{Sunday World}, available at: \url{http://www.sundayworld.com/columnists/sw-irisi-crime.php?aid=4881}; see also Lally C, --Gardaí consider plot to kill "Sunday World" crime journalist as serious" \textit{Irish Times} (2 December 2011). The broadcast media has also run a number of programmes documenting organised crime in Ireland, for example, see --"Gangland Ireland" TV3, (September 2010) and --Bad Fellas" RTE (November 2010). For excellent critiques of media coverage and criminal justice policy in Ireland see Carey G, --The performative character of media presentation of crime” (1999) 9 (1) ICLJ 47; O’Connell M, --The Portrayal of Crime in the Media – Does it matter?” in O’Mahony P (ed), \textit{Criminal Justice in Ireland} (IPA 2002). It is interesting to note that concerns surrounding the media and criminal justice is not a recent phenomenon; for example, in 1965 the then Minister for Justice, urged caution in relation to the reporting of crime, suggesting that there was undue sensationalism and exaggeration in some newspapers reports of crime' and the effect of these reports is to suggest that crime is rife and the police are unable to protect the citizens ... I have no wish to stop newspapers from reporting crimes; on the contrary, I know that they can do much to help the police by their reports, but I would appeal to them to avoid sensationalism and to report the facts’. See \textit{Dail Debates} 5 May 1965, vol 215 col 6.
pressure by reacting to high profile criminal incidents with reactionary legislation. A concern is that such legislation is often predicated upon ‘public emotion’ as opposed to objectively informed research. Thus it is important to set out a clear and justifiable DNA framework for the state, to minimise the threat of function creep and expansion that has been systemic in other jurisdictions.

The chapter will begin by examining the current parameters for the use of DNA profiling in Ireland during a criminal investigation, which is located within the Criminal Justice (Forensic Evidence) Act 1990 (which allows for DNA collection). Consideration will then shift towards the now lapsed 2010 Bill (which not only outlined provisions for the establishment of a DNA database but intended to amend the current DNA sampling regime). While the 2010 Bill has now lapsed, the current administration has indicated its intention to implement a similar (but revised legislative) framework. For example, in April 2011, whilst addressing the Annual

---

1113 There have been numerous examples of this ‘reactionary legislative phenomenon’ in Ireland over the last twenty years, *inter alia*, the introduction of the ‘anti-crime package’ in 1996 (a central driver for which was the killings of investigative journalist Veronica Guerin and Detective Garda Jerry McCabe in two separate incidents which were linked to organised criminals and dissident republicans respectively). The ‘anti-crime package’ consisted of the Criminal Justice (Drug Trafficking) Act 1996, the Proceeds of Crime Act 1996 and the Criminal Assets Bureau Act 1996. For an excellent account of the 1996 ‘anti-crime package’ and the surrounding circumstances see Hamilton C, *The Presumption of Innocence and Irish Criminal Law* (Irish Academic Press 2007), 103–124; see also Ryan A, ‘The Criminal Justice (Drug Trafficking) Act 1996: Decline and Fall of the Right to Silence’ (1996) 7(1) *Irish Criminal Law Journal* 22; amendments to the 2006 Criminal Justice Act to allow previous inconsistent witness statements to be admissible in trial (driven by the collapse of a high profile murder trial involving an individual linked to organised crime in Limerick), which was accompanied by a front page media picture of the individual giving two fingers to a reporter outside the court house. See O’Connor B, ‘Defendants at liberty to offer two fingers to the criminal justice system’ *Sunday Independent* (30 November 2003); Walsh L, ‘Two Fingers to law, justice and the State’ *Irish Independent* (9 November 2003); Roe D, ‘McDowell vows to tackle gangland crime’ *Irish Times* (4 November 2003). More recent examples of reactive legislation followed the killings of Roy Collins in 2009 (a family member of a witness in a ‘gangland’ trial five years previously) and Shane Geoghegan in 2008 (shot on his way home in a case of mistaken identity by individuals involved in the ‘gangland’ feud in Limerick). The killings sparked a surfeit of legislative responses, enhancing powers of investigation, allowing the use of the Special Criminal Court for non-terrorist offences and introducing tough sentences for specific offences. Both the Criminal Justice (Miscellaneous Provisions) Act 2009 and the Criminal Justice (Amendment) Act 2009 were enacted with particular haste, three weeks in the case of the latter. They created new organised crime offences, scheduled certain organised crime offences to be tried in non-jury courts, expanded the use of adverse inferences and post-release provisions to sentences. For information on the above see, for example, ‘Man Pleads Guilty to Roy Collins murder’ RTE News (4 May 2010); ‘Man Jailed for life for Roy Collins’ murder’ RTE News (5 May 2010), Available at: [http://www.rte.ie/news](http://www.rte.ie/news). See also Hayes K, ‘Five prisoners questioned on Limerick murders’ *Irish Times* (24 November 2011); ‘Man on Trial for Shane Geoghegan Murder’ RTE News (31 January 2012); ‘Barry Doyle guilty of Shane Geoghegan murder’ RTE News (16 February 2010), Available at: [http://www.rte.ie/news](http://www.rte.ie/news); Hayes K, ‘Five prisoners questioned on Limerick murders’ *Irish Times* (24 November 2011).

1114 As Fennell warns _the tenor of the debate and commentary is never without a context, never without a particular crime. Rarely is there a call for a more general debate_. See Fennell C, *Crime Crisis in Ireland: Justice by Illusion* (Cork University Press 1993), 31. Similarly McCullagh observes _much of the debate about crime often appears to be driven by the anxieties of the particular moment rather than by a fuller understanding of the dimensions of the problem_. See McCullagh C, *Crime in Ireland: A Sociological Introduction* (Cork University Press 1996), ix.
Conference of the Garda Representative Association, the current Minister for Justice, Equality and Law Reform observed:

For over a decade successive governments have promised the enactment of legislation to establish a DNA database to assist the Gardai in the investigation of crime. I have long been an advocate of such a database and, as you may know, at the beginning of last year legislation to establish such a database was published by the previous government. Unfortunately no substantial progress was made in the enactment of that legislation and it fell when the Dail was dissolved. Substantial amendments need to be made to the Bill as originally published and I hope to publish a new Bill before the end of this year and progress its speedy enactment. I believe the establishment of a DNA database will provide substantial help to the Gardai Síochána in its work.1115

At the time of writing there have been no further developments on this issue, thus a critical examination of the 2010 Bill will still be instructive in assessing Ireland’s most recent attempt at legislating for the collection, retention and use of DNA in the Irish criminal process, allowing the proposed amendments in the 2010 Bill to be tentatively juxtaposed against current international best practice. The word ‘tentatively’ is used as given the embryonic and diverging nature of DNA collection and retention regimes it is perhaps premature to identify or proffer definitive standards of best practice. As an alternative, analysis and recommendations will focus upon the findings and justifications that were identified in the earlier sections of the thesis. Comparison of national DNA policies can be problematic as the differences between jurisdictions are often dependent on a myriad of factors ranging from cultural beliefs,1116 to historical context and financial resources.1117

1117 For example, the lack of resources in the Philippines has been cited as one of the primary reasons for the lack of a national DNA database. See De Ungria MC and Mangueran Jose J, —Forensic DNA profiling and
For example a persuasive criticism of the *Marper* decision’s approval of the Scottish model as a ‘blueprint’ for a DNA retention regime is that the Court placed too much emphasis on the retention policies of other states when condemning the ‘blanket approach’ in the UK.\footnote{48 EHRR 50, para. 119.} DNA profiling and the practice of storing profiles on a DNA database is a relatively new and evolving technology. Thus as the UK is a ‘pioneer’ (as recognised by the ECtHR in *Marper*)\footnote{App Nos 30562/04 and 30566/04; (2008) 48 EHRR 50, para. 112.} in the use of DNA in the criminal process, it was perhaps unfair to directly compare the UK policies with those in other member states. As McCartney *et al* warn:

...the margin of justification is a much more fragile basis for ethical and political analysis than it seems at first sight. A comparative survey of the law in different states may reflect different stages of technological development and investment rather than jurisprudential philosophy or principled political decision making. The extent to which the use of DNA and the creation of databases precede legislation suggests that conclusions drawn from comparisons of statute books have to be treated with caution. On street and in the laboratory, criminal justice may operate differently.\footnote{McCartney C, Williams R and Wilson T, *The Future of Forensic Bio-information* (Nuffield Foundation 2010), 4.}

For example it is important to consider the UK’s vanguard role in the development of DNA technology (including significant financial, technological and legislative backing). To ‘cherry pick’ the resultant retention regimes of other nation states without examining the domestic circumstances that influenced a particular state’s regime provides a fragmented and distorted picture of the DNA debate. Thus attempts to define differences and commonalities in this debate is an exercise fraught with difficulty (because of the potential for misinterpretation and ignorance of domestic factors). However, as Heffernan observes (in the context of DNA databases) consideration of global databasing policy can be beneficial as it will at least underscore the availability of options in the modelling of databases’,\footnote{Heffernan L, “A DNA Database” (2008) 18(4) *ICLJ* 105, 106.} thereby providing instructive assistance.\footnote{This thesis chooses to draws comparisons with the United States, New Zealand and Canada (and the UK) for three primary reasons: the existence of common law systems in these jurisdictions; the necessary information (in English) was accessible; and finally the three countries have established significantly different DNA databases allowing for an interesting juxtaposition.}

The difficulty, when one combines the current rights and due process adverse atmosphere of modern society with the _oracle_ like perception of DNA profiling for a criminal investigation, is achieving and maintaining a semblance of balance and objectivity in this debate. It is submitted that an appropriate mechanism for achieving such a balance is through the adoption of a _reflective_ regulatory framework. The benefit of such an approach is that it will reduce the human rights and due process concerns inherent in the application of the technology from becoming _steamrollered_ by the occurrence of a _signal crime_, a _moral panic_, or automatically subsumed in the growing crime control prevalence within the Irish criminal process. This is achieved by its central goal of

---

1123 ‘Moral panic’ is a contested term but at a basic level it is a _disproportional_ and hostile social reaction to a condition, person or group defined as a threat to societal values. The identified group or _folk devil_ in moral panic theory is perceived to constitute a threat to society and is viewed as innately _evil_, thus action is required to eradicate or defuse this perceived threat. While, the threat is characteristically over-exaggerated, the outcome is that the disproportionate response results in exacerbating anxiety levels within society. See Murji K, _Moral Panic_ in McLaughlin E and Muncie J (eds), _The Sage Dictionary of Criminology_ (Sage Publications 2006). See also Critcher C (ed), _Moral Panics and the Media: Critical Readings_ (Oxford University Press 2006). Cohen coined the concept _moral panic_ during his study of _folk devils_, in which he illustrated how the media together with the police _developed a spiral respectable_ fear about _mods_ and _rockers_ in the 1960s in the UK. See Cohen S, _Folk Devils and Moral Panics_ (Routledge 2002); Reiner R, ‘Media-Made Criminality: The Representation of Crime in the Mass Media’ in Maguire M, Morgan R and Reiner R, _The Oxford Handbook of Criminology_ (4th edn, Oxford University Press 2007), 316; Ungar S, – _Moral panic versus the risk society: the implications of the changing sites of social anxiety_” in Critcher C (ed), _Moral Panics and the Media: Critical Readings_ (Oxford University Press 2006), 292. For a consideration of moral panic in Ireland see Meade, J. – _Organised Crime, Moral Panic and Law Reform_” (2000) 10(1) Irish Criminal Law Journal 11–16, 12.

1124 It has been argued that _penal populism_, also described as _new populism_ or _populist punitiveness_, is a central feature of reactionary politics. The increasing influence of populism in the criminal process is linked to the suspicion of elites; the growing disquiet at ideologies and abstract theories over common sense or ubiquitous knowledge; and a more direct link between authority and governance (including penal policy) and the populace. See Bottoms A, – _The philosophy and politics of punishment and sentencing_’ in Clarkson C and Morgan R (eds), _The Politics of Sentencing Reform_ (Oxford University Press 1995), 17–50; Pratt J, _Penal Populism_ (Routledge 2007); Garland D, _The Culture of Control: Crime and Social Order in Contemporary Society_ (Oxford University Press 2001), 13–14; Kilcommins S et al, _Crime, Punishment and the Search for Order in Ireland_ (Institute of Public Administration 2004); O’Connell M, Right-Wing Ireland? The Rise of Populism in Ireland and Europe (Liffey Press 2003); Roberts J et al, _Penal Populism and Public Opinion Lessons from Five Countries_ (Oxford University Press 2002). Populism is not a particular philosophy but involves the mass expression of the majority of _ordinary people_ over the view of the elites. See Canovan M, – _Trust the People!_ Populism and the two faces of democracy” (1999) XLVII _Political Studies_ 2, 5; Taggart P, _Populism_ (Open University Press 2000), 8–11. It has been argued that the impact of penal populism has been evident in Ireland. For example, Campbell highlights that penal populism and the _views of the people_ have been evident on issues such as bail, the exclusion of evidence and sentencing of serious offenders. On these issues criminal justice policy seems to be dictated by perception, instinct and political expediency in lieu of objective research and public debate. See Campbell, L. – _Criminal Justice and penal populism in Ireland_” (2008) 28 (4) Legal Studies 559, 560. Although as Kilcommins et al note, it is questionable whether objective data ever influenced Irish penal policy in view of the traditional dearth of such research in this jurisdiction. See Kilcommins S et al, _Crime, Punishment and the Search for Order in Ireland_ (Institute of Public Administration 2004), 72; O’Donnell I, – _Stagnation and change in Irish penal policy_” (2008) 47 _Howard Journal of Criminal Justice_ 121.

1125 The shift in Ireland from a criminal process model based upon due process towards a model resembling crime control has been well documented. See Walsh D, – _The Criminal Justice Act, 2006: A Crushing Defeat for Due Process Values_” (2007) 7(1) Journal Studies Institute Journal 44; Kilcommins _et al_, _Crime, Punishment and the Search for Order in Ireland_ (Institute of Public Administration 2004); O’Mahony P, _Criminal Justice in Ireland_ (Institute of Public Administration 2002); Campbell L, —from Due process to crime control – the
locating the technology within an all encompassing framework that grounds its utilisation against an organic backdrop predicated upon clear justifications (such as solid theoretical reasoning or independently verified research findings), continual civic engagement and a due regard for the human rights and due process concerns created by its use.

7.2. Ireland’s Current DNA Policy

Before discussing the recently proposed regime to govern the use of DNA within the Irish criminal process (contained in the Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010), it is important to observe that the collection and use of DNA profiling within the process is already established. Despite not currently having a DNA database, formal powers to collect DNA samples from suspects during a criminal investigation are afforded by the Criminal Justice (Forensic Evidence) Act 1990 and regulations set out under the statute which are outlined in SI 130/92. **Therefore similar to other biological identifiers such as fingerprints and palmprints, DNA profiling can lawfully be utilised during criminal investigation in Ireland.** **Central to the continuing use of DNA profiling is that it had been accepted (when collected within the usual boundaries of evidential admissibility) by the Irish courts.**

---


1127 The main provision for the taking of photographs, fingerprints and palmprints is in relation to those individuals detained under s. 4 of the Criminal Justice 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 palmprints’. 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 Sióchána in the exercise of his powers under section 6(4), that person shall be guilty of an offence. For an excellent consideration of the laws and associated issues surrounding the taking of fingerprints in Ireland see Heffernan, L. “The Recording of Fingerprints: Legal Aspects” (2006) 13(1) DULJ 201.

1128 DNA profiling as a technique has been evident in Irish criminal investigation since 1987. It was first used in a criminal case in Ireland in 1987 when a youth was convicted of the rape and murder of a 15 year old girl, Carol Carpenter, in Dublin. See ICCL Position Paper, Human Rights Compatibility of the Establishment of a DNA Database (Oct 2003), 6. Available at: www.iccl.ie.

1129 As introduced in chapter three, in Ireland, the reliability of DNA profiling technology was accepted in the People (DPP) v Mark Lawlor. See People (DPP) v Mark Lawlor Central Criminal Court (2 December 1995); Court of Appeal 26 February 2001. See also Smyth M, “DNA in the Dock” [1995] 2(6) Lab Link 1. In the People (DPP) v Horgan the appellant attempted to undermine the validity of the science behind the process. However, the court, after a lengthy trial, eventually upheld the science and adduced evidence from the process. See People (DPP) v Horgan, Irish Examiner (25 June 2002). Although as outlined in chapter two, the technique of DNA profiling (and the concept of a match) has been deemed admissible in the Irish courts, its probative value and admissibility will be dependent on the circumstances of a particular case. For example in The People
7.3. Criminal Justice (Forensic Evidence) Act 1990

The necessity to pass the 1990 Act was based on the fact that as DNA profiling became increasingly popular for criminal investigation in the late 1980s it was necessary for the government to provide the Gardai with a mechanism for obtaining DNA samples. As Walsh notes, the Gardai lack any general power to take bodily samples and may do so only with the consent of the person concerned or pursuant to some specific statutory authority.\(^\text{1130}\)

Therefore, in 1987, Alan Shatter, the then Fine Gael spokesman for justice, questioned the then Minister for Justice (Collins) if any, arrangements are being made by his Department or by the Garda to provide laboratory facilities for the carrying out of DNA fingerprinting in this country in order that this process can be used by Gardai as a means of identifying criminal offenders\(^\text{1131}\). Ominously calls for expediency were evident in the debate from the beginning: while extolling the benefits of DNA fingerprinting (as DNA profiling was referred to then) Shatter argued that the new policing tool should be implemented as a matter of urgency:

The development of this technique is even more important to development in the area of forensic investigatory techniques than the original discovery of the fingerprinting technique at the start of the century in the sense that if someone who is alleged to have committed a crime leaves a skin scraping, blood or even

---

\(\text{DPP v Howe Irish Times} (15\text{ October 2003}),\text{ Central Criminal Court, Butler J. directed the jury to acquit as the expert witness (a forensic scientist) had no qualifications in statistics. Thus the judge held that he was not properly qualified to inform the court of the probability of DNA coming from one individual over another. However, more recent decisions run contrary to the Howe decision; see for example, The People (DPP) v Downey, Central Criminal Court, 12 March 2004; The People (DPP) v Michael Murphy, Central Criminal Court 2004. As the LRC Consultation Report on the Establishment of a DNA Database (LRC CP 29 – 2004) notes the decision in Howe illustrates the inconsistencies that arise in the absence of guidance on the statistical presentation of a DNA match\)}. In the \(\text{DPP v Allen [2003] 4 IR 245}\), the Court of Appeal order a retrial, as the forensic expert failed to factor in the effects of relatedness when presenting the statistical evidence to the jury; commenting on DNA evidence the court observed _expert evidence comparing DNA profiles is a comparatively recent scientific technique and indeed it would appear that it is still being perfected. As in many scientific advances, the jury have to rely entirely on expert evidence. One of the primary dangers involved in such circumstances is that, the matter being so technical, a jury could jump to the conclusion that the evidence is infallible. That of course, is not so in the case of DNA evidence, at least in its present state of knowledge_. For further examples of retrials involving DNA evidence see \(\text{DPP v Horgan [2009] IECCA 85}\) (although an appeal on the basis of DNA evidence was rejected). The Court of Criminal Appeal rejected challenges to DNA evidence in \(\text{People (DPP) v Boyce (unreported, 21 December 2005)}\) and \(\text{People (DPP) v Costigan (unreported, 28 April 2006)}\). For further commentary on this issue see Heffernan L, _Scientific Evidence: Fingerprints and DNA_ (Firstlaw 2006).

\(^{1130}\) See Walsh D, _Criminal Procedure_ (Thompson Roundhall 2002), 345–50. See also Law Reform Consultation Paper, _Law Reform Commission Consultation Paper on the Establishment of a DNA Database_ (LRC CP 29 – 2004), 83–106. On the implications of sampling under the ECHR see \(\text{X v Netherlands, App No 5239/78, 16 D&R 184; Peters v Netherlands, App No 21132/93, 77-A D&R 75; X v Germany, App No 8334/78, 24 D&R 103.}\)

\(^{1131}\) _Dail Debates_ 10 December 1987, vol 387, col 1739.
hair at the scene of the crime that can ultimately lead to the person being identified. In that sense we should seek to ensure that we have the necessary facilities available here as rapidly as possible.\textsuperscript{1132}

The debate quickly descended into political point scoring. Fine Gael heavily criticised the government’s delay in handling the issue and proposed a private members Bill (Criminal Law (Amendment) (Genetic Fingerprinting) Bill 1988) to deal with the matter.\textsuperscript{1133} However, the government rejected the proposed Fine Gael Bill and described it as a “defective and inadequate Bill”,\textsuperscript{1134} citing the failure of the Bill to adequately address the problems with consent surrounding the taking of bodily samples from suspects and the piecemeal approach of the Bill, which proposed to insert the relevant clauses into the Criminal Law Act 1976 and the Criminal Justice Act, 1984.\textsuperscript{1135} In response, the government announced its plans to introduce a comprehensive Bill for the collection of genetic samples during a criminal investigation. The then Minister for Justice Gerry Collins stated:

given the importance of the issue, it is preferable that the power to take samples for the purpose of genetic profiling and other forensic testing should be dealt with in a self contained comprehensive Bill rather – as proposed in the Deputy’s Bill – by inserting new clauses into existing statutory provisions ... I would ask the Deputy to withdraw his Bill on the understanding that I will shortly be bringing forward a comprehensive measure.\textsuperscript{1136}

Subsequently the government secured the enactment of the Criminal Justice (Forensic Evidence) Act 1990.\textsuperscript{1137} In short, the 1990 Act affords the Gardai the power to collect bodily samples under particular circumstances from a limited range of individuals. While there are a number of statutes which allow the Gardai to obtain bodily samples, section 2 of the 1990

\begin{itemize}
\item \textsuperscript{1132} Ibid. vol 378, col 1740.
\item \textsuperscript{1133} For debate surrounding the introduction of the Bill see Dail Debates 25 October 1988, vol 383, 702.
\item \textsuperscript{1134} Ibid.
\item \textsuperscript{1135} The motivation for including the provisions of the 1976 Criminal Act and the 1984 Criminal Justice Act stemmed from the fact that these statutes already provided for the taking of other biometric identifiers from individuals detained under specific offences. See for example s.7(c) photographs and (d) fingerprints and palmprints of the 1976 Act, which enabled a member of an Garda Síochana to take a photograph/fingerprint from individuals detained under s.20 OASA 1939 or s.2 Emergency Powers Act 1976; see also s.6 of the 1984 Act which under section (c) photograph and (d) fingerprint/palmprint may be taken from individuals who are arrested under s.4 of the 1984 Act.
\item \textsuperscript{1136} Dail Debates 25 October 1988, vol 383 col 702.
\end{itemize}
Act exclusively legislated for the taking of forensic samples.\textsuperscript{1138} As introduced in chapter three the sampling of an individual is a complicated area that creates significant issues for the criminal process namely around issues such as bodily integrity, privacy and consent. Thus given the sensitive nature of the process (heightened by the sensitive nature of the information involved), the 1990 Act understandably outlines a number of safeguards aimed at minimising the impact on those targeted by the provisions of the Act. As Heffernan outlines the taking of samples under the 1990 Act was limited by three particular restrictions:\textsuperscript{1139} the taking of forensic samples was limited to those arrested for serious offences;\textsuperscript{1140} the Act contains an exhaustive list of the forensic samples that may be taken;\textsuperscript{1141} and the Act limits the use of forensic samples __for the purpose of forensic testing___.\textsuperscript{1142}

On the issue of scope, section 2 of the Act outlined who may be subject to sampling under the Act. Section 2(1) of the Act outlines that suspects held in Garda 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 and section 50 of the Criminal Justice Act 2007 may have bodily samples taken under the conditions of the Act.\textsuperscript{1143} In addition to those detained under the relevant Acts, section 2(2) states that a sample may also be obtained where a __person is in prison__ or would be liable for sampling if they were not in prison.\textsuperscript{1144} Although section 2(3) states that a sample may only be sought for an investigation

\begin{footnotesize}
\begin{enumerate}
\item[1138] For example s.6 of the Criminal Justice Act 1984 enables the Gardai to obtain fingerprints and palmprints; ss. 12–18 of the Road Traffic Act 1994 enables Gardai to obtain breath, blood or urine in relation to a traffic offence. For an overview of the myriad of legislative provisions that enable the Gardai to obtain fingerprints, palmprints and photographs see LRC Consultation Paper, Law Reform Commission Consultation Paper on the Establishment of a DNA Database (LRC CP 29 – 2004), 78–79.
\item[1139] Heffernan L, Scientific Evidence: Fingerprints and DNA (Firstlaw 2006), 154–156.
\item[1140] Section 30 of the Offences Against the State Act 1939, s.4 of the Criminal Justice Act 1984 or s.2 of the Criminal Justice (Drug Trafficking) Act 1996 (as amended by s.3 of the Criminal Justice (Drug Trafficking) Act 1996. The rationale was to limit sampling to offences carrying terms of imprisonment of five years or more; however, there are a number of minor offences included. See OASA 1939 and CJ (Drug Trafficking) Act 1996. The taking of a sample must be authorised by a superintendent.
\item[1141] s 2(1) of the 1990 Act. The list was amended by s14 of the Criminal Justice Act 2006.
\item[1142] Although not statutorily defined it is believed to include investigation of crime as opposed to immigration or parental disputes. However, the use of broad terminology such as __for the purpose of forensic testing__ has been criticised as being too wide a definition and susceptible to abuse. See Heffernan L, Scientific Evidence: Fingerprints and DNA (Firstlaw 2006), 156. It has also been suggested that the term may incorporate other tests beyond DNA sampling, such as a toxicology screen if it was relevant to the investigation. See Heffernan L, (2006) –The taking of forensic samples: A review of proposed reforms” 16(2) ICLJ 2.
\item[1143] The detention powers outlined in the 1990 Act are those that allow the Gardai to detain a person in custody for the purpose of investigation into the alleged offence. In general the offences in question can be punished upon conviction by a term of imprisonment of at least five years (i.e. the majority of indictable offences).
\item[1144] The ambiguity surrounding the phrase __person in prison__ has been subject to debate, on issues such as whether it would incorporate an individual upon remand. See Walsh D, Criminal Procedure (Thompson Roundhall 2002), 346; LRC Consultation Paper, Law Reform Commission, Consultation Paper on the Establishment of a DNA Database (LRC CP 29 – 2004), 85–86.
\end{enumerate}
\end{footnotesize}
of an offence other than the one for which the person is already in prison for or a related offence.\textsuperscript{1145}

Regarding the scope of section 2, the Minister for Justice stated during Dail debates that _the purpose of this Bill is to provide the Garda Síochána with the power to take forensic testing bodily samples ... from persons suspected of serious offences_.\textsuperscript{1146} This statement is predominantly accurate: the majority of the Acts cover offences which attract on conviction _imprisonment for a term of five years or by a more severe penalty_.\textsuperscript{1147} The limiting of the taking of the samples to those arrested for serious offences is predicated on the assumption that because of the intimate and sensitive nature of the information contained within a genetic sample it was vital to limit the range of sampling so as to minimise the potential legal challenges under the _constitution_.\textsuperscript{1148} Moreover it is suggested that the Irish provisions were influenced by the neighbouring standards in the UK, which during the corresponding period had a similar threshold for sampling before it was downgraded to those convicted of a recordable offence by the Criminal Justice and Public Order Act 1994.\textsuperscript{1149} While as O’Connor notes _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_.\textsuperscript{1150} Although as noted in chapter four it is perhaps unhelpful to directly associate forensic sampling with the category of offence under investigation. An arguably more appropriate approach is to align the taking of a sample with its relevance to the investigation. Through such an approach the utility of the sample will take precedence over the type of offence being

\textsuperscript{1145} Section 2(3)(a), a related offence in this context is specifically an offence arising out of the same indictment as the offence for which the person is serving his sentence.

\textsuperscript{1146} _Dail Debates_ 1 March 1990, vol 396, col 1244.

\textsuperscript{1147} _For a discussion on the meaning of ‗ a severe penalty‘ see Walsh D, _Criminal Procedure_ (Thomson Roundhall 2002), 226. Although there are a number of minor offences that come within the scope of the Act, contained within the Offences Against the State Act 1939 and the Criminal Justice (Drug Trafficking) Act 1996. See LRC Consultation Paper, _Law Reform Commission, Consultation Paper on the Establishment of a DNA Database_ (LRC CP 29 – 2004), 87. For example, the Criminal Justice (Drug Trafficking) Act 1996 passed as part of the _comprehensive anti-crime package_ in 1996 includes new drug offences, which were defined under section 3(1) of the Criminal Justice Act 1994, which contains a number of offences which do not fall under the category of serious offences. See _Dail Debates_ 5 March 1996, vol 462, col 1383.

\textsuperscript{1148} _See Dail Debates_ 5 March 1996, vol 462, col 1383. As the Minister for Justice noted it is _intended to give 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 mean some interference with personal rights or freedoms_.

\textsuperscript{1149} The LRC Commission Report recognised the general international practice of retaining the serious offences threshold to justify the intrusion involved in the DNA sampling process. See LRC Report, _Law Reform Commission, Report on the Establishment of a DNA Database_ (LRC 78 – 2005), para. 2.47. See also the opinion of the Irish Council for Civil Liberties, _Human Rights Compatibility of the Establishment of a DNA Database_ (ICCL Position Paper 2003).

investigated. It is accepted that this approach will potentially lead to a lower threshold for sampling, however, it is submitted that such intrusion may be justified when it is shown to be relevant to the investigation involved and when taken with due regard to the human rights and due process concerns of those targeted by the process.¹¹⁵¹

To aid in justifying and minimising the intrusions inherent in the sampling process, the 1990 Act provides for a number of safeguards and prerequisite conditions that need to be satisfied before a sample can be lawfully obtained from an individual. For example, section 2(6) states that before a DNA sample is obtained, Gardai must inform the individual of the nature of the offence, the grounds upon which authorisation has been granted and that the results of the DNA matching may be used as evidence.¹¹⁵² Authorisation for sampling must be sanctioned by a Garda not below the rank of superintendent;¹¹⁵³ it may be given orally but must be confirmed in writing as soon as is practicable.¹¹⁵⁴ The information provided to the suspect during the sampling process should be provided in a clear and uncomplicated form.¹¹⁵⁵ As the LRC commission states 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.¹¹⁵⁶ O’Connor states that the 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

¹¹⁵¹ This issue will be considered further when examining the current two step test required for forensic sampling. In addition there have been calls to enable a second sample to be taken in the event of the first one becoming lost, destroyed or contaminated. In England an analogous provision has been enacted under the Criminal Justice and Police Act 2001 (Commencement No 8) Order 2002, which enables another sample to be taken if the first sample is unsatisfactory or insufficient (which includes if the sample becomes lost, contaminated or destroyed). The sample must be taken within one month of the original sample. It has been recommended that a similar provision should be enacted in Ireland. Law Reform Commission, Consultation Paper on the Establishment of a DNA Database (LRC CP 29 – 2004), 88.

¹¹⁵² Strangely these criteria do not apply to samples taken from a ‘person in prison’ as described under s 2(2) of the 1990 Act.

¹¹⁵³ Criminal Justice (Forensic Evidence) Act 1990, s 2(4), which states that [a] sample may be taken under this section only if (a) member of the Garda Siochana not below the rank of superintendent authorises it to be taken, and...’. This is identical to the authorisation necessary for the taking of fingerprints, see Criminal Justice Act 1984, s.6.

¹¹⁵⁴ Ibid. s.2(7), which 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’. This was analogous to the position in the UK, under s.62 and s.63 of PACE. However, this position was downgraded in 2001 from superintendent to the lower rank of inspector. See Criminal Justice and Police Act 2001, s.80.

¹¹⁵⁵ On this issue the recommendations of the Parliament of New South Wales Legislative Standing Committee on Law and Justice (NSW Review) is instructive. It recommended that request for consent should be drafted into a plain English consent document and should be provided to the relevant individuals. See New South Wales Legislative Standing Committee on Law and Justice, Review of the Crimes (Forensic Procedures) Act 2000 (Report No. 18, 2000), paras 5.101–5.110.

person should be given information of the kind specified in the paragraph. The purpose of this section is to ensure that any consent provided by the accused is 'informed consent'. However, it is questionable whether consent that is given in custody can truly be regarded as voluntary consent given the 'inequality of arms' that exists for a suspect in Garda custody. Although interestingly, as Heffernan observes, the taking of samples (and the attached safeguards – particularly around the area of the necessary caution) are not as important as the cautions involved during and preceding the interview of a suspect, as 'the forensic process is a step removed from the suspect and the information tendered by the Gardai has no direct bearing on the accuracy or reliability of the evidence ultimately proffered.'

In an attempt to further minimise the intrusiveness of the process the 1990 Act outlines an 'exhaustive list' of forensic samples that may be taken, and, moreover, divides the procedures for taking these samples into two categories. While the Act did not overtly label the two categories of samples that can be taken, it effectively created a distinction between 'intimate' and 'non-intimate' samples. It achieved this by adopting different sampling criteria for the taking of an 'intimate' sample such as blood, saliva, pubic hair a swab from a body orifice or genital region, and a dental impression, from 'non-intimate samples' such as hair (other than public hair), a nail, any material found under a nail, saliva, a swab from any part of the body other than a bodily orifice or a genital region, or a footprint or a similar impression of a part of a person's body other than a part of a hand. The method of obtaining each category of sample differs in an aspiration to reflect the varying sensibilities involved in the different methods of sampling. For example, 'intimate' samples must be obtained with an individual's 'appropriate consent' and must be taken by a medical practitioner (or a dental impression

---

1158 Heffernan L, ‘The taking of forensic samples: A review of proposed reforms’ 16(2) ICLJ 2, 6.
1159 In the UK, s.65 of PACE defines the terms 'intimate' and 'non-intimate' samples. An intimate sample is defined 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 public 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'.
1160 In addition to the above samples, a Garda may also obtain samples from an individual's skin or samples of his hair for the purposes of testing whether he has been in contact with any firearm or explosive substance, under s.7(1)(c) of the Criminal Law Act. This provision is restricted to an individual who is detained under s.30 of the Offences Against the State Acts 1939 to 1998.
1161 Section 10 of the Criminal Justice (Forensic Evidence) Act 1990 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; (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'. It is worth noting the age limit of 17 in the 1990 Act, which
by a dentist).\(^{1162}\) However, the consent _safeguard_ is significantly undermined by the provision that an adverse inference may be presented at trial as a consequence of an individual refusing to submit an intimate sample.\(^{1163}\) As Walsh notes, _a refusal may be interpreted as evidence of guilt, although the person cannot be convicted solely on the basis of such an inference._\(^{1164}\) On this issue Heffernan observes: _the court may treat a refusal to consent as corroboration of any evidence in relation to which the refusal is material. Thus ... a refusal to consent to the taking of an intimate bodily sample might corroborate material aspects of a suspect’s confession, incidentally obviating the need for the judge to caution the jury about the dangers of convicting on the confession standing alone._\(^{1165}\) Thereby refusal to consent may, on the basis of inferences drawn, be used as corroborating evidence but may not be the sole basis for a conviction.\(^{1166}\)

To alleviate the potential arbitrariness involved in the attachment of an adverse inference, it is only applicable to refusals _without cause_, although how this _excuse_ will operate in practice is not expanded upon in the 1990 Act. However, it is notable that the inference provisions in the 1990 Act are drafted in an almost identical manner to those in the 1984 Criminal Justice Act (which allows a court to draw inferences from the failure or refusal of a suspect to account for an object, substance or mark found on his person or in his possession or his whereabouts at a particular location).\(^{1167}\) Although, as Heffernan observes, the Acts while similar are not directly comparable as the 1990 Act involves a far greater degree of contrasts with the age limit of 16 under the Non-Fatal Offences Against the Person Act 1997, which enables an individual who reaches the age of 16 to consent to surgery, medical or dental treatment without the permission of their parent and/or guardian. For discussion surrounding the difficulties inherent in the provision of consent (particularly surrounding parents/guardians and children) see Feldmen D, _Civil Liberties and Human Rights in England and Wales_ (Oxford University Press 2002), 410–411. For example, the Australian Law Reform Commission has recommended that a forensic procedure should only be conducted on a child of 12 years or more if both the child and the parents/guardians consent. See New South Wales Legislative Standing Committee on Law and Justice, _Review of the Crimes (Forensic Procedures) Act 2000_ (Report No. 18, 2000), recommendations 41–43.

\(^{1162}\) Criminal Justice (Forensic Evidence) Act 1990, s.2(8).
\(^{1163}\) Ibid. s.3(1).
\(^{1164}\) Walsh D, _Human Rights and Policing in Ireland: Law, Policy and Practice_ (Clarum Press 2009), 114. An individual is expected to be advised of the resultant adverse inference by the member seeking the consent, moreover, an inference can only be submitted as evidence if the individual has been advised prior to his or her refusal to consent. See Criminal Justice (Forensic Evidence) Act 1990, s.3(3).
\(^{1166}\) Criminal Justice (Forensic Evidence) Act 1990, s.3(1). No inferences are to be drawn unless the suspect was told, in ordinary language by a Garda when seeking his consent, that the sample was required for the purpose of forensic testing, that his consent was necessary and, if his consent was not given, the impact of this refusal. See Criminal Justice (Forensic Evidence) Act s.3(3).
\(^{1167}\) Sections 18–19 Criminal Justice Act 1984. The constitutionality of these provisions (on challenges predicated upon the presumption of innocence and the privilege against self incrimination) was upheld by the Supreme Court in _Rock v Ireland_ [1997] 3 IR 584.
interference with the rights of the suspect. Thus it is arguable that the Supreme Court may decide the constitutionality of the provisions under the 1990 Act are disproportionate in a state’s right to prevent and detect crime. A problem with the provision, and the right to refuse a sample with "just cause", is that the Act is silent on the circumstances which may satisfy such a "just cause". Thus whether a lack of legal advice, a medical condition (such as haemophilia) or religious belief would satisfy this provision is questionable and would be subject to a court’s reactive determination. Although it is submitted that the Law Reform Commission’s submission that the adverse provisions involved in the 1990 Act and the potential breach of the privilege against self incrimination is arguably proportionate, given the state’s legitimate aim to investigate crime and the minimising safeguards contained in the Act.

The other category, "non-intimate" samples, can be taken by the Gardai themselves, and importantly as outlined in section 2(4)(b) the Gardai can gain a "non-intimate" sample without the consent of the individual (once the necessary authorisation has been granted). Thus the Criminal Justice Act 2006 (a wide ranging criminal Act for the Irish criminal process) and its provisions to amend and expand the powers of Gardai to take bodily samples are of particular importance. Section 14 amended the 1990 Act in a number of ways: it reclassified saliva and mouth swabs as non-intimate samples (thereby negating the need to secure consent), it clarified that a sample of hair, other than pubic hair, may be taken by cutting or individually plucking hairs by their roots, provided that the amount of hair

---

1168 Heffernan L, “The taking of forensic samples: A review of proposed reforms” 16(2) ICLJ 2, 6.
1169 As Heffernan outlines while a lack of legal advice may seem defensible, the Irish courts in the area of motoring offences have not ruled favourably on this issue. See for example Walsh v O’Buachalla [1991] 1 IR 56; DPP v Spratt [1995] 2 IRM 117. For a contrary approach see Condron v United Kingdom [2001] EHRR 1. Similarly will a religious approach find much credence? See for example North Western Health v HW [2001] 3 IR 622.
1171 Criminal Justice (Forensic Evidence) Act, s.2(4). As noted earlier, for an individual under 14 years of age the consent must be that of the parent or guardian, while for a person between the ages of 14 and 17 years, the consent of the person and a parent guardian is required. See s.2(10).
1172 The Criminal Justice Act 2006 was a wide ranging Act covering an array of issues in the criminal process, inter alia, provisions dealing with participation in organised crime gangs, sentencing for drug trafficking and firearms offences; offences for supplying drugs to prisoners; provisions to allow for the electronic tagging of offenders; and provisions dealing with anti-social behaviour.
1173 The changes in the 2006 Act in the area of DNA sampling are seen as a move to amalgamate DNA collection with retention in the form of a DNA database. As the minister noted when introducing the Act it was his intention _to draw up proposals for that purpose which would, having regard to constitutional requirements and the requirements of the European Convention on Human Rights, permit as extensive a database as possible_. Michael McDowell, Second Stage Speech, Criminal Justice Bill 2004, Dail Debates 15 February 2005, vol 597, col 1276.
plucked is reasonably considered necessary to constitute a sufficient sample.\textsuperscript{1174} This expansion of the non-intimate sampling category (predominantly the downgrading of a mouth swab to a non-intimate sample) lends credence to the thin end of the wedge and function creep arguments, which suppose that new police powers are often incremental in nature.\textsuperscript{1175} The downgrading of the mouth swab was founded on technological developments that enabled a sufficient DNA sample to be obtained from saliva samples and the increasing adoption of this method as the predominant sampling method in a number of jurisdictions.\textsuperscript{1176} For example, as was noted in chapter four, the buccal swab was downgraded to a non-intimate sample in the UK in 1994, thus eliminating the need for consent.\textsuperscript{1177} However, it is worth noting that other jurisdictions still consider it as intimate, for example in Australia the taking of such a swab still requires an individual’s consent and must be obtained by a medical practitioner or another appropriately qualified person.\textsuperscript{1178} Despite the downgrading of a buccal swab to a non-intimate sample, it has still the potential to be a highly invasive (and potentially dangerous)\textsuperscript{1179} procedure, as a recent Australian report observed

\[W\]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.\textsuperscript{1180}


\textsuperscript{1175} Feldman D, Civil Liberties and Human Rights in England and Wales (Oxford University Press 2002), 410–412.

\textsuperscript{1176} Interpol, DNA Handbook on DNA data exchange and Practice (December 2009), 26–27. Available at: \url{http://www.interpol.int/Public/Forensic/dna/handbook.asp}.

\textsuperscript{1177} See Criminal Justice and Public Order Act 1994, s.58. Scotland also non-graded the buccal swab, see Criminal Procedure (Scotland) Act 1995, s.18(6A).

\textsuperscript{1178} Crimes Act 1914, s.23WA.

\textsuperscript{1179} For example during the taking of a buccal swab there is the potential that the individual who is conducting the sampling may be at risk of being bitten by the person being subjected to the sampling.

\textsuperscript{1180} As commented in the Model Criminal Code Officers Committee during the Australian Law Reform Commission and the Australian Health Genetics Committee Report, Essentially Yours: The Protection of Human Genetic Information in Australia (ALRC 96, 2003), para. 41.26.
In other jurisdictions such as Canada, the United States and New Zealand the method of sampling ranges from a blood sample to a buccal swab. The issue of consent can prove problematic: for example in Canada, in *R v Borden* the Canadian Supreme Court held that evidence of bodily samples taken without the consent of the accused or judicial authorisation was inadmissible. As a result Bill C 1-04 was enacted; it introduced a warrant scheme under which the state can bring an *ex parte* application to court to authorise the execution of a DNA warrant on a person who is needed to provide a DNA sample as part of a criminal investigation. In contrast to the Canadian approach, it is worth noting that the authorisation to take a sample has been automatically afforded to the police in Ireland as opposed to by judicial authority. Thus despite the sensitive issues created by allowing agents of the state to collect DNA from suspected individuals, the executive chose to enable the police to determine the necessity of DNA sampling.

An analogy can perhaps be drawn with the situation surrounding the search of private property in Ireland (as both are correlated with a similar offence threshold, i.e., an arrestable offence). The protection of the private dwelling of an individual is particularly strong in Ireland, a breach of which would impinge upon the inviolability of the dwelling protected under Article 40.5 of the Constitution. Infringement of this right is not absolute and generally a search will be deemed lawful if, *inter alia*, it is conducted in accordance with the owner’s consent, under specific statutory authority, during the course of an arrest and in lieu of a search warrant.

In relation to a private dwelling, a Garda is generally restricted from entering in the absence of consent from the owner (or an individual reasonably believed to be the owner or in charge

---

1181 Criminal Code, RSC, 1985, cC-46 (section 487 071).
1182 The DNA Analysis Backlog Elimination Act, as amended, authorises compulsory collection from individuals in federal custody, including those detained, arrested or facing charges, and from individuals on release, parole or probation in the federal criminal justice system. See WSC 14135a.
1183 Section 48(2) Criminal Investigations (Bodily Samples) Act 1995 No 55.
1185 *R v Borden* [1994] 3 SCR 145
1188 For example under the Housing (Miscellaneous Provisions) Act 1997 s.12, a Garda investigating the unlawful occupation of a dwelling may enter premises in order to arrest an individual or to conduct a search.
1189 Section 6 of the Criminal Law Act 1997 provides a general power of entry, without a warrant, for the purpose of arrest and search in relation to all arrestable offences. An arrestable offence incorporates any offence which is potentially punishable by at least five years imprisonment. See Criminal Law Act 1997, s.2(1), as amended by the Criminal Justice Act 2006, s.8. For further discussion on the workings of s.6 see *People (DPP) v Laide and Ryan* [2005] 1 IR 209.
of the dwelling) unless the Garda in question has witnessed (or has been informed by another Garda) the owner within or entering the dwelling; or he or she reasonably suspects that before a warrant of arrest can be implemented the individual in question will abscond or attempt to obstruct the course of justice; or reasonably, suspects that before the warrant of arrest can be gathered that the person would commit an arrestable offence; or the individual predominately resides at the dwelling. 1190

It has been suggested that the accustomed means of a Garda lawfully entering a private dwelling is under the authority of a search warrant. 1191 Granting of a search warrant is predominately outlined in legislation, specifying circumstances (such as offence specification) and the individual vested with the responsibility to authorise the warrant 1192 (such as a District Court judge, a Peace Commissioner or a Garda, usually not below the rank of superintendent). 1193 A general provision to grant a search warrant relating to procuring...
evidence for an arrestable offence is outlined in the Criminal Justice (Miscellaneous Provisions) Act 1997. Under the terms of this power a District Court judge may issue a search warrant in relation to a specific location (including a private dwelling). A Garda, not below the rank of sergeant, must apply for the warrant under oath. The judge will issue the warrant if there are reasonable grounds for suspecting that evidence relating to the arrestable offence may be obtained from the identified location.

Returning to the issue at hand (the collection of a DNA sample from an individual), it is submitted that it is perhaps surprising that the legislature has provided a stronger protection for an individual’s home than the contents of an individual’s genome. Given the information contained within the human genome, described as our ‘blueprint for life’, it is arguable that we should afford this particularly sensitive information comparable (or perhaps even a higher threshold) of protection than we currently afford to a search of a private dwelling. It is an issue that we will perhaps have to revisit as our knowledge of the human genome continues to evolve and technology continues to enable us to reveal even further information. At this point, it is submitted that it is vital that the legislature place adequate barriers in place to minimise the human rights and due process concerns.

provision of such warrants. For an example of such criticism see Report of the Committee to Review the Offences Against the State Acts 1939–1998 (Stationery Office 2002), 142. For other provisions granting the power to grant search warrants to the Garda see s.14 of the Criminal Assets Bureau Act 1996 and s. 26(1) of the Misuse of Drugs Act 1977 (as amended by the Criminal Justice (Drug Trafficking) Act 1996, s.8). O’Malley has argued that this may be understood as requiring the individual vested with the authority to grant the warrant to consider the sworn evidence or information carefully satisfy himself as best he can that the furnished information is accurate, and make a considered judgment on whether to issue a warrant’. See O’Malley T, The Criminal Process (Roundhall 2009), 354. It is important to note that the Supreme Court in Damache v DPP [2012] IESC 11, have ruled s.29 of the OASA unconstitutional on the grounds that the individual granting such a search should be independent. The case has cast doubt on a number of other legislative provisions allowing for search warrants to be granted to members of the Gardai. To combat the uncertainty the Minister for Justice released a new Search Warrants Bill in June 2012 which is to update and amend the law in relation to search warrants. Under the Bill, Gardai (no lower than superintendents) may authorise such warrants only when a district judge is unavailable and the Garda in question is separate from the investigation. See Lally C, "Minister closes loophole of flawed search warrants” The Irish Times (9 June 2012).

Amended by the Criminal Justice Act 2006, s 6.

Usually when seeking to obtain a warrant, legislation stipulates that the information provided in support of the request must be sworn. For example, in DPP v Tamanah [1994] 1 IR 565, the Court of Criminal Appeal quashed the conviction of the accused which was based on the evidence obtained as a result of the warrant as it was discovered that the applicant garda had only sworn an oath after providing the relevant information to the District Court judge.

The issued warrant will contain the name of a specific Garda, who will be enabled (as a result of the warrant) to enter the specified location within one week from when the warrant was issued. Once inside the location the Garda specified on the warrant is allowed to seize anything within the location, or anything found in the possession of anyone on the premises during the search, which the specified Garda reasonably believes to be evidence of or in relation to an arrestable offence. It is an offence to obstruct a Garda from conducting a search which has been lawfully authorised. See Criminal Justice (Miscellaneous Provision) Act 1997, s 10(2) as amended by s 6 of the Criminal Justice Act 2006.
Surprisingly the 1990 Act is silent on how the Gardai may obtain a non-intimate sample and if reasonable force is allowed (and if so, to what extent force may be applied). The Act instead criminalises those (including the individual) who obstruct a sample being obtained.\textsuperscript{1197} It has been argued that the use of reasonable force by the Gardai to obtain a DNA sample is implicit and does not need to be explicitly outlined.\textsuperscript{1198} Similarly Boyle and Lawless argue (commentating on a similar problem involved in gathering a fingerprint) that “an interpretation which denied compulsory powers would render the section nugatory”.\textsuperscript{1199} The argument in favour of this position is that an alternative reading may frustrate the Gardai in obtaining relevant evidence from a suspect who intends to hide behind the lack of authority to physically obtain a sample, leading to a loss of evidence and jeopardising a potential conviction. However, it is suggested that the alternative view is preferable. The forceful taking of a sample from an individual is an extreme violation of an individual’s bodily integrity and privacy, thus it is submitted that this interference should be explicitly outlined so as to adequately set out the circumstances and situations in which such a sample may be obtained.\textsuperscript{1200} Despite initial plans to incorporate explicit procedures for the taking of a DNA sample within the Criminal Justice Act 2006,\textsuperscript{1201} the final version of the Act remained silent on this issue. The Law Reform Commission has recently noted that the taking of a sample should be explicitly outlined and prescribed in legislation, citing with approval the approach in England and Wales under PACE, which enables the police, under certain circumstances to

\textsuperscript{1197} The Act outlines that an individual who obstructs or attempts to obstructs a Gardai when taking a sample shall be guilty of an offence and liable on summary conviction to a fine not exceeding €1,270 and/or imprisonment for a term not exceeding 12 months, s.2(9). The Criminal Justice Act 2006 increased the penalty where a person obstructs a Garda in seeking to obtain a non-intimate sample to €3,000. In the Law Reform Commission consultation paper, O’Connor is cited as arguing that obstruction can be linked to the articulation provided by Lord Goddard in \textit{Bastable v Little} [1955] 3 All ER 406, who outlines a vague definition of obstruction as that which makes it difficult for the Gardai to conduct their duties. Law Reform Commission, \textit{Report on the Establishment of a DNA Database} (LRC 78 – 2005), para. 2.35.

\textsuperscript{1198} Ibid. Strengthening this view is the political commentary on this issue: when discussing the 1990 Act in the Parliamentary debates, for example, the Minister for Justice noted “[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 Gardai 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”. See \textit{Dail Debates} 22 February 1990, vol 463, col 1383.


\textsuperscript{1201} For example Head 10 of the Scheme of the Criminal Justice Bill 2003 contained a proposal to outline that reasonable force may be used by police to gather biometric samples under the 1984 Act (such as fingerprints, palmprints and photographs).
obtain samples from a detained individual when consent is not forthcoming. Thus as the IHRC note 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.

An important safeguard, outlined in the 1990 Act is the concept of the two step test. First, the authorising officer must have reasonable suspicion that the suspect was involved in an offence covered under the Act and secondly, the officer must have reasonable grounds that the sample is _relevant_ to the investigation (i.e. _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_). The rationale behind the two step test is that it attempts to prevent unnecessary sampling of suspects. It restricts sampling to cases where it is relevant: for example if a fingerprint is the only evidence found at the scene of a crime, it would be irrelevant (in the context of this specific crime) to subject a suspect to DNA sampling.

Thus in the absence of relevance or the probability that evidence may be adduced to suggest that sampling may become relevant, an order to sanction DNA sampling should not be authorised. It is primarily grounded on the desire to prevent the Gardaí from engaging in _fishing expeditions_ by arresting individuals for the sole purpose of garnering a DNA sample to test against other or future crimes. Although it is pertinent to note that a _relevance_ safeguard is not evident in the taking of other biometric identifiers such as fingerprints, palmprints or photographs. The higher threshold for DNA sampling is arguably in recognition of the increased intrusion and sensitive material inherent in the process. However,

---

1204 Criminal Justice (Forensic Evidence) Act 1990, s.4 and s.2(5)(b).
1205 It would also seem that the biological evidence located on the scene should be capable of yielding a viable DNA sample (and subsequently a DNA profile). See Heffernan L, _The taking of Forensic Samples: A review of Proposed Reforms_ (2006) 16(2) ICLJ 2, 3.
1206 The taking of fingerprints, palmprints and photographs is governed by s.4 of the Criminal Justice Act 1984, s.2 of the Criminal Justice (Drug Trafficking) Act 1996, s.30 of the Offences Against the State Acts 1939 to 1998 and s.50 of the Criminal Justice Act 2007. Individuals can be fingerprinted, palm printed and/or photographed without their consent, but only on the authority of a member of the Garda Síochána not below the rank of inspector (sergeant in the case of photographs). For further discussion on the taking of fingerprints, palmprints and photographs see Walsh D, Human Rights and Policing in Ireland: Law, Policy and Practice (Clarus Press 2009), chapter 5. There is also police power to collect fingerprints, palmprints and photographs from an individual who has been convicted of an indictable offence under the Probation Act, which may involve the individual presenting himself at a Garda station to be fingerprinted, palmprinted and photographed within seven days. See Criminal Justice Act 1984, s.28(1)(b).
it is submitted that such a distinction is not wholly persuasive. Moreover, in light of Marper (in which the Court held that the mere retention of information by the state engaged Article 8 of the ECHR) it may be necessary for a state to re-evaluate its justifications when collecting and retaining all information from its citizenry (a need which becomes heightened when the information is being stored by the police).

The concept of ‘relevance’ has been subject to significant discussion. The Law Reform Commission has recommended that the relevance of a forensic sample to an investigation should no longer be necessary to grant the authorisation for the collection of a particular sample.¹²⁰⁷ The Commission justified the dissolution of the ‘relevance’ principle on the grounds of expediency (already associated with other biometric identifiers), as Heffernan elucidates “the commission consider[ed] that ‘the pragmatic principles of collection’ applied to fingerprints and photographs should be transferred to the DNA sampling of suspects and that this would be in line with the establishment and use of a DNA database.”¹²⁰⁸

Although calls to relax the sampling requirements have not met with universal approval. For example, the Irish Human Rights Commission has called for a rigid regime to be outlined surrounding the process of deriving a DNA sample from an individual, incorporating the required levels of consent, relevance and authorisation and the IHRC has argued that prior to authorisation (particularly surrounding the taking of a non-intimate sample, which does not require the consent of the individual involved) that a senior Garda officer should be convinced that the sampling ‘is justified in all the circumstances’ predicated on a consideration of the public interest involved in obtaining evidence (which may be pertinent to an investigation) outweighs the human rights infringements involved.¹²⁰⁹ It is submitted that the totality of circumstances approach proffered by the IHRC is persuasive (with the exception of the authorisation being vested with the Gardai as opposed to an independent body).

¹²⁰⁹ The IHRC report outlined that the authorising Garda officer should have regard to the following circumstances “The seriousness of the circumstances surrounding the commission of the relevant offence and the gravity of the relevant offence; the degree of the suspect’s alleged participation in the commission of the relevant offence; the age, physical and mental health, cultural background and religious beliefs of the suspect, to the extent that they are known; whether there is a less intrusive but reasonably practical way of obtaining evidence tending to confirm or disprove that the suspect committed the relevant offence; if the suspect gives reasons for refusing to consent – the reasons for refusing”. See Irish Human Rights Commission, Observations on the Scheme of the Criminal Justice Bill 2003 (January 14, 2004), 33–34. The IHRC has maintained this position in two subsequent reports see IHRC, Observations on the General Scheme of the Criminal Justice (Forensic Sampling and Evidence) Bill 2007 (February 2007); IHRC, Observations on the Criminal Justice (Forensic Evidence and DNA database System) Bill 2010 (March 2010).
While the 1990 Act contained a number of safeguards, section 5 enabled the Minister for Justice, Equality and Law Reform to draft and implement regulations to accompany the Act.\textsuperscript{1210} The provision has only been exercised once, in the form of the Criminal Justice (Forensic Evidence) Act 1990 Regulations 1992.\textsuperscript{1211} The Regulations are designed to provide guidance for the gathering of forensic samples: for example, regulation three (described as a \textit{guiding principle}) outlines:

in carrying out their functions under these Regulations members or other persons concerned shall act with due respect for the personal rights of persons in custody and their dignity as human persons, and shall have regard for the special needs of any of them who have not attained the age of 17 years or who may be under a physical or mental disability.\textsuperscript{1212}

The regulations outline a myriad of provisions, \textit{inter alia}: recording \textit{as soon as practicable} in the custody of record or prison record of details concerning the taking of bodily samples;\textsuperscript{1213} the situation surrounding authorisation;\textsuperscript{1214} the cautioning of suspects;\textsuperscript{1215} the consequences of refusing to consent;\textsuperscript{1216} and the details surrounding the taking of a sample.\textsuperscript{1217} Despite the need to regulate the taking of samples from individuals, it is submitted that Heffernan is correct to observe that \textit{the regulations are a beneficial}

\begin{itemize}
\item \textsuperscript{1210}The powers to make regulations under s.5 of the 1990 Act is expressed both in general and specific terms. Subsection (1) states that the minister shall make regulations and subs.(2) that those regulations shall make provision for the specific issues outlined in regulations 4 to 8. In has been suggested that the generality of subs. (1) enables the implementation of future regulations addressing other elements of the sampling process. Heffernan L, \textit{–The taking of forensic samples: A review of proposed reforms\textquotedblleft} (2006) 16(2) \textit{ICLJ} 2, 8. For example an attempt to outline additional regulations was proposed in the Criminal Justice Bill 2004, including the manner in which the samples may be taken, the location and physical conditions in which samples may be taken, the persons (including members of Garda Siochana) and the number of such persons who may be present when samples are taken.
\item \textsuperscript{1211} SI No 130 of 1992. The Regulations are similar to Regulation 18 of the Criminal Justice Act 1984 (Detention of Persons in Custody in Garda Siochana Stations) Regulations 1987, SI No 119 of 1987 (\textit{–Custody Regulations\textquotedblleft}).
\item \textsuperscript{1212} Regulation 3.
\item \textsuperscript{1213} See Regulations 4 to 7. See Regulation 6 of the Custody Regulations for further details on the custody record.
\item \textsuperscript{1214} Regulation 4.
\item \textsuperscript{1215} Regulation 5.
\item \textsuperscript{1216} Regulation 6.
\item \textsuperscript{1217} Including the name of the person from whom the sample was taken, the offence in respect of which the sample was taken, the nature of the sample, the name of the person who took the sample, the date and time the sample was taken and the manner in which it was taken; for further details see Regulation 7. In addition Regulation 8 incorporates a safeguard for the taking of samples from persons under the age of 17: for example, samples shall not be taken from such a person in the absence of a parent or a guardian. The relevant forms necessary for the sampling procedures are contained in the appendices to the Regulations.
\end{itemize}
reinforcement of the safeguards in the parent Act but in substance add little flesh to the bones of the legislative provisions.\textsuperscript{1218}

It has been suggested that clear and formal safeguards for the collection of samples should be formulated and implemented to minimise the intrusions involved in the sampling process. For example, the IHRC has recommended (and has been seconded by the LRC) that the sampling process should incorporate the following safeguards:

(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 procedures; (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 bodily samples; (viii) the number of members of the Garda Síochana 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.\textsuperscript{1219}

\textsuperscript{1218} Heffernan L, “The taking of forensic samples: A review of proposed reforms” (2006) 16(2) ICLJ 2, 8. Additional regulations were implemented in 2008. See the Criminal Justice (Forensic Evidence) Act 1990 (Amendment) Regulations 2008 (SI No 154 of 2008). Available at: \url{http://www.irishstatutebook.ie/2008/en/si/0154.html}. The Regulations primarily surrounded the introduction of procedures (particularly surrounding the securing of appropriate consent) for the taking of samples from individuals under the age or 18 (ranging from those at 17, to those from 15–17 and those under 14).

Given the physical intrusiveness involved in the sampling process (combined with the sensitive information contained within the gathered biological sample) it is imperative that bodily sampling is complemented by an adequate regime that promotes and protects the rights, due process values and ethical concerns of individuals targeted by the process. Thus as Heffernan suggests “safeguards along the lines suggested by the [I]HRC would serve as an essential bulwark against arbitrariness and abuse in the practical exercise of the power to take samples”. Whether these safeguards (and/or additional protections such as the choice of forensic procedure utilised) should be housed within the legislation or complementary regulations is an important issue which will receive further commentary during the analysis of the 2010 Bill. At this juncture it will be noted that while it is imperative that adequate safeguards are constructed, it is important that these safeguards are not illusory in nature but in fact are implemented and enforced in practice. Such safeguards should be organic and adaptable to “reflect” the developing nature of the technology.

On the issue of DNA retention the Act outlines a number of provisions surrounding the retention of DNA samples and their associated records. A sample (and related records) taken under the terms of the Act must be destroyed where proceedings for the relevant offence have not been instituted against the individual within 12 months of the sample being taken where “the taking of the sample and the failure to institute the proceedings within that period is not due to the fact he has absconded or cannot be found”. The reasoning behind section 4(2) is that it facilitates the retention of DNA samples and associated records during the investigation of an offence. This recognition, which has been expanded to 12 months under the 2006 Criminal Justice Act, was recommended by the Leahy report, which argued:

---


1221 Section 4(1) states “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 a record shall be destroyed in like manner”.

1222 Criminal Justice (Forensic Evidence) Act, ss 4(1) and 4(2). This was updated from six months under the Criminal Justice Act 2006.

[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 un-convicted 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.\footnote{Report of the Expert Group Appointed to Consider Changes in the Criminal Law (1998) (Leahy Report), 41.}

This recommendation (and resultant amendments within the 1990 Act) recognises that the Gardai do need to retain DNA samples and derived information during the course of an investigation (the question of retention beyond the investigation in question is more problematic and will be discussed further below).\footnote{The destruction provisions under the 1990 Act are similar to those outlined in the Criminal Justice Act 1984 in relation to photographs, fingerprints and palmprints, although s.8(5) of the 1984 Act allows the individual involved (or an assigned representative) to witness the destruction of their fingerprints, palmprints or photographs and this provision (to witness destruction) is not contained within the 1990 Act. Thus it is arguable that biological samples have less of a degree of protection than other biometric identifiers. Although this issue may be more to do with the practicalities of the situation, i.e. biological samples and associated records are stored and derived in the Forensic Laboratory as opposed to fingerprints, which are stored by the Gardai themselves. Thus it may not be feasible to enable people to witness the destruction of their biological samples.} It is worth noting that the 1990 Act outlines that when proceedings have been engaged and if the charges are dropped, discontinued or the individual is acquitted then the sample and related records must also be destroyed within a period of 21 days.\footnote{Criminal Justice (Forensic Evidence) Act, s. 4(3). Section 8 of the Criminal Justice Act 1984 (as amended by the 2006 Act) outlines a similar safeguard for fingerprints which have been obtained under the 1984 and 1996 Acts. If proceedings are brought and the applicant is subsequently acquitted fingerprints and associated records must be destroyed within 21 days. Fingerprints obtained under the Offence Against the State Act need not be destroyed.} Although there is a provision for the DPP to apply to the court to authorise retention of a sample (and associated records) for a specific purpose and period,\footnote{Criminal Justice (Forensic Evidence) Act, s.4(5) states that _if_ a court is satisfied, on an application being made to it or on behalf of the Director of Public Prosecutions or the person from whom the sample was taken, that there is good reason why records and samples to which this section applies should not be destroyed under this section, it may make an order authorising the retention of such records and samples for such purpose or period as it may direct_.} when there is a _good reason_ to do so.\footnote{For a consideration of the _good reasons_ that may justify retention see McGinley v Judge Michael Reilly [2006] IEHC 357. This provision differs from s.8(7) of the Criminal Justice Act 1984 (on the issue of fingerprints and photographs), which limits the retention to a further six months only.}

The Act seemingly allows the retention of DNA samples (and derived information) from individuals who have been convicted of an offence which is covered by the 1990 Act. This confusion is caused by the lack of explicit commentary on the retention requirements for
those convicted of an offence (who have lawfully provided a sample under the terms of the Act).\textsuperscript{1229} It has been suggested that because the Act explicitly outlines the circumstances for the destruction of samples, that situations that fall outside these provisions may allow the retention of the samples obtained. For example, the LRC observes

\begin{quote}
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 \textit{expression unius est exclusion alterius} rule), that if these suspects are convicted, their profiles can be retained.\textsuperscript{1230}
\end{quote}

Thus under this interpretation it would seem that the retention of the DNA information of those convicted of an offence may be permissible. Therefore it is currently unclear to what extent the Gardai have been retaining DNA samples as a result of the confusion on this issue. It is worth noting that in contrast, section 11 of the Criminal Justice (Miscellaneous Provisions) Act, 1997 has explicitly enabled the retention of the fingerprints of certain individuals on an electronic fingerprint database.\textsuperscript{1231}

7.3.1. Parallel System

Despite the presence of the Criminal Justice (Forensic Evidence) Act 1990, there exist two parallel DNA sampling regimes operating in Ireland: a common law consent regime and a regulated regime outlined under the 1990 Act.\textsuperscript{1232} A similar anomaly has existed in the taking of another biological identifier, namely fingerprints. For example, despite the regulation of fingerprinting outlined in the Criminal Justice Act 1984, a practice of asking suspects to ‘volunteer’ a fingerprint emerged (or arguably continued) despite the introduction of a formal statutory regime. The Law Reform Commission reports that this ‘voluntary’ means of

\begin{flushright}
\textsuperscript{1229} Although the 1990 Act does outline provisions for those who fall under the Probation of Offenders Act 1907. 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. The provision states that 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 s.4 of the Criminal Justice Act 1984 applies during the three year period.


\textsuperscript{1231} Section 11(1) states ‘A power under any enactment, whether passed before or after the passing of this Act, to take the fingerprints or palmprints of any person shall include the power to record an image of that person’s fingerprints or palmprints by electronic means or in any other manner’. The electronic fingerprint database is managed and maintained by the fingerprint section of the technical bureau. A new electronic system (PRINTAK) became operative in October 2007. For further details see Garda website, available at: http://www.garda.ie/Controller.aspx?Page=47&Lang=1

\end{flushright}
obtaining a fingerprint is the _most commonly used [method] in criminal investigations by the Gardai_. The use of this method is beneficial for Gardai as it does not necessitate forming the required level of suspicion under the Act and can be useful for the expediency of an investigation. However, a major concern is that because the fingerprint is taken outside the remit of the Act, it is therefore not subject to the relevant safeguards that have been drafted to minimise the impact on those subject to sampling. Queries have been made in relation to the lawfulness of this _voluntary_ method. In the _People (DPP)_ v _Carroll_, McMahon J, held that the obtaining of the accused's fingerprints and palmprints by this method was unlawful and they were deemed inadmissible. This decision echoes the recommendations of the Law Reform Commission, which recommended that _the taking of photographs and prints should be governed exclusively by legislation, even in the case of those taken on a voluntary basis_.

Despite this decision and the LRC recommendation (which was similarly extended to DNA samples) it would seem that the parallel regime is still in operation. In relation to DNA samples, the practice has been aided by the confusion surrounding the interpretation of section 2(11) of the 1990 Act. Section 2(11) states that it is _an Act to amend and extend the law to authorise the taking of bodily samples for forensic testing from persons suspected of certain criminal offences_. This interpretation was affirmed by the Supreme Court in the _DPP v Boyce_. Specifically the Court considered whether it was lawful for a Garda to take a blood sample from a relevant individual in custody without utilising the provisions of the 1990 Act (i.e., by using the existing approach of asking an individual to volunteer a sample).

---


1234 _People (DPP)_ v _Carroll_ Circuit Criminal Court, 24 February 2004. In the case, the accused was arrested under s. 4 of the Criminal Justice Act 1984, bringing s.6 and the statutory powers to take fingerprints into play.


1236 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. Ibid. para. 4.61.

1237 Moreover its notes that the powers in the Act are without prejudice to existing Garda powers.

1238 _Director of Public Prosecutions v Boyce_ [2008] IESC 62. Boyce had given a sample of blood voluntarily for the purpose of having it tested in connection with the offence for which he was detained, but was not informed that the evidence might be used in connection with other offences. The Gardai relied on common law to obtain a sample which was admitted at trial as evidence and contributed to his being found guilty of rape, attempted rape, indecent assault and sexual assault. The appellant challenged the conviction on the basis that his decision to give a DNA sample was not properly informed consent as he was not cautioned.

1239 The Court of Appeal had refused leave to appeal but certified the question to the Supreme Court.
Denham J argued that the wording of section 2(11) did not intend to change the existing common law power that had existed before the passing of the 1990 Act, stating "by inference it is referring to the establishment of a scheme which does not alter the powers of the Garda Síochána", holding that the Act operates "in tandem with the common law" as an "alternative". Finnegan J, echoing Denham J’s finding promoted the epistemological quality of forensic evidence "the benefit to be derived from forensic evidence in the investigation and prosecution of crime, in enabling the guilty to be detected and the innocent to be vindicated and the object of the statute strongly support a contention which preserves existing powers". Murray J argued that the Act created "a distinct statutory regime fundamentally different in nature and consequences from the gathering of common law rules or powers" which constituted "an expression of the law rather than abrogation of the existing law". However, Fennelly J dissented, arguing that the 1990 Act applies to detention under certain provisions only, and that it would be "absurd ... inherently inconsistent and potentially unfair" if the Oireachtas intended to lay down a regime which the Gardai could "simply ignore ... by seeking consent based on common law".

The dual system that is currently in operation has been subject to substantial criticism. Heffernan has argued that "it seems anomalous that the Oireachtas should perceive a need for regulation of the inherently sensitive practice of forensic testing but that the promulgated legislative regime should then be sidestepped in practice". Similarly Walsh has argued that the "reasoning of CCA and the majority in the SC is not persuasive ... They have given encouragement to Gardai to avoid statutory regimes aimed at providing checks and balances for persons under investigation by relying on the voluntary cooperation of such persons where possible". As Campbell notes the co-existence of common law and statutory schemes for collecting and retaining DNA samples may lead to the latter being circumvented.

---

1240 Director of Public Prosecutions v Boyce [2008] IESC 62, para. 58.
1241 Ibid, para. 63.
1242 Ibid.
1243 Ibid. Murray J expanded that "It would indeed be extraordinary if the Oireachtas contemplated that any forensic sample freely and voluntarily provided by a person in custody and then forensically examined by the Gardai which was lawful before the passing of the Act should then be considered unlawful after the passing of the Act without any express provision to that effect, even though it was provided without any element of coercion and when the consequences of the refusal were nil from the point of view of an accused."
1244 Ibid
1245 Heffernan L, Scientific Evidence: Fingerprints and DNA (Firstlaw 2006), 175.
lawfully by the Gardai and seems to undermine the logic of having a statute in the first instance'.

The adoption of a dual system by allowing the Gardai to choose whether to ask an individual to volunteer a sample or whether to enforce the powers of the 1990 Act is undeniably problematic. However, there are a number of reasons why Gardai may have continued to utilise the traditional common law regime in lieu of the 1990. For example, the 1990 Act has been described as a complicated "mire of legal technicality" as Campbell outlines. Collection of a person's DNA under the common law scheme allows data to be compared with crime scene evidence, and this assessment may be incriminatory or exculpatory. In contrast, the 1990 Act is somewhat more complex in terms of the demands it places on the police and the types of person from whom data may be gathered.

To elucidate the complexity of the 1990 Act, it has been suggested that for this statute to be lawfully exercised by a member of An Garda Síochána, it is necessary that at least three Gardai must take a combination of approximately 20 steps. They are as follows.

The Act requires that the individual must be lawfully arrested and detained in a Garda station under one of the outlined provisions; a Garda not below the rank of superintendent must suspect on reasonable grounds that the detained person was involved in the offence, believe on reasonable grounds that the sample will tend to confirm or disprove involvement of the detained person, give an authorisation and confirm authorisation in writing as soon as practicable; the Garda who intends to take the sample or cause it to be taken must inform the suspect of the nature of the offence, that authorisation must be given, that the results of any test on any sample can be used, must tell the suspect in ordinary language that the sample is required for the purpose of forensic testing, that his consent is necessary and what the effect of a refusal by him or her could be; the member in charge of the Garda Station must record, as soon as is practicable, in the custody record, the name and rank of the person who

---

1251 Section 30 of the Offences Against the State Act 1939; s.4 of the Criminal Justice Act 1984; s.2 of the Criminal Justice (Drug Trafficking) Act 1996 and s.50 of the Criminal Justice Act 2007.
1252 In this act 'appropriate consent' means the case of a person who has attained the age of 17 years, for those under the age of 17 but above the age of 14 then the consent of a parent or guardian is also necessary.
gave the authorisation and the date and time it was given, and record, as soon as is practicable, in the custody record, the name and rank of the person who gave the suspect the information set out above, and record, as soon as is practicable, in the custody record the fact that the suspect has consented to the taking of a sample together with the date and time of the consent being given, attach the consent document to the custody record, record the name of the person from whom the sample was taken, record the offence in respect of which the sample was taken, record the nature of the sample and record the date and time the sample was taken and the manner in which it was taken. It has been queried why the Oireachtas considered it necessary to construct such a "dense fog" of regulation.1253

The provisions in 1990 differ from similar provisions under the Criminal Justice Act 1984 and the corresponding Treatment of Persons in Garda Custody Regulations.1254 Section 7(3) of the 1984 Act states that "a failure on part of any member of the Garda Síochána to observe any provision of the regulation shall not of itself affect ... the admissibility in evidence of any statements made by him". A similar provision is not included in the 1990 Act and as a criminal statute it is arguable that it will be strictly construed. Thus perhaps an understandable fear and rationale for why the Gardai have been reluctant to use the act is founded on the overly technical nature of the sampling process and an apprehension that a failure to adhere to the numerous steps may result in useful evidence being deemed inadmissible at trial.

Moreover coupled with the technicality of the 1990 Act there was a delay in implementing the legislation. The Act did not come into operation until the 5 June 1992, thus during the intervening period to utilise DNA during an investigation Gardai had to continue to use the common law power of sampling. Given that the common law regime is a less elongated process than the statutory regime it may explain why Gardai were reluctant to implement the more complicated procedures outlined by the Act once it eventually came into force. While there may have been judicial confusion regarding the role of the common law and the 1990 Act, a Garda circular of 1995, referring to the 1990 Act, addressed to all members of the force, would seem to indicate that the Gardai were specifically in favour of avoiding and instructed to sidestep the 1990 Act when possible. In effect, the circular advised all members of the force, where there is a wish to obtain a bodily sample, to seek to obtain it, in the first instance by consent, "Where such a person refuses to provide or permit the taking of a...

sample, then and only, then, should the Gardai consider invoking the provisions of the above Act.\textsuperscript{1255}

However, it is submitted that despite the complexity and delay in establishing the 1990 Act, it is regrettable that the Gardai actively attempted to undermine the utility of the legislative regime by resorting to the traditional common law power. While section 2(11) may be read in a manner suggesting that the two regimes may run concurrently, it is submitted that the Supreme Court’s ruling in Boyce is not persuasive. Given the inherent sensitivity surrounding the samples collected under the 1990 Act, it is imperative that these samples are protected by rigorous safeguards (particularly surrounding the area of destruction and use), which are avoided by resorting to the common law regime (it is submitted that rebuttals based on the argument that allowing an individual to consent to a forensic procedure would promote an individual’s sense of autonomy are not convincing). Therefore it is submitted that Walsh is correct when he observes that because of this decision the Supreme Court has given encouragement to Gardai to avoid statutory regimes aimed at providing checks and balances for persons under investigation … this comes uncomfortably close to the questionable practice of avoiding the checks and balances that kick in on arrest by inviting a suspect to accompany Gardai to the Garda station to assist them with the investigation.\textsuperscript{1256} Thus it is submitted that section 2(11) should be read as limiting the sampling of individuals within the grounds of the 1990 Act.

Finally, in anticipation of the establishment of a DNA database, an interesting question will surround the future of the samples collected outside the scope of the 1990 Act. Given that individuals ‘volunteered’ these samples in the context of a specific investigation it is suggested that the placement of the derived DNA profiles on a future database should be explicitly prohibited under any proposed framework.

7.4. Ireland Proposed DNA Measures: DNA Database

At a genetics conference in 2008, Rockne Harmon, a California Attorney, exclaimed his surprise that Ireland did not have a DNA identification database, ‘I can’t imagine being an investigator trying to solve a crime without an offender [DNA] database, I wouldn’t

\textsuperscript{1255} Director of Public Prosecutions v Boyce [2008] IESC 62, (Fennelly J dissenting judgement).

\textsuperscript{1256} Walsh D, Human Rights and Policing in Ireland: Law, Policy and Practice (Clarus Press 2009), 118.
recommend it.\textsuperscript{1257} Harmon, discussing the recent changes to the Californian DNA database to extend its scope to include arrestees, rebutted concerns based upon the presumption of innocence arguing _Will people feel that they can’t be trusted [the government] if they have their profiles? Sure. But I think this [DNA database] can and has solved cases._\textsuperscript{1258}

Given the growth of national DNA databases internationally it was predictable once DNA profiling was deemed admissible in an Irish court of law and the use of DNA profiling became an available facet of criminal investigation that calls to establish a DNA database in Ireland would become increasingly popular. As discussed throughout the thesis, the creation of a DNA database necessitates two primary factors, namely the collection and retention of DNA information. As the previous section illustrated the first limb of this test is in operation in Ireland as a result of the 1990 Act (and the parallel common law regime). However,

\textsuperscript{1257} Rockne Harmon speaking at a genetics conference in Dublin in 2008. See O’Connell C, –DNA Database of offenders could help solve crimes, says former US attorney” The Irish Times (22 September 2008). In 2004 California passed Proposition 69 (the DNA Fingerprint, Unsolved Crime and Innocence Protection Act). The proposition contained two major changes to DNA collection and retention provisions in California: it authorised the collection and subsequent retention of DNA samples from all those (including juveniles) convicted of a felony offence and (from 1 January 2009), it authorised the collection (and subsequent retention) of DNA from every adult arrested for a felony offence. As a result of the changes in California, it now has the most inclusive database regime among the states in the U.S. and it is currently the third largest database in the world. As of February 2012 it houses 1,834,465 comparator profiles on its DNA database. See FBI website, available at: http://www.fbi.gov/about-us/lab/codis/ndis-statistics. With an average of 330,000 individuals arrested in California each year, it is set to continue rapidly expand. (See Moore S, –F.B.I. and States vastly expand DNA Database” The New York Times (18 April 2009), available at: http://www.nytimes.com/2009/04/19/us/19DNA.html. In late 2009 ACLU of Northern California brought a case to examine the constitutionality of the California provisions. See American Civil Liberties Union of Northern California, –ACLU Lawsuit Challenges California’s Mandatory DNA Collection at Arrest” (07 October 2009), see http://www.aclunc.org/news/press_releases/aclu_lawsuit_challenges_california's_mandatory_dna_collection_at_arrest.shtml?ht=dna%20dna. The practice of retaining the DNA of those arrested for felony arrestees has recently been affirmed by a majority decision (2-1) in the US 9th Circuit Court of Appeals (overturning the decision of the Californian appeal court last year that found the practice to be unconstitutional). See Williams C, –Appeals court upholds DNA testing of felony suspects” LA Times (24 February 2012), available at: http://articles.latimes.com/2012/feb/24/local/la-me-dna-swabs-20120224. For further reading on DNA policy in California see Camerson S, –California’s DNA databank joins the modern trend of expansion” (2002) 33 McGeorge Law Review 219; Manuel VM, –State DNA database and Data bank expansion laws: Is it time for California to expand its DNA data base law to include all convicted felons?” (2003-2004) 31 W St UL Rev 339; Simoncelli T and Steinhardt B, “California’s Proposition 69: A Dangerous Precedent for Criminal DNA Databases” (2005) 33 JL Med & Ethics 279–293; Simoncelli T, –Dangerous Excursions: The case against expanding forensic DNA databases to Innocent Persons” (2006) 34(2) JL Med & Ethics 390–397; Berlet R, –A Step too far: Due Process and DNA Collection in California after proposition 69” (2006) 40 UC Davis L Rev 1481.

\textsuperscript{1258} O’Connell C, –DNA Database of offenders could help solve crimes, says former US attorney” The Irish Times (22 September 2008).
currently the second element of the test, the retention of the obtained DNA samples, has not explicitly been established in Ireland.\textsuperscript{1259}

Calls to create a formal DNA database were first aired in 1999. In a 1999 Dail debate Jim Higgins (a TD from Fine Gael) heavily criticised the government’s failure to amend the sampling laws in the country and raised the issue of establishing a DNA identification database.\textsuperscript{1260} Higgins referred to the 1990 Act as ‘hopelessly’ out of date while arguing that ‘[Ireland] is one of the few developed countries in the western world which does not have a comprehensive database’.\textsuperscript{1261} It may seem outlandish to refer to an Act which had been in force for approximately seven years as being ‘hopelessly’ out of date but as was illustrated in chapter two DNA profiling is still a relatively embryonic technology and has been subject to significant and continuing development since its introduction to the legal system in the late 1980s.\textsuperscript{1262}

Higgins illustrates the influence of policy transfer on the DNA database debate by referring to the ‘impressive DNA Database in the UK ... encompassing 500,000 entries in Britain which has proved an invaluable tool in investigating cases of rape, murder and assault.’.\textsuperscript{1263} In 1999, the DNA database in the UK was only four years old and while it had a number of success stories and was showing early promise as a tool for criminal investigation to describe it as an ‘invaluable tool’ would seem to be an unqualified exaggeration aimed at undermining the government’s delay in establishing a DNA database and is an early example (in Ireland) of the difficulty in facilitating an objective and rhetoric free debate on the issue of DNA database policy.

Again in 2001 Deputy Alan Shatter questioned the Minister for Justice on ‘the steps he will take to establish a DNA database; and his views on whether the absence of such a database is hindering the Garda in investigating serious crime’.\textsuperscript{1264} The then Minister for Justice O’Donoghue responded that a DNA database was being considered; however, ‘such a development would have complex constitutional, legal, data protection and practical

\textsuperscript{1259} Although as illustrated in the previous section the lack of direction on those convicted of a crime following being sampled under the 1990 Act and the routine deployment of the common law ‘volunteer’ regime means that the current situation in Ireland for DNA samples (and derived information) is unclear.


\textsuperscript{1261} \textit{Dail Debates} 15 June 1999, vol 506, col 37.


\textsuperscript{1263} \textit{Dail Debates} 15 June 1999, vol 506, col 156[emphasis added].

\textsuperscript{1264} \textit{Dail Debates} 03 October 2001, vol 541, col 142.
implications’ and made the important point that ‘the absence of a formalised national DNA database does not preclude the Garda Síochána from availing of DNA profiling in criminal investigations.’ Significantly the minister elaborated ‘there remains considerable untapped potential within the criminal justice system for DNA profiling techniques and I am already initiating measures to realise this potential’. The minister’s comment that he intended to ‘realise the potential’ of DNA within the criminal justice system was an ominous quote. Given the sensitive information contained in a DNA sample and the additions to our knowledge by the Human Genome project, it is perhaps arguable that government officials need to take care in the language that they utilise when discussing their intentions for the use of DNA in the criminal justice system.

In 2005 the government was again queried about the delay in establishing a DNA database, Deputy Jim O’Keeffe, asking the then Minister for Justice McDowell ‘the reason for the delay in publishing draft proposals on the establishment of a DNA databank’. The minister for the first time gave a clear indication of the government's intention:

It is my intention to draw up proposals for the establishment of a DNA databank which would, having regard to constitutional requirements and the requirements of the European Convention on European Rights, permit as extensive a databank as possible. As I previously indicated to the House, the Law Reform Commission is examining the issues surrounding the establishment of a DNA databank.

There are a number of interesting points in the minister's statement: firstly, as the quote indicates, the government had (in 2003) requested the Attorney General (Rory Brady) to direct the Law Reform Commission to examine the issues surrounding the establishment of a DNA database and a forensic sampling regime in Ireland; secondly he acknowledged the constitutional and ECHR difficulties that the establishment of database would create: and thirdly, his statement that he intended to adopt ‘as extensive a databank as possible’. On the first matter the Attorney General, pursuant to section 4(2)(c) of the Law Reform Commission Act 1975, asked the Law Reform Commission to examine the following matter:

1265 Ibid., col 218. The minister noted that at the time approximately 500 cases had been assisted by the use of DNA profiling.
1266 Ibid. col 222.
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.\(^{1269}\)

The Commission recognised that its primary task was to consider the parameters for establishing a DNA database which would consist of DNA profiles (derived from DNA samples), stored in an electronic repository for comparison with crime scene profiles (which are derived from crime scene samples).\(^{1270}\)

In its detailed analysis the Commission produced a 282 page consultation paper,\(^{1271}\) followed by a 128 page Report.\(^{1272}\) The Commission examined a wide range of issues (beyond those specifically requested by the minister) during the course of its examination, inter alia: a detailed overview of the science behind DNA and DNA profiling;\(^{1273}\) the advantages of using DNA profiling during the course of an investigation;\(^{1274}\) the relationship between individual rights and DNA;\(^{1275}\) an examination of the current sampling regime;\(^{1276}\) a theoretical discussion on the collection and retention of DNA samples;\(^{1277}\) the establishing of a DNA database (including its purpose and scope);\(^{1278}\) a separate examination of the retention of DNA samples;\(^{1279}\) an examination of the use of DNA once it has been lawfully retained;\(^{1280}\) the necessary oversight, regulation, quality control and accreditation that should be...


\(^{1270}\) Ibid.


\(^{1274}\) Ibid. chapter 2.

\(^{1275}\) Ibid. chapter 3.

\(^{1276}\) Ibid. chapter 4.

\(^{1277}\) Ibid. chapter 5.

\(^{1278}\) The Law Reform Commission’s recommendation is contained in its *Report on the Establishment of a DNA Database* (LRC 78 – 2005), chapter 1 and 2.


established in conjunction with a DNA database,\textsuperscript{1281} and the issue surrounding the admissibility of DNA evidence at trial.\textsuperscript{1282}

For the sake of avoiding repetition a detailed examination of the Commission’s proposals will not be made (the Commission’s findings will be used where appropriate when examining the Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010 in the penultimate section of the chapter).\textsuperscript{1283} However, briefly, and returning to the specific question asked by the minister (the scope of retention) the Commission recommended that the government should establish a limited DNA database.\textsuperscript{1284} The Commission found that a comprehensive database would involve a disproportionate interference with the privacy and bodily integrity rights of innocent citizens that would run counter to the European Convention on Human Rights.\textsuperscript{1285} Focusing on the fact that the database would be used primarily for criminal investigation, the Commission recommended that the database should include the profiles of suspects of serious crime, convicted persons and volunteers. As Heffernan notes the Commission’s recommendation ‘represents a compromise between two opposing schools of civil libertarian thought [i.e. the concept of a universal DNA database against the prohibition of DNA retention]’.\textsuperscript{1286}

It proposed that the scope and purpose of the database should be stated in precise terms in primary legislation\textsuperscript{1287} and it did not advocate an expansion of the offences to which sampling applied under the 1990 Act.\textsuperscript{1288} On the issue of retention, it recommended that DNA profiles of individuals arrested under designated offences should be retained on the database. In its Consultation Paper the Commission had originally recommended that all those arrested for

\begin{flushright}
\textsuperscript{1283} For an excellent overview of the Commission’s findings see Heffernan L, ‘The Law Reform Commission’s proposed DNA database: issues of scope’ (2006)12(2) MIJI 56.
\textsuperscript{1284} The Law Reform Commission’s recommendation is contained in its \textit{Report on the Establishment of a DNA Database} (LRC 78 – 2005), which followed the publication of a \textit{Consultation Paper on the Establishment of a DNA Database} (LRC CP 29 – 2004).
\textsuperscript{1285} The Ibid. citing the ECHR standard that an interference with such rights must be necessary in a democratic society.
\textsuperscript{1286} Heffernan L, \textit{Scientific Evidence: Fingerprints and DNA} (Firstlaw 2006), 180.
\textsuperscript{1288} Law Reform Commission, \textit{Report on the Establishment of a DNA Database} (LRC 78-2005), para. 2.47.
\end{flushright}
designated offences should have their DNA profile retained indefinitely, on the basis that it would increase the utility of the database for criminal investigation.\textsuperscript{1289} It argued that this approach was a proportionate balance between the rights of the individual and the interests of society in the prevention and detection of crime.\textsuperscript{1290} However, in the Report, the Commission amended its approach and stipulated that both the profile and the sample must be destroyed after 12 months if proceedings for the offence have been discontinued, or where an individual has been acquitted or discharged\textsuperscript{1291} (although further retention could be sought by the DPP under certain circumstances).\textsuperscript{1292} The Commission’s \textit{volte-face}, is seemingly predicated on the trend in other European countries of pursuing a limited retention regime for those arrested for an offence.\textsuperscript{1293} Similarly, drawing upon international best practice, the Commission recommended the retention of the DNA profiles of those convicted of the designated offences.\textsuperscript{1294}

While welcoming the Report the Attorney General indicated that the government would seek to introduce a less restricted database than the one recommended by the Commission.\textsuperscript{1295} The then Minister for Justice, Michael McDowell reiterated his previous position _of permitting as extensive DNA database as possible_

\begin{quote}
I don’t want to criticise it (the LRC report) but my general predisposition is to maximise the use and availability of DNA. I want to maximise the use of DNA in legitimate police activity and the only limits that I see are limits that are put there to prevent abuse of power by the Gardai. I don’t really believe that if there are proper controls that there are major privacy issues involved in my DNA being preserved in a databank, it doesn’t worry me as an issue.\textsuperscript{1296}
\end{quote}

Minister McDowell’s statement is somewhat of an oxymoron: he is seemingly suggesting that the retention of an individual’s DNA on a databank should not be of concern to the

\begin{thebibliography}{99}
\item \textsuperscript{1289} The Law Reform Commission’s recommendation is contained in its \textit{Report on the Establishment of a DNA Database} (LRC 78 – 2005), para. 2.53.
\item \textsuperscript{1290} Law Reform Commission, \textit{Consultation Paper on the Establishment of a DNA Database} (LRC CP 29 – 2004), 32.
\item \textsuperscript{1291} Law Reform Commission, \textit{Report on the Establishment of a DNA Database} (LRC 78-2005), para. 2.67.
\item \textsuperscript{1292} Ibid. para. 2.68.
\item \textsuperscript{1293} The Law Reform Commission’s recommendation is contained in its \textit{Report on the Establishment of a DNA Database} (LRC 78 – 2005), para. 2.54.
\item \textsuperscript{1294} Law Reform Commission, \textit{Report on the Establishment of a DNA Database} (LRC 78-2005), para 2.69.
\item \textsuperscript{1296} Breslin J, “McDowell seeks to _maximise_ use of DNA database” \textit{The Irish Examiner} (16 November 2005).
\end{thebibliography}
individual whose DNA has been retained, however, two lines previously he acknowledges the importance of limiting potential Garda abuses in this area. While the former minister is correct to focus on the importance of having strict controls in place to safeguard the genetic information during collection, retention and potential future use, these required protections should not be used as a means of reducing the DNA debate to a simplistic narrative of the _innocent have nothing to hide_. The retention by the state of the biometric information of an individual, no matter what safeguards are in place, create significant issues for the relationship between the individual and the state. Any alteration (or threat) that may alter the dynamics of this relationship ought to be subject to a full, frank and informed public debate.

Moreover, if the former minister is happy to place his DNA on a databank then by all means that is his right (or perhaps more accurately his privilege) to do so, however, his lack of concern in relation to his DNA being placed on a databank should not be allowed to override the need for the state to satisfy and provide clear justifications for the retention of its citizens genetic information on a state database. Unsurprisingly the minister’s _personal

---

1297 Given the enormity of information contained within a DNA sample, it is suggested that perhaps the former Minister was alluding to a DNA profile as opposed to a DNA sample, thus a database as opposed to a databank. While the ethical issues are heightened for the retention of a DNA sample, it is submitted that the retention of _lesser_ biometric identifiers such as fingerprints should also be considered within this logic.

1299 While the relationship between the individual and the state is beyond the scope of this thesis, it has long been argued that modern western societies are commonly based upon a concept of negative liberalism. The concept is broadly predicated upon minimalistic state intervention, promoting individual freedom and liberty. The concept does not adopt an absolutist standpoint but argues that the state needs to illustrate clear and persuasive justifications to interfere with the individual rights of individual citizens. See Human Genetics Commission, ‘Nothing to Hide, Nothing to Fear’: Balancing individual rights and the public interest in the governance of the national DNA database (November, 2009), 96. As Campbell observes Such databases represent a type of mass surveillance, which rather than being directed at any one individual, gathers information in a broader sense for possible future use and this represents a shift from the classical precept of negative liberty to one which the State becomes more involved in speculatively monitoring _suspect_ populations. See Campbell L, ‘Development of a DNA Database in Ireland – Assessing the Proposed Legislation’ (2010) 7 Irish Law Times 106, 113. See more generally, Berlin I, Two Concepts of Liberty (Clarendon Press 1958); Kant I, Critique of Practical Reason (Cambridge University Press 1997); Mill JS, On Liberty and Other Essays (Gray (ed), Oxford University Press 1991).

1300 For example, under the Hohfeldian analysis of rights, the concept of a right is divided into eight different concepts, namely a _right_, a _privilege_, _power_, _immunity_ and four correlatives, including a _duty_, _no-right_, _liability_ and _disability_. Within these headings the concept of a _right_ is that it places a _duty_ on another. While a privilege is equated with concepts of freedom and liberty, which are different to a _right_ as there is no correlative _duty_ associated with enjoyment of a privilege. See Hohfeld WN, ‘Some Fundamental Legal Conceptions as Applied in Judicial Reasoning’ (1913) 23 Yale Law Journal 16. As Stone observes it reminds us to be careful in the use of the terminology of _rights_, to be sure that we know exactly what type of relationship we are discussing, and if we find that _rights_ appear to be in conflict, to make sure that we are comparing like with like. See Stone R, Textbook on Civil Liberties & Human Rights (8th edn, Oxford University Press 2010), 7. For an excellent introduction to the various rights theories see Waldron J (ed), Theories of Rights (Oxford University Press 1985).

1301 McDowell’s willingness to adopt an _innocent have nothing to hide_ stance is unsurprising when one begins to consider his reign as Minister for Justice, which placed a large emphasis on _rebalancing the Irish criminal
viewpoint’ was heavily criticised by Human Rights advocates, such as the Irish Human Rights Commission.\footnote{For example see Irish Human Rights Commission Annual Report 2005, available at: http://www.hrc.ie/download/pdf/annual_report_2005_en.pdf.} Although it is worth noting that the minister’s ‘innocent have nothing to hide’ rhetoric did garner support in a number of quarters, as the following media report illustrates:

Advances in DNA typing have been fantastic. They have convicted people long after the event … ex-soldier John Crerar, whose dried up double helixes convicted him of the murder of Phyllis Murphy, after some 23 years. So, all the more curious then why the Irish Human Rights Commission should oppose the establishment of a DNA database at our State Forensics Lab in the Phoenix Park, claiming an infringement of human rights. There is no good reason not to have as comprehensive a database as criminal agencies in the UK and US enjoy. The political will is there, the funds are there, the expertise is there and the sooner we start filling the computer up, the better. Why ought not everybody who has been arrested or even questioned, have their DNA held? Indeed, why not all of us? In the world of DNA forensics, there is little room for error -- the exclusion of a suspect is much more likely than conviction, a fact which should reassure us all, the IHRC especially.\footnote{Ryan S, ‘Examining the evidence for an Irish DNA database’ The Independent (10 August 2007). Although for a contrary view in the media see O’Connell D, ‘DNA database would pose threat to our civil liberties’ The Irish Times (27 August 2003). On a similar note the Head of the Forensic Laboratory (Sheila Willis) in 2007, also controversially noted that the storage of DNA profiles posed no threat to human Rights’. Willis cited the limited information contained in a DNA profile (as opposed to the DNA sample, which is drawn from the non-coding region of the DNA molecule (often referred to as ‘junk DNA’). See Frawley M, ‘DNA database from crime suspect poses no threat to human rights’ Sunday Tribune (2 September 2007). The comments by the director of the Forensic Laboratory were subject to commentary in the Dail. Deputy Aengus O’Snodaigh queried the then Minister for Justice, Equality and Law Reform on views _on the comments made by the director of the State Forensic Laboratory which will operate the Government’s proposed DNA database who stated that the DNA database poses no threat to human rights, in particular given the conflicting grave concerns raised by the Human Rights Commission who pointed to far reaching implications for human rights; and if the first step in the protection of human rights must be a full recognition of all the threats posed to same’. The minister responded by stating that _he noted the comments of the Director of the Forensic Laboratory on the proposal and on the Commission’s comments_. In an attempt to deflect the controversial comments he focused on the issue that the director _usefully points to the contribution DNA sampling can make to the investigation of crime_, while concluding that _the objective when framing the proposals was to ensure we provided the Garda with a justice system’, which McDowell perceived had swung too far in favour of the accused, _along the way a consequence of that development and reform of the law may have unintentionally become secondary to the rights and protections for the criminal. Somehow it seems that we may now have arrived at a situation where on occasions the scales of justice are tilted too heavily to one side. Unfortunately when that occurs, that imbalance is likely to favour the criminal rather than the innocent victim all too often”. See Reb alancing Criminal Justice — Remarks by Tanaiste in Limerick” (20 October 2006). Available at: http://www.inis.gov.ie/en/JELR/Pages/Speech_rebalancing_criminal_justice.}
7.4.1. Criminal Justice (Forensic Sampling and Evidence) Bill 2007

In 2007 the government made its first attempt to establish a DNA database, by publishing the General Scheme of the Criminal Justice (Forensic Sampling and Evidence) Bill. The purpose of the Bill was twofold: it proposed repealing the 1990 Act and establishing an updated regime for collecting DNA samples from individuals during a criminal investigation; and in addition it proposed establishing a DNA identification database (which would house the DNA information lawfully gathered under the terms of the Act). The general (almost draft form) of the Bill was drawn heavily from a draft Bill that had been constructed and presented as part of the Law Reform Commission Report on the Establishment of a DNA Database in 2005.

Reaction to the 2007 Bill was underwhelming. For example, IHRC responding to a request by the Minister for Justice, Equality and Law Reform for an assessment of the Bill released a report entitled “Observations on the General Scheme of the Criminal Justice (Forensic Sampling and Evidence) Bill 2007”. The Commission’s report acknowledged the potential utility of both DNA retention and collection; however, it argued that the human rights protections within the Bill were in general “inadequate”. The Commission focused particularly on the lack of precision within the Bill on the safeguards surrounding the comprehensive database that could be relied on as a source of reliable intelligence while also ensuring the safeguards that are included were strong, verifiable and effective. I am satisfied that balance has been achieved. See Dail Debates 1 November 2007, vol 640, col 572.

For details of the Bill see Criminal Justice (Forensic Sampling and Evidence) Bill 2007 – General Scheme, see http://www.inis.gov.ie/en/JELR/Pages/PB07000497. The Bill itself was presented in a general form. It was divided into three parts (Part A, Preliminary; Part B, DNA Database and Part C, Evidential Samples), which were further subdivided into sections referred to as Heads.

See Draft Criminal Justice (DNA Database) Bill 2005 in LRC Report on the Establishment of a DNA Database (LRC 78-2005), 113. The draft Bill developed by the LRC was entitled an Act “to establish a DNA database, to amend the law relating to forensic evidence, to establish a body to be known as the forensic science agency, to provide for the powers and staff of the forensic science agency, to amend the criminal justice (forensic evidence) Act 1990 and to make provision for other related matters”. The Bill was divided into four sections: Part 1 (preliminary and general), Part 2 (taking of samples), Part 3 (DNA database) and Part 4 (forensic science agency).

Available on IHRC website, see http://www.ihrc.ie/publications/list/observations-on-the-general-scheme-of-the-criminal-2/. Last February the Government approved the Heads of the Criminal Justice (Forensic Sampling and Evidence) Bill. The Bill will provide for the establishment of a DNA database. The Heads as approved by the Government were sent to the Irish Human Rights Commission and the Commission was invited to submit its comments on the proposal. I was very pleased to receive these comments in early August. They are being examined by my Department and where possible, I would propose to take as many as possible of the Commission’s recommendations into account while the Bill is being drafted.” See Brian Lenihan, Minister for Justice, Equality and Law Reform, Dail Debates 1 November 2007, vol 640, col 572.

collection, retention and sharing of DNA samples and the general purpose of the database. In particular the IHRC criticised the proposed provisions for the retention of DNA samples, arguing that this was not the norm in other jurisdictions that had established DNA databases and noting that 'the onus must be on the State to prove that retention of any person’s DNA sample is necessary and proportionate'.

A key acknowledgment of the IHRC was the need for a greater emphasis to be put on the issue of public awareness and dialogue:

> The Scheme of the Bill has far reaching implications for human rights. A DNA database stores and retains the most personal information an individual may possess. The guarantee of a person’s right to privacy is fundamentally affected by the retention and storage of their DNA sample on a database. The Commission believes that a widespread inclusive debate is essential to ensure that the general public fully understand the implications of this new technology before a DNA database is established (Emphasis added).

However, before the Bill was enacted or subject to significant discussion, it was interrupted by the European Court of Human Rights decision in *S and Marper v UK*, which found that the DNA retention regime in England, Wales and Northern Ireland was in breach of Article 8 of the European Convention on Human Rights. The indefinite retention of DNA profiles and samples from individuals arrested for recordable offences was held to be 'disproportionate in a democratic society' and such 'blanket and indiscriminate' retention interfered disproportionately with the right to private and family life under Article 8 of the

---

1309 The Commission considers that it is imperative that rigorous safeguards underpin the legal framework governing the taking, retention, or sharing of DNA samples, and the operation of a DNA database. Ensuring the integrity of DNA evidence by proper regulation is essential to avoid potential miscarriages of justice.' Ibid.

1310 'The current proposal to indefinitely retain samples is an unacceptable invasion of the right to privacy. The Commission recommends, in general, the removal and destruction of the DNA samples of people who have not been convicted of a criminal offence as soon as possible after the conclusion of legal proceedings'. Ibid. The Commission was also heavily critical of the provision to allow DNA mass screens arguing that such screening should not be used as an ordinary investigative tool, but should only be used when other less intrusive and expensive methods have proven unhelpful. Any person volunteering their DNA sample should be made fully aware of the implications of doing so, and should be entitled to withdraw their consent without difficulty'.

1311 Emphasis added. See observation of the President of the IHRC, Dr. Maurice Manning, Ibid. At the risk of being overly pedantic, it is worth highlighting the confused terminology contained within the IHRC statement (notably the comment on the retention of a DNA sample on a database), which again potentially highlights the lack of precise understanding of the issues involved in the debate.

In contrast to the English and Welsh approach, the ECtHR promoted the Scottish limited DNA retention policy as a more amenable retention regime.

While Ireland is afforded a ‘margin of appreciation’ in relation to the ECHR, it is important to consider the decisions of the Strasbourg court when enacting controversial legislation. As Campbell states, ‘Ireland is a dualist state, and there is no requirement under the European Convention on Human Rights Act 2003 that all domestic legislation comply with the ECHR. Nevertheless, the possible judicial issue of a declaration of incompatibility under section 5, were database legislation to breach the Convention, would put a political imperative, if not a legal onus, on the State to amend the law.’ Therefore following the *Marper* decision the government’s planned approach under the 2007 Bill would likely have suffered a similar outcome as the UK’s DNA retention policy in the ECtHR. Therefore further debate on the parameters of a DNA database was required following *Marper* to fulfil our European obligations. As Dermot Ahern, the then Minister for Justice, Equality and Law Reform, acknowledged in late 2009:

_The reason there has been a delay in this, particularly during my time, which is what I am directly responsible for, is due to the *Marper v United Kingdom* case, in which judgment was given by the European Court of Human Rights in December 2008. This raised significant issues in regard to the right to privacy, including unjustified interference with the right to privacy, which we have taken into account and which required the Bill [2007] to be reconsidered. There are significant issues in privacy and human rights in regard to the DNA database._

---

1314 Ibid. paras 109–110. In Scotland, the retention of samples is permitted for those arrested for serious violent or sexual offences, but only for a period of three years with the possibility of judicially authorised extensions of two years. Criminal Procedure (Scotland) Act 1995, ss 18 and 19.
1316 *Dail Debates* 10 December 2009, vol 698, col 93–94; explaining the delay became a regular feature of Dail debates; for example see also Dermot Ahern’s comments during the second stage discussion of the Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010. ‘The general scheme of a criminal justice (forensic sampling and evidence) Bill was published in 2007. The proposals drew from the LRC report and were followed by a consultation process during which submissions were received from a number of civil groups. In 2006, a review was commissioned by the Government on the resource needs of the Forensic Science Laboratory and the wider scientific context, culminating in the production of the Kopp Report. However, the general scheme was never published as a Bill and was the subject of numerous redrafting exercises in the years that followed. This delay was directly to the close scrutiny of DNA databases at European level, with close attention paid to the decision of the ECHR and the UK’s compliance and judgement.’ See *Dail Debates* 4 March 2010, vol 704, col 252–253.
Similarly responding to a question from Deputy Jim O’Keeffe, the Minister for Justice responded by again acknowledging the need to revisit the 2007 Bill as a result of the *Marper* decision:

_While the drafting of the Bill is at an advanced stage, its finalisation has been affected somewhat by the very necessary examination of the implications of the recent judgment of the European Court of Human Rights in the case of S and Marper v the United Kingdom. In that case the Court held that the arrangements in the United Kingdom for the indefinite retention of DNA material and fingerprints taken from suspects who were not subsequently convicted were a disproportionate and unjustified interference with their right to privacy. The examination of this judgment may impact on the time table for publication of the Bill._

Ominously (as to date the database has yet to be established) the Minister added that _“in the event of a delay, I will ensure that it is kept to an absolute minimum”_.

The growing delay in implementing a DNA database began to draw increasing criticism from both the opposition party and media, _“A debate on the legal obstacles to a database has been ongoing since the 1990s and has been painfully slow in reaching a conclusion. The new bill was due to have been published earlier this year but was put on hold because of a judgment in the British courts. The *Marper* judgment meant that persons who are not convicted must be treated differently from offenders”_. In 2008 the failure to establish a DNA database was again raised during a heated Dail debate conducted in the aftermath of a well publicised murder, and the Taoiseach was asked _“why has the State not provided for a DNA database, when clearly we are at least a decade behind in the use of such technology, which is helpful_?

---

1317 The position in relation to the establishment of a DNA database and the forensic science laboratory; and the legislation which has been promised in that regard, see *Dail Debates* 25 February 2009, vol 675, col 70.


1320 Brady T, _“Gardai get new powers to collect DNA from bodies” The Independent_ (21 December 2009). In the Dail, Deputy Charles Flanagan commenting on the Minister for Justice’s response that the Bill would be introduced _“very shortly”_, observed that _“The Minister says _very shortly_” but we have all heard that phrase before. I remind him that it is over five years since the Law Reform Commission published its report on the establishment of a DNA database. It is almost four years since January 2006 when the predecessor, Michael McDowell, states that he had received Cabinet backing and approval to proceed to draft legislation. The heads of the Bill were published in 2007 but we have not seen the Bill which I understand is included on the list for this term. What does the Minister mean by _very shortly_”? Will this important Bill be published in the new year?”* See *Dail Debates* 10 December 2009, vol 698, col 93.
in bringing criminals to justice.\footnote{Dail Debates 11 November 2008, vol 666, col 528.} The Taoiseach attempted to diffuse the situation by stating ‘we need to find a balance between allowing Garda Síochána to collect evidence in a way which will withstand legal scrutiny in the courts and, at the same time, get on with policing on a day to day basis so we have community support.’\footnote{Ibid.} More recently the Garda Representative Association (GRA) have strongly criticised the continued delay in establishing the database; Damian McCarthy, the president of the association, noted in August 2011 that ‘We [the Gardai] have been highlighting the need for a database for 10 years now and we still do not have one, despite repeated promises from various governments,‘ and in a strong criticism he added that the GRA ‘deplored the lack of action to bring in a DNA database, which has been acknowledged by various experts and ministers for justice as a great asset in fighting crime.’\footnote{See O’Keeffe J, ‘Gardai renew call for DNA database’ Irish Examiner (22 August 2011). In the statement the Director of the GRA argued that ‘the database will save money by speeding up investigations, by identifying suspects and eliminating suspects, thereby saving garda time and resources’ and that ‘in the modern world, this is becoming an essential tool of policing and we need to keep up to date.’}

\subsection{7.4.2. Inter-jurisdictional DNA profile transfer}

Pressure to establish a DNA database has since moved beyond the criticism of the Gardai and opposition party. Recent technological developments and the continued growth of domestic databases have led to the increased capacity and potential for DNA exchange between international jurisdictions.\footnote{For an excellent introduction to this issue see McCartney C, Williams R and Wilson T, The Future of Forensic Bio-information (Nuffield Foundation 2010); Johnson, P and Williams, R. ‘Internationalizing new technologies of crime control: forensic DNA databasing and data sharing in the European Union’ (2007) 17(2) Policing and Society 103–118.} The increase has been founded primarily on two developments, namely the continued growth of international police cooperation initiatives (including exchange agreements)\footnote{Despite the growing initiatives for cross-border policing, it is important to note that national policing still essentially remains the prerogative of the national executive, subject to judicial oversight.} and importantly (particularly in the context of DNA profiling) efforts to standardise DNA profiling technology to create a designated list of internationally standard loci.\footnote{To maximise the capacity of DNA for the purposes of cross-border criminal investigation and exchange the goal is to achieve a ‘harmonisation’ of the loci utilised during the DNA profiling process. For example, if two countries were using DNA profiling technologies that were irreconcilable (for example, the DNA profiling systems may identify different loci), then exchange and comparison of their DNA profiles would be of little use (without the exchange being accompanied by the sample from which the profile was derived, which would create significant additional concerns). For example, as documented in chapter two the DNA profiling system used in Ireland and Britain, is referred to as the SGM Plus profiling system. It consists of 10 defined areas (called ‘loci’) obtained from the non-coding STR regions of an individual’s genome; once successfully targeted}
result of these developments there is increasing pressure among countries for the sharing of information:

...there are...substantial pressures to create the conditions for the horizontal integration of criminal justice databases, and the sharing of information between national jurisdictions. Whereas the exercise of law enforcement powers of European Union (EU) member states are confined within national borders, for the transfer of information relevant to law enforcement these borders are increasingly dissolving. We identify three developments in the "third pillar" of EU policy (police and judicial co-operation in criminal matters) that have contributed to the cross border linking of forensic bio-information; the establishment of a system of cooperation based on a central information system making use of electronic databases; the creation of a presumption and then an obligation in favour of data sharing; and the commitment of the UK and other member states to align with such a system.

and derived from the sample the resulting information is referred to as an SGM Plus profile. Thus for inter-jurisdictional DNA comparison, it is necessary to develop DNA profiling regimes that are amenable to comparison and exchange. This is an area that has received significant investment in recent years, as Gill et al confirm: "The European Network of Forensic Science Institutes (ENFSI) and the European DNA Profiling Group (EDNAP) has worked collaboratively to achieve standardisation of DNA profiling throughout Europe." Gill P, Fereday L, Morling N and Schneider P, "The evolution of DNA databases – Recommendations for new European STR loci" (2006) 156 Forensic Science International 242–244, 242. Investment and initiatives to harmonise DNA profiling regimes have not been restricted to the EU: for example, Interpol have recommended an International standard set of seven Loci. Interpol Standard Set of Loci - ISSOL: VWA, TH01, D21S11, FGA, D8S1179, D8S1179, D3S1358, D18S51, Amelogenin (determines sex). These loci have been confirmed by a resolution of the Council of Europe in 2001, and now form the core of all national DNA databases in Europe. (See European Council: Resolution of 25 June 2001 on the exchange of DNA analysis results). In 2010, following a recommendation by the European Network of Forensic Science Institute (ENFSI), Interpol expanded their existing seven loci to twelve. The updated Interpol Standard Set of Loci (ISSOL) loci now also includes: D1S1656, D2S441, D10S1248, D12S391 and D22S1045. Interpol Handbook on DNA Data Exchange and Practice: Recommendations from the Interpol DNA Monitoring Expert Group (2009), 84. The push by Interpol to regulate the loci for DNA profiling was to enable cross-border comparison between an increasing number of international countries using DNA profiling during criminal investigation, particularly Canada and the United States, which both operate a Combined DNA Index system, using identical 13 core STR loci. CSF1PO;D13S317; D16S539; D18S51; D21S11; D3S1358; D5S818; D7S820; D8S1179; FGA,TH01; TPOX; VWA. An Amelogenin gender marker is also used. As noted in chapter two the more loci identified, the less chance of locating an adventitious match. Therefore a 13 STR loci system provides a match probability for full profiles from unrelated persons of about 1 in 100 trillion, as opposed to the 1 in a billion match provided by a 10 loci system. See Butler JM, Fundamentals of Forensic DNA Typing (Elsevier 2010), 270.

Human Genetics Commission (UK), Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance and use of the National DNA Database (November 2009), 84. It perhaps may also be suggested that the increasing globalisation of modern society has led to an increasing convergence of western culture including ideas, ideologies and technologies. Thus within this framework it is unsurprising to see the dominant (often western) countries influencing and harmonising the debate and technologies (such as DNA) in tandem with their normative systems. For example, Bauman argues that "Global figuration" is by far the most prominent and seminal feature of our times. (See Bauman Z, "Wars of the Globalisation Era" (2001) 4(1) European Journal of Social Theory 11, 11.) Moreover, Beck defines globalisation as "’the processes through
This dissolving of boundaries is motivated by increasing concerns about the growth of transnational crime, as McCartney et al observe, these sentiments are increasingly reflected in government statements which express anxiety about the increasing seriousness and scale of transnational crime and indicate intent to counter it by improving the machinery of cooperation. While cross-border cooperation and exchange of DNA profiles is still very much in its infancy, it is beginning to gather momentum.

The Prum Treaty is a pertinent example. The original Prum Treaty was signed by Germany, Spain, France, Luxemburg, the Netherlands, Austria and Belgium in May 2005. It was founded on enhancing cross-border cooperation to tackle growing issues such as terrorism, cross-border crime and illegal migration. It established rules for the exchange of information (including DNA and fingerprints) to other contracting member states surrounding which sovereign national states are criss-crossed and undermined by transnational actors with varying prospects of power, orientation, identities and networks. (See Beck U, What is Globalisation? (Polity Press 2000), 11. Similarly, Giddens states that globalisation can thus be defined as the intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa. (See Giddens A, The Consequences of Modernity (Polity Press 1990), 64.) While recently, Held outlined globalisation in the following terms: A process (or set of processes) which embodies a transformation in the spatial organisation of social relations and transactions – assessed in terms of their extensity, intensity, velocity and impact – generating transcontinental or interregional flows and networks of activity, interaction, and the exercise of power. See Held D and McGrew A (eds), Global Transformations: Politics, Economics and Culture (Polity Press 1999), 16. For a fascinating overview of the growing influence of globalisation on crime control see Loader I and Sparks R, Contemporary Landscapes of Crime, Order, and Control: Governance, Risk and Globalization” in The Oxford Handbook of Criminology (4 edn, Oxford University Press 2007), 88. For an interesting account of the need to counteract the growing westernisation of society, linked particularly to the context of globalisation see Twining W, General Jurisprudence” [2007] 15(1) U Miami Int’l & Comp L Rev 1.


1329 For an excellent overview of the current developments involving DNA and cross-border crime see, McCartney C, Wilson TJ and Williams R, Transnational Exchange of Forensic DNA: Viability, Legitimacy and Acceptability” (2011) 17 Eur J Crim Policy Res 305, 305. An example of such an imitative is the creation of the Interpol DNA Gateway in 2002, which facilitated DNA profile exchange between member countries. The DNA Gateway does not hold any nominal data but acts simply as a conduit between countries who follow-up any hits and is available for all 186 member countries. It can only be accessed by the national police organisations (thus states such as the Netherlands and Belgium, in which DNA is a judicial issue, are restricted to DNA sharing initiatives facilitating judicial cooperation). See the DNA section of the Interpol website for further details; available at: http://www.interpol.int/INTERPOL-expertise/Forensics/DNA. Moreover, in 2003 Interpol created the world’s first International DNA database (currently the only global database of its kind). It enables countries to search unsolved crime scene profiles and search against the DNA profiles (which consist of Interpol Standard Set of Loci (ISSOL)) from other countries that have submitted profiles to the database. In July 2006, Interpol’s police communications system I-24/7 went live online.

1330 As Prainsack and Toom observe, “It was commonly seen as a result of an initiative by then German Minister of Interior, Otto Schily in 2003, driven by the convention that the measures of the Schengen Treaty (abolishing border controls and enhancing police cooperation) and the provisions of the former so-called Third EU Pillar (Police and Judicial Cooperation in Criminal Matters) were not sufficient to address growing levels of cross-border crime.” See Prainsack B and Toom V, “The Prum Regime: Situated Dis/Empowerment in Transnational DNA Profile Exchange” (2010) 50 Brit J Criminology 1117–1135.
the automated checking against their relevant databases, \textsuperscript{1331} i.e., it allows DNA profiles (but not personal information) to be shared via direct access to the national DNA databases of the other participating countries through a national contact point on a match/no match basis. \textsuperscript{1332} In June 2007, the EU Council of Ministers of Justice and Home Affairs decided to transpose core parts of the Treaty into EU Law, \textsuperscript{1333} which became known as the Prum Decision. \textsuperscript{1334} The Decision stipulated that by August 2011, all EU member states had to have complied with the Decision. It required all countries to establish the necessary infrastructure to comply with the decision (i.e., by this date states were obliged to allow other law enforcement officials in other member states to search their databases on a match/no match basis). \textsuperscript{1335}

Thus when considering the establishment of a DNA database in Ireland it is important to place this consideration in the context of the current international environment. Thus from an Irish perspective while it is imperative that we debate and engage in the normative, legal and

\textsuperscript{1331} It has been suggested that Prum lacks the sophistication of Interpol’s Gateway, which can facilitate matches across more than two countries and can also link fingerprint and DNA matches. See Schuller, W. ‘Interpol and international DNA exchange’, first meeting of forensic specialists, organisation of American states, Washington D.C. 24–25, 2009 cited in McCartney C, Wilson, TJ and Williams R ‘Transnational Exchange of Forensic DNA: Viability, Legitimacy and Acceptability’ (2011) 17 Eur J Crim Policy Res 305–322. However, this comparison is perhaps misleading as it fails to note the division of ownership that exist in Europe DNA (usually judicial data) and fingerprints (in the majority police data).

\textsuperscript{1332} Article 35 of the treaty outlines the purpose:  ‘the contracting party administering the file may process the data supplied (...) solely where this is necessary for the purposes of comparison, providing automated replies to searches or recording ... the supplied data shall be deleted immediately following data comparison or automated replies to searches unless further processing is necessary for the purposes mentioned above’. Once a hit has been located there will then be an exchange of personal (demographic) details and case information through existing mutual legal assistance procedures. The subsequent steps of the process are governed by national legislation, which enables each country to have discretion on whether or not to exchange demographic data. A matching DNA profile must consist of at least six of the seven European Standard Set of loci (ESS loci). As Butler notes, these core loci are ‘like a single currency in a financial sense’, which permit DNA profiles to be shared and compared across EU states using the ESS loci. See Butler JM ‘Genetics and genomics of core STR loci used in human identity testing’ (2006) 51(2) Journal of Forensic Science 253–265. Mixed profiles are not permitted, and states are not allowed to search a crime scene profile that has already been matched to an individual. Additionally, countries may restrict the profiles that are amenable to being searched (such as profiles from volunteers or victims). Thus the follow-up process is the responsibility of the relevant national contact points, although it has been noted that ‘every hit needs to be examined carefully and it is not possible to clear up open cases by a DNA hit alone’. Press release, 2781st Council meeting, Brussels, 15 February 2007, 5922/07.


\textsuperscript{1335} The decision also pertained to other information such as fingerprints and vehicle data. See Kierkegaard S, ‘The Prum Decision: An Uncontrolled Fishing Expedition in “Big Brother” Europe (2008) 24 Computer Law and Security Report 243–252.
socio-economic issues that are involved when establishing a DNA database, any such meta-enquiries must be considered against the backdrop of the growing international pressure on jurisdictions to share police information and intelligence. Moreover, Ireland is now seemingly obliged and has agreed to establish a DNA retention framework that will enable it to fulfil the requirements of the Prum Decision.\textsuperscript{1337}

There would seem to be a political will in Ireland to engage with the Prum initiative, illustrated by the Minister for Justice, Equality and Law Reforms speech to a Garda Conference in April 2011:

I also see great potential for enhanced international police co-operation in the prevention and investigation of crime. We have to recognise that the ever-increasing openness of our borders cannot be allowed to work to the benefit of terrorists and criminal gangs. Given the growing international nature of serious crime we must take advantage of the opportunities presented by information sharing with our EU and other international partners to support the fight against crime and to maximise the safety and security of all citizens.\textsuperscript{1338}

\textsuperscript{1336} The costs of the introduction of the Prum regime vary depending upon source. For example, Germany claimed that the implementation of the necessary infrastructure to facilitate the Prum regime would cost approximately €1m. However, the UK has estimated costs at approximately £31 m, including £2.5m start-up costs. See House of Lords European Union Committee, \textit{Prum: An Effective Weapon Against Terrorism and Crime?} (HL Paper 90, the Stationary Office 2007), 23–24. Importantly these costs are specifically related to the establishment and operation of the database and do not include the potential follow-up costs involved (such as the subsequent police investigation).


\textsuperscript{1338} See Address by Mr Alan Shatter TD, Minister for Justice and Equality and for Defence to the 2011 Annual Conference of the Association of Garda Sergeants and Inspectors Strand Hotel, Limerick (20 April 2011). Available at: http://www.inis.gov.ie/en/JELR/Pages/SP11000048. See also ministers quote when discussing the agreement to participate in an international police initiative with the United States: ‘International co-operation between states is an essential component in combating the ever-increasing global nature of criminal activity, in particular organised crime. Since the events of 11 September 2001, the world has become aware that no country is safe from the threat of international terrorism.’ Available at Dail Debates 7 February 2012, vol 754, col 3. Available at: http://debates.oireachtas.ie/dail/2012/02/07/00027.asp.
This resonates with the comments made by the minister in his annual address to the Garda Representative Association, in which he promoted the creation of a national DNA database and its accessibility to other EU member states:

Arrangements are also presently being made at European level for European police forces to have access to information held in DNA databases maintained within the EU and the development of our own database would better facilitate the Garda Síochána and your European counterparts rapidly access and exchange crucial information that assists in criminal investigations.\textsuperscript{1339}

However, while there may be the political will in Ireland to engage in inter-jurisdictional DNA exchange,\textsuperscript{1340} the current financial climate would seem to be hampering Ireland’s

\textsuperscript{1339} See address by Alan Shatter, Minister for Justice, Equality and Defence, to the, Annual Conference of the Garda Representative Association (13 April 2011). Available at: http://www.inis.gov.ie/en/JELR/Pages/SP11000042. See O’Riordan S, “Legislation set to enhance fraud bureau’s power” Irish Examiner (14 April 14 2011). National governments often portray the need to sign up to international treaties on data exchange on the basis that it is necessary to combat the growing trend of international crime. For example in the UK the government argued that it was vital that the UK sign up to the Prum Treaty as it would _speed up and improve the quality and quantity of information exchanged about DNA, fingerprints and vehicle registration in order to identify and bring to justice terrorists and criminals. Ministers informed Parliament that the government had negotiated hard to get an outcome that enables [them] to sign up to Prum and get all the benefits in terms of fighting cross border crime and counter terrorism where so much depends on good data exchange and intelligence led policing_. See House of Lords European Union Committee, _Prum: An Effective Weapon Against Terrorism and Crime?_ (HL Paper 90, the Stationary Office 2007) , ev 1-2 and Q8.

\textsuperscript{1340} The political support in Ireland for such initiatives has recently been reaffirmed by Ireland entering into a similar agreement with the United States. For example, on 10 January 2012, the Dáil approved the terms of the agreement between the Government of Ireland and the Government of the United States of America on enhancing cooperation in preventing and combating serious crime which was signed at Dublin on 21 July 2011. The genesis of the agreement was located in the increasing desire of the United States since September 2011 to draft formal arrangements between member states in an attempt to tackle global and cross-border crime (for example similar agreements have also been finalised between the United States and 19 other European Union member states). As the Minister for Justice, Equality and Law Reform noted _the agreement draws inspiration from, and mirrors very much, the EU Council Decision of 2008, the Prüm treaty, on stepping up cross-border co-operation, particularly in combating terrorism and cross-border crime, the aim of which is to improve police co-operation through the exchange of fingerprint and DNA data_. Briefly, the agreement provides that fingerprint and DNA reference data from each country’s national database should be shared in specific defined circumstances, namely, for the prevention, detection and investigation of serious crime. The agreement therefore permits a national contact point, designated by each party, to access and search the fingerprint reference data and DNA reference data of the other party. Should the search procedure show a match between DNA profiles or fingerprint data, the supply of any relevant further data is governed by the national law, including the provisions of the mutual legal assistance treaty between Ireland and the United States. Provision for the mutual legal assistance treaty between Ireland and the USA is already made in our domestic legislation by virtue of the Criminal Justice (Mutual Assistance) Act 2008. The threshold for criminal activity under Irish law for the purposes of this agreement is criminal activity which attracts a prison sentence of 12 months or more. For further details on agreement see Speech by the Minister for Justice, Equality and Defence Mr. Alan Shatter at the Justice, Defence and Equality Committee - Motion for Dáil approval for the Ireland-US Agreement on preventing and combating serious crime (10 January 2012). Available at: http://www.inis.gov.ie/en/JELR/Pages/SP12000021. For criticisms of the Agreement see Deputy Jonathan O’Brien’s remarks during the Dáil debate, _In principle, we are not opposed to the sharing of information or enhanced co-operation in combating serious crime. However, it is important that the rights of the individual be
ability to engage with this process. This is emphasised by Ireland’s failure to meet the original deadline, which stipulated that all member states should be ready to engage in data sharing (which would entail a member state having the necessary infrastructure established and operational) by August 2011. As of May 2011, 11 countries were exchanging DNA information within the system. Thus as Maureen Smyth (Director of DNA and Stakeholder Management at the Forensic Science Laboratory in Ireland) has recently observed, Ireland is currently unable to cooperate and engage in the Prum regime because of respected and upheld. For this reason, proper procedures and safety mechanisms need to be put in place. Greater clarity concerning the agreement is also required. For instance, we need to know what exactly is being shared, with whom, who is responsible for the data once they have been shared, who the contact points are, how the deletion of information takes place, who is responsible for its deletion and how the country that supplies the information can know that the other participant to the agreement has deleted the information. Possible amendments to the agreement have been mentioned. We need to know whether they will be presented to the committee and the House before they are agreed. Article 7 relates to national contact points. In Ireland, the Garda will be the contact point. Who will be the contact point in the US? Will it be the CIA or Homeland Security? We do not know who it will be. Nor do we know what safeguards are being put in place to ensure the information we share is used for no other reason than that which is proposed in the agreement. We have no guarantee and no way of checking that the information we share will be deleted after the proposed timeframe ...

For all of these reasons, we [Sinn Fein] will not support the motion. It goes far beyond sharing information for the purpose of combating serious crime. We cannot support it. See Dail Debates 7 February 2012, vol 754, col 3, available at: http://debates.oireachtas.ie/dail/2012/02/07/00027.asp. See also O’Sullivan C, ‘Ireland could share fingerprint data with US’ Irish Examiner (8 February 2012). Available at: http://www.irishexaminer.com/ireland/kf3dmhauidkfrss2/#ixzz1u1G5JScM. For further discussion on the issue see also Debate by the Select Committee on Justice, Defence and Equality, (31 January 2012), see http://debates.oireachtas.ie/JUS/2012/01/31/printall.asp.

As the Minister for Justice, Equality and Law Reform has recently noted: ‘The DNA database legislation is crucial. I wish I had it up and running by now, but one of our difficulties was that the infrastructure had not been put in place by my predecessor. I do not wish to blame my predecessor for everything because we have been in government for 11 months, but the previous Government envisaged putting the DNA database legislation in place. It was part of its programme. However, when we took office, I discovered that no funding had been made available for the necessary infrastructure. It was to be part of the new forensic science laboratory, for which, equally, there was a lack of funding. We have now identified an alternative way of establishing the DNA database and work in that regard is ongoing. It is very urgent as I am anxious that we have a DNA database as early as possible. The legislation relating to it, on which my predecessor did a substantial amount of work, required further work. However, the advice from the Attorney General’s office was that there were gaps in it. The office has been doing some work on it and I hope we will be in a position to publish the DNA database legislation in the period after Easter and before the summer recess. Owing to the pressures exerted by the drafting of legislation relevant to the EU-IMF-ECB agreement the personnel engaged in the preparation of legislation have had to give priority to that legislation and in the absence of the infrastructure required I had to make decisions about which legislation we should prioritise. However, I hope the DNA legislation will be published before the summer vacation, that it will be enacted before the end of the year and that by sometime next year we will have the infrastructure in place. At that point we will be able to trigger implementation of this provision.’ Available at: Dail Debates, 7 February 2012, vol 754, col 3, available at: http://debates.oireachtas.ie/dail/2012/02/07/00027.asp.

See COM 6077/3/11 (12 May 2011). In essence six loci are similar to a low stringency search and equate to a partial match, which increases the possibility of identifying adventitious matches.

the lack of a national database. Ergo, Ireland is currently on the ‘outside looking in’ at the Prum regime within the EU.

7.5. Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010

Ireland’s most definitive attempt to create a DNA database and alter its current sampling regime was located within the Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010 presented to the Oireachtas in March 2010. Upon presenting the Bill, the then Minister for Justice, Dermot Ahern, stated that the Bill had two main aims: Firstly, to update our laws on the taking of samples from suspects for use in evidence and secondly, to upgrade our criminal intelligence capacity. This latter aim will be achieved through the establishment of a DNA Database System. In short, the minister is correct, the primary purposes of the Bill were threefold: to replace the existing common law and statutory regime for obtaining DNA samples (including suspects and volunteers) during a criminal investigation with a statutory-only regime; to formally establish a DNA retention regime in Ireland (the specifics of which will be detailed within the legislation); and to implement the DNA provisions of the Prum Council Decision.

The 2010 Bill was a complex and elongated piece of legislation. It contained a myriad of provisions including: sampling provisions (including, for example, the who, when, and

---

1344 Smyth noted that DNA databases are now the ‘norm in the developed world as a tool in the investigation of crime’ and argued that Ireland’s failure to establish a DNA database placed it in company ‘with Malta as the only other EU states not to have the necessary legislation in place’. See O’Keeffe C, ‘Gardaí renew call for DNA database’ Irish Examiner (22 August 2011).
1345 Speech by Dermot Ahern, Minister for Justice, Equality and Law Reform introducing the Criminal Justice (Forensic Evidence and DNA Database System) Bill 4 March 2010 Second Stage (Dail).
1346 Council Decision 2008/615/JHA integrates aspects of the Prum Treaty into the law of the European Union. The Prum Treaty refers to an agreement between a number of member states of the European Union signed on 27 May 2005 which is concerned with the stepping up of cross-border cooperation, particularly in combating terrorism, cross-border crime and illegal migration.
1347 The Bill itself was split into 12 parts and 2 schedules: Part 1 (preliminary and general); Part 2 (taking of bodily samples from persons in custody of Garda Síochána); Part 3 (taking of samples from volunteers to generate DNA profiles); Part 4 (taking of samples from other persons or bodies for reference index of DNA database system); Part 5 (taking of elimination samples); Part 6 (taking of samples from persons or bodies for purposes of identification division of DNA database system); Part 7 (sampling of children and protected persons under Part 3 (volunteers) and Part 6 (missing persons)); Part 8 (DNA database); Part 9 (DNA database oversight committee); Part 10 (destruction of samples/removal of profiles); Part 11 (international cooperation); Part 12 (miscellaneous). The first schedule contains the text of the Council Decision 2008/615/JHA of 23 June 2008 on the stepping up of cross-border cooperation, particularly in combating terrorism and cross-border crime for reference purposes. The second schedule relates to s.68 and contains details in relation to the membership, meetings, procedures, funds and facilities of the DNA Database System Oversight Committee. Eolaiocht Fhoireinseach Eireann (Forensic Laboratory) was to bear the costs of the establishment and operation of the database. The database was estimated to cost €3m with an additional €1.5m set-up costs that would generally
authorisation necessary to gather a DNA sample and the methods that may be used to collect the sample); retention provisions (specifying who and what would be subject to retention, for how long, removal criteria and the usage limitations); the relevant safeguards, governance and oversight provisions (surrounding both sampling and retention, with particular emphasis on ensuring that adequate protections are in place to ensure the integrity and security of the retained information); and provisions for the capacity of the database to cooperate with inter-jurisdictional comparison initiatives.

Despite the subsequent lapsing of the Bill the government is still committed to implementing a DNA database (unsurprising perhaps given our current European obligation to do so), thus examination of the 2010 Bill still enables a useful evaluation of the most recent government attempt to implement a revised DNA framework (including the establishment of a DNA database) in the Irish criminal process. In an attempt to avoid confusion and to build upon the issues already addressed in this thesis, the following sections will categorise the various provisions under the following thematic headings; collection, retention (incorporating the use to which the retained information may be used) and governance. Various subheadings discussing relevant issues will be introduced as appropriate. Finally, it is submitted that given the need to revisit this issue a new all-encompassing ‘reflective’ framework should be adopted so as to fill in the ‘gaps’ and allay the concerns that were prevalent about the 2010 Bill.

7.5.1. DNA Collection

The Bill contained provisions concerning collection of DNA samples from individuals for the purposes of a specific criminal investigations (including suspects and volunteers) while also containing provisions for the collection of samples for the purpose of populating the database. In addition, it authorised the collection of DNA samples from a group of volunteers (referred to as a mass screen) within certain defined circumstances.

remain the same annually thereafter. Staffing needs would relate to the demand for the service. The Kopp Report has suggested that an additional 29 laboratory assistants were required to bring the total number to 64; it is anticipated that this number would increase over the first five years. For a useful overview of the Bill see Campbell L, “Development of a DNA Database in Ireland – Assessing the Proposed Legislation” (2010) 7 ILT 106; see also Donoghue S, “The DNA Database Bill 2010 Time for Reassessment?” (2012) 30 ILT 83.

Suspects

The provisions in Part 2 of the Bill proposed to replace those in the 1990 Act for the taking of bodily samples from suspects in Garda custody. Similarly to the 1990 Act, section 9 of the 2010 Bill provided that Gardai may obtain samples from suspects detained for particular offences.\(^{1349}\) Again the general threshold for taking samples is linked to offences with a possible prison term of five years or more.\(^{1350}\)

Broadly speaking the Bill outlines two categories of samples that can be taken once an individual is detained in relation to a designated offence: an ‘intelligence’ sample (section 11) and an evidential sample (sections 12–13). Unlike section 11, section 12 and section 13 samples are taken for evidential purposes, i.e. for the purposes of proving or disproving the involvement of the person in the offence for which he or she is detained. Evidential samples are divided into ‘intimate’ samples\(^{1351}\) (section 12) and ‘non-intimate’ samples (section 13).\(^{1352}\) The taking of an evidential sample is subject to the traditional two step test in relation to the taking of forensic samples, i.e. before giving the necessary authorisation the member in charge must be satisfied that there are reasonable grounds for suspecting the involvement of the person in the offence in respect of which the person concerned is detained and for believing that the sample will tend to confirm or disprove the involvement of the person in the offence.

A Garda not below the rank of inspector must authorise the taking of an intimate sample and the appropriate written consent\(^{1354}\) must be given by the detained person. Before the detained

---

\(^{1349}\) Section 30 of the Offences Against the State Act 1939, s.4 of the Criminal Justice Act 1984, s. 2 of the Criminal Justice (Drug Trafficking) Act 1996, and s.50 of the Criminal Justice Act 2007. Samples may also be taken where a person is detained under any of these powers on the basis of a re-arrest warrant issued under s.30A of the 1939 Act, s.10 of the 1984 Act, s.4 of the 1996 Act and s.51 of the 2007 Act.

\(^{1350}\) Subject to limited exceptions in the case of the Offences Against the State Act 1939 and the Criminal Justice (Drug Trafficking) Act 1996, which contain a small number of offences which do not meet the five year threshold.

\(^{1351}\) An ‘intimate sample’ is defined in Part 1 of the Bill. It refers to: a sample of blood, pubic hair or urine; a swab from a genital region or a body orifice (other than the mouth), or a dental impression.

\(^{1352}\) Section 18 specifies who may take intimate samples (other than urine samples). Registered medical practitioners and nurses are specified and, in the case of dental impressions, registered dentists are also specified. With the exception of blood samples and dental impressions, intimate samples are to be taken as far as practicable by a person who is the same sex as the person from whom the sample is being taken.

\(^{1353}\) A ‘non-intimate sample’ is defined in Part 1 of the Bill. It refers to: a sample of saliva, hair other than pubic hair or a nail or any material found under the nail; a swab from any part of the body including the mouth (ss. 4) provides that references to the mouth are to be interpreted as including references to the inside of the mouth) but not from any other body orifice or a genital region; or a skin impression (such as a footprint).

\(^{1354}\) Section 15 defines the meaning of the ‘appropriate consent’ which is required under section 12 before an intimate sample may be taken. In the case of an adult (i.e. a person aged 18 years or older other than a protected person) his or her consent is required. In the case of a protected person the consent of his or her parent or
person is requested to consent he or she must be informed of various matters including the consequences of not consenting.\textsuperscript{1355} Section 19 concerns the consequences that may follow a refusal to consent to the taking of an intimate sample. Identically to the 1990 Act a refusal to consent without reasonable cause may give rise to an adverse inference being drawn in subsequent criminal proceedings, which may be treated as corroborating evidence, although it may not be the sole or main basis of a conviction.\textsuperscript{1356}

A non-intimate sample taken under section 13 may only be taken if a member of the Garda Síochána not below the rank of inspector has authorised it. Unlike intimate samples under section 12 the consent of the person concerned is not required.\textsuperscript{1357} Section 24 sets out the

guardian or an order from a District Court judge under s.16 is required. In the case of a child aged 14 or older, the consent of the child and either a parent or guardian or an order from a District Court judge under s.17 is required. In the case of a child who is below the age of 14 the consent of his or her parent or guardian or an order from a District Court judge under s.17 is required. A parent or guardian may be excluded from giving consent in certain circumstances: namely where he or she is the victim of the offence, has been arrested in respect of the offence or the member in charge has reasonable grounds for suspecting that the parent or guardian is complicit in the offence concerned or is likely to obstruct the course of justice. The exclusion of one parent or guardian on one of these grounds does not prevent another parent or guardian from being asked to give consent. Before consent is sought from a parent or guardian he or she must be given the information that is required to be given to the detained person under s.12.

Section 14 provides that any information to be given to detained persons who are children or protected persons under the preceding sections is to be given in a manner and language that is appropriate to the level of understanding of the protected person or child concerned and is age appropriate in the case of a child.

The adverse inference may not be drawn if certain steps have not been followed. The steps are that the person was told in ordinary language that a failure to consent could give rise to such an inference being drawn, that he or she was given a reasonable opportunity to consult a solicitor before refusing consent and that the request for consent was video recorded or the person consented in writing to it not being so recorded. This section does not apply to: a protected person, a child who is under 14 years, or a child who is 14 years or older who gave the necessary consent but whose parent or guardian refused consent unless the child refuses to comply with a District Court order under s.17 authorising the taking of the sample. Sections 16 and 17 concern protected persons and children respectively, and provide that in certain circumstances a member of the Garda Síochána not below the rank of inspector may apply to a District Court judge for an order to take an intimate sample from a protected person or child. The circumstances in which such an application may be made are where a parent or guardian: cannot be contacted despite reasonable efforts; has been contacted but indicates that he or she cannot or will not attend at the Garda station within a reasonable period of time; is excluded from giving consent under s.15; refuses to give consent in the case of a protected person or in the case of child where the child's consent is not required (those under 14 years), or where the consent of the child is required (those aged 14 years or older) where the child has consented; or the protected person or child does not have, or it cannot be ascertained within a reasonable period of time that he or she has, a living parent or guardian from whom consent may be sought. The matters to which the judge is to have regard when determining the application are specified. They include the grounds on which the authorisation to take the intimate sample was given under se.12, where applicable the reasons for the parent/guardian's refusal to give the necessary consent, the nature of the offence, the best interests of the person concerned, the interests of the victim and the protection of society. For criticism of the adverse inference provision see IHRC, Observations on the Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010 (March 2010).

Before giving the necessary authorisation the member must be satisfied that there are reasonable grounds for suspecting the involvement of the person in the offence in respect of which the person concerned is detained and for believing that the sample will tend to confirm or disprove the involvement of that person in the offence. Notwithstanding that the person’s consent is not required he or she is to be informed of various matters before the sample is taken including that reasonable force may be used in the event that he or she fails or refuses to allow the sample to be taken.
Reasonable force must be authorised by a member of the Garda Síochána not below the rank of superintendent. The detained person must be informed in advance of the intention to use reasonable force and that the necessary authorisation has been given. The use of reasonable force must be observed by a member not below the rank of inspector who is to determine the number of members necessary.

In contrast to sections 12 and 13, section 11 (an intelligence sample) is only taken for the purpose of generating a DNA profile for entry in the reference index of the DNA database system and is not taken for evidentiary purposes. The primary purpose of section 11 is to populate the database. As the minister observed upon introducing the provisions for the Bill _section 11 provides for the taking of samples solely for the purposes of the Database. Samples taken under this section 11 will be instrumental in populating the Database and ensuring its effectiveness as an intelligence source_.

The taking of such a sample must be authorised by a member not below the rank of sergeant, which is lower than the authorisation required for the taking of a sample under sections 12 and 13. The lower threshold for sampling is perhaps surprising, as a successful _match_ will surely then allow a sample to be taken under sections 12 or 13 (which would then require a higher threshold for authorisation).

It is submitted that if such an approach to authorisation is to be taken (which is not consistent with the independent scrutiny proposed in this thesis) that it should at a minimum remain consistent across the sampling regime (unless of course there is a clear and justifiable reason for divergence). Consent is not needed for the taking of the sample; however, the person is to be informed of various matters before the sample is taken, including (where applicable) that reasonable force may be used in the event that he or she fails or refuses to allow the sample to be taken. Protected persons and children under 14 years of age are excluded from the application of this section.

---

1358 The use of force is not permitted to take s.13 samples from children under 12 years.
1359 Special provisions apply in case of protected persons and children (where s.13 samples are required): a person other than a member of the Garda Síochána must be present when force is being used to take a sample unless the protected person or child indicates that he or she does not wish to have the person present. The person may be the parent/guardian or adult relative or other adult reasonably named by the person who attends at the Garda station or in their absence or exclusion under ss21 or 22 another adult nominated by the member in charge.
1361 Part 1 of the Bill defines a _protected person_ as a person (including a child) who by reason of a mental or physical disability (subsection (2) excludes intoxication whether by alcohol, drugs or other substances from the
It is submitted that section 11 of the Bill is problematic as it is not grounded upon the evidential significance justification underpinning sections 12 and 13 samples. Thus as the IHRC recommendation is persuasive:

In accordance with the jurisprudence of the ECtHR in order for an inference with the right to private life of this kind to be justified, the interference must be in pursuance of a legitimate aim, such as the prevention of disorder and crime, and should be proportionate to the aim pursued. The IRHC considers that the power to take bodily samples solely for the purposes of the entry of a DNA profile on the DNA Database System is too broadly drawn and that it may be applied in a disproportionate and arbitrary manner.\(^{1263}\)

Thus in the absence of clear justifications it is recommended that further provisions in this area should be restricted to circumstances where the samples are directly relevant to a specific investigation.

However, the Bill did contain a promising provision in section 26. It stated that a member of the Garda Síochána shall not take a bodily sample from a detained person other than in accordance with this Bill. It would seem that the purpose of section 26 is to abolish the much criticised "parallel sampling" regime, which allowed Gardai to ask "suspects" in custody to volunteer a DNA sample thereby avoiding the safeguards contained under the statutory regime. It is arguable that this provision is an attempt to reverse the Supreme Court’s decision in \(DPP \textit{v} Boyce\), where the court held that the traditional policing approach of asking suspects for DNA samples without the safeguards contained under the statutory regime is unconstitutional.

\(^{1262}\) As regards the application of this section to children who are 14 years or older the minister is required to review this within seven years of the commencement of the section and may, having regard to the outcome of the review, vary the application of the section to such children.

\(^{1263}\) See IHRC, Observations on the Criminal Justice (Forensic Evidence and DNA Database Systems) Bill 2010, 20. The IHRC specifically cited Maslov \textit{v} Austria (23 June 2008), para. 45.
in custody to volunteer samples ran parallel to their statutory power to obtain samples under section 2 of the 1990 Act.\textsuperscript{1364}

**Volunteers**

Given the highly sensitive nature of the material involved in DNA sampling, the Bill’s attempt to implement a strictly statutory regime for those arrested under designated offences and abolish the current “parallel” sampling regime is highly commendable. However, such an approach does create a major difficulty: namely, there may be criminal investigations where it may be necessary to obtain DNA samples from individuals who may not be deemed a suspect under the provisions of the Bill. For example, it may be necessary for a victim of a sexual assault or an individual who may have potentially contaminated a crime scene to provide a DNA sample so that their DNA profile can be excluded from the DNA profile obtained from the crime scene. Part 3 of the Bill recognised this issue and legislated for such a scenario.

Section 27 provided that a member of the Garda Síochána or an authorised person\textsuperscript{1365} may request a person (i.e. a volunteer) to allow a sample to be taken for the purpose of generating a DNA profile in respect of him or her in relation to the investigation of a particular offence or an incident that may involve the commission of an offence. This section does not apply to suspects in the custody of the Garda Síochána (who are subject to the provisions outlined under sections 11, 12 and 13) or offenders who may be sampled under sections 30 or 31 of the Bill (which will be discussed further below). In the event that the DNA profile of a victim or a person reasonably considered to be a victim is required in relation to the investigation of an offence or incident this section applies, i.e. he or she is to be treated as a volunteer.

Before seeking the consent of a volunteer to the taking of a sample the member in charge or authorised person must inform the volunteer of certain matters, including that he or she is not obliged to provide the sample and consent must be obtained in writing. In general profiles generated from samples taken from volunteers will not be entered into the DNA Database System – they will be retained for use in connection with the particular offence/incident only. Subsections (7) to (9) provide an exception to this general rule. A member not below the rank of sergeant may at the time that a sample is being taken under this section from a volunteer

\textsuperscript{1364} *Director of Public Prosecutions v Boyce* [2008] IESC 62.

\textsuperscript{1365} An ‘authorised person’ refers to a person appointed in writing under s.104 by a member not below the rank of superintendent for the purposes of ss39 and 40 and Parts 3 and 6.
(or afterwards), inform the volunteer\textsuperscript{1366} that he or she may consent to the entry of his or her profile in the reference index of the DNA Database System. This consent is a separate consent to the consent required to the taking of the sample in relation to a particular investigation or incident but must also be in writing.\textsuperscript{1367}

Ironically, one could describe the 2010 Bill as a ‘wolf in sheep’s clothing’ as, while the Bill attempts to strengthen the rights of suspects in relation to bodily sampling by removing the ‘parallel’ sampling regime, it simultaneously seems to be diluting the rights of volunteers. It is accepted that section 27 will be at times necessary; it is, however, worrying that the Bill provides the Gardai with the power to ‘ask’ a volunteer to provide a sample as part of a criminal investigation (heightened by the provision which enables the Gardai to seek a volunteer’s consent for entry of that profile on to the database). Strict monitoring of these provisions will be necessary to ensure compliance; it is foreseeable that Gardai will continue to adopt a ‘diluted’ parallel sampling system. For example, a Garda may ask a ‘suspect’ pre-arrest to volunteer a DNA sample under section 27, to gauge the individual’s reaction, before arresting the individual and invoking the relevant statutory measures. The potential consequences and ramifications of this section need to be clearly outlined and recognised within the relevant legislation. For instance, there should be an explicit prohibition on an individual becoming a formal suspect (in the absence of other relevant factors) because of reluctance or refusal to provide a sample as a ‘volunteer’. As outlined in chapter four, while a controversial proposition, perhaps a judicial order granting the right to take a volunteer’s DNA sample would be preferable to the current situation which seeks to rely on an individual’s consent.

\textit{Mass screens}

Another example of the dissolution of volunteer’s rights under the 2010 Bill is the controversial inclusion of the Garda power to conduct a DNA mass screen.\textsuperscript{1368} Section 28 of the Bill legislated for the undertaking of a DNA mass screen in Ireland under particular

\footnotesize
\textsuperscript{1366} Other than a protected person, a child, or a victim or a person reasonably considered to be a victim.
\textsuperscript{1367} The person must be informed of certain matters before his or her profile may be entered in the reference index including that he or she is not obliged to consent to its entry, the effect of such entry and the rules governing the destruction of the sample and the removal of the profile from the system.
\textsuperscript{1368} There have been successful mass screens in this jurisdiction; in \textit{The People (DPP) v David Lawlor}, a successful mass screen of 80 men in Dublin resulted in the identification and conviction of David Lawlor as the murderer of Marilyn Rynne. See Willis S, ‘—DNA in the Investigation of Crime’ (2003) Communiqué: An Garda Síochána Management Journal 3, 4; Cusack J, ‘—DNA screening of men in hunt for blaze killer’ \textit{Irish Independent} (4 January 2009).
circumstances. Section 28(2) stated that a member of the Garda Síochána not below the rank of Chief Superintendent may authorise the mass screening of a class of persons for the purposes of investigating a relevant offence if the member has reasonable grounds for believing that the mass screening of that class of persons is likely to further the investigation of the offence, and is a reasonable and proportionate measure to be taken in the investigation of the offence.

A sample taken as part of a mass screening may not be used for the purposes of the DNA Database System: it is tested and retained for the purposes of the investigation of the relevant offence in respect of which it was taken. Former Minister for Justice Dermot Ahern stated upon realising the Bill that ‘in no circumstance will the DNA profile of a participant be entered in the Database’.

As documented in chapter four, the use of a DNA mass screen is a highly controversial criminal investigation technique. It essentially enables the state to implement a criminal investigation measure, in the ‘hope’ of locating a match (a ‘hope’ which recent reports suggest is rarely realised). While it may prove successful on occasion, it is submitted that

---

1369 A mass screening may only be conducted in respect of a ‘relevant offence’, which is defined in s.2(1) as an offence in respect of which a person may be detained under any of the Garda detention powers listed in s.9(a) to (d) – generally offences which attract a sentence of five years or more.

1370 Section 28(4) (c) and 28(5). A class of persons for the purposes of a mass screening may be determined by reference to one or more of the following: sex; age; kinship; geographical area; time frame or any other matter the member of the Garda Síochána giving the authorisation for the mass screening concerned considers appropriate. See s.28(3). A mass screening may only be conducted in respect of a relevant offence which is defined in s.2(1) as an offence in respect of which a person may be detained under any of the Garda detention powers listed in section 9(a) to (d) – generally offences which attract a maximum sentence of five years or more. The samples that may be taken under this Part are limited to mouth swabs or head hair. See s.2(3). Individuals sampled during a mass screen are considered as volunteers: therefore written informed consent is required for the taking of the sample and all persons requested shall be informed that they are not under an obligation to provide a sample.

1371 Dermot Ahern, Minister for Justice, Equality and Law Reform Criminal Justice (Forensic Evidence and DNA Database System) Bill 4 March 2010 Second Stage (Dail). In general, profiles generated from samples taken from volunteers (ss 27 and 28) will not be entered in the DNA Database System: they will be retained for use in connection with the particular offence/incident only. However, s.27(7) to (9) provides an exception to this general rule. A member not below the rank of sergeant may at the time that a sample is being taken under this section from a volunteer (or afterwards), inform the volunteer that he or she may consent to the entry of his or her profile in the reference index of the DNA Database System. This consent is a separate consent to the consent required for the taking of the sample in relation to a particular investigation or incident but must also be in writing. The person must be informed of certain matters before his or her profile may be entered in the reference index including that he or she is not obliged to consent to its entry, the effect of such entry and the rules governing the destruction of the sample and the removal of the profile from the system.

1372 However, it would seem that within the right context the implementation of a mass screen may be extremely useful for a criminal investigation. Success of a screen would seem to be founded on utilising a combination of screening and tactics, i.e. tactical mass screening. Tactical mass screening combines traditional police techniques such as interviewing witnesses, following leads and other policing techniques to develop a suspect or target profile. For example, a number of rapes are carried out within a small geographical area; the perpetrator is tall, approximately 6 feet, heavy set and has black hair. In combination with this at a number of the scenes he
The ‘innocent have nothing to hide’ rhetoric that is often postulated by those in favour of this technique is not persuasive. Intrusion by the state must be justified, a justification which is not satisfied by the ‘chance’ that a DNA mass screening may locate a match during such a random screening.

It is submitted that mass screens should be used as a measure of last resort and only when circumstances dictate that a narrow (or tailored) mass screen may be relevant and useful (i.e. where the facts of the case have presented a scenario in which the sampling of a narrow group of individuals may significantly aid the criminal investigation). Evaluation and was seen leaving in a white van. As outlined earlier the one successful mass screen in the US involved preliminary police enquiries which limited the potential suspect list to 25, before a screening of these 25 individuals revealed the perpetrator. See Esmaili S, ‘Searching for a Needle in a Haystack: The Constitutionality of Police DNA Dragnets’ (2007) 82 Chicago-Kent Law Review 495, 501 Therefore, before embarking on a ‘needle in a haystack’ chase or a ‘fishing expedition’ it would seem prudent for the police to construct a target profile utilising the obtained information. Under such circumstances it would seem justifiable to sample all men in the local area who matched this description: therefore in the above example all men approximately 6 feet tall, heavy set, with black hair and driving or having access to a white van could justifiably be sampled. However, even once a viable ‘tactical mass screen’ has been identified, we return to the question of authorisation and consent. Should we allow the police to ask these individuals to ‘volunteer’ a sample or should we require police to obtain a court order requiring these individuals to provide a DNA sample.

As Justice McGuiness has eloquently stated ‘There has been sufficient miscarriages of justice in the history of crime in this and in other jurisdictions to indicate a belief that ‘the innocent have nothing to fear’ is not necessarily the whole answer.’ See Gilligan v Criminal Assets Bureau [1998] 2 IR 185.

The Irish Council for Civil Liberties (ICCL) have questioned the use of mass screens and asked whether traditional forms of investigation could be more useful and impinge less on police resources. Irish Council for Civil Liberties, ICCL Position Paper: Human Rights Compatibility of the Establishment of a DNA Database (October 2003). Available at: www.iccl.ie.

In 2009 Interpol released a report entitled Interpol Handbook on DNA Data Exchange and Practice: Recommendations from the Interpol DNA Monitoring Expert Available at: http://www.interpol.int/Public/Forensic/dna/handbook.asp. The report provided a checklist that should be executed before an Intelligence Led DNA Screen should be authorised. However, the report emphasises that the checklist is only a guide and that each case utilising a DNA mass screen is unique and should be treated accordingly. Importantly it states a mass screen should be ‘in accordance with the law and a proportionate and non-discriminatory means of achieving a legitimate aim’. The report outlined a list of important questions that should be examined before initiating a screen, inter alia: Is there a full or partial DNA profile?; Is a mass screen the best way to begin the enquiry or will a targeted number of suspects garnered through other investigative means be an initial alternative?; Have you or will you announce the planned screen to the media?; Have you anticipated the public reaction to the screen?; Have you considered the staff and monetary resources required to conduct the screen?; Have you considered the logistics? Have you considered geographical location, size of screen and any information available that may limit the potential suspect pool? Interpol, ibid. In commenting on the proportionality of a mass screen the Law Reform Commission in its 2004 Consultation paper suggests that mass screens should only be used ‘sparingly and after due consideration’. Law Reform Commission, Consultation Paper on the Establishment of a DNA database (LRC CP 29 – 2004), 155. Available at: www.lawreform.ie. The LRC outlines a number of considerations that should be taken into account to try and achieve this proportionality; they suggest that permission for a mass screen should only be given if it is practical to detect the perpetrator of the crime and the same objective could not, in practice, be achieved by less intrusive and costly means. Care should also be taken to ensure that in sanctioning the mass screen in relation to the range of people who may be requested to provide a DNA sample, such a range should be as narrowly defined as possible. Narrowing the range of the potential sample pool is a primary element of ‘tactical mass screens’. The importance of a ‘tactical mass screen’ is that it prevents police from embarking on ‘fishing expeditions’ and therefore helps to justify the legitimacy and minimise the invasiveness of such a procedure. Despite outlining the concerns the LRC recommended (and the 2010 Bill agreed) that the Garda Síochana are in a better position.
authorisation for the implementation of the technique should be vested in judicial (or independent) authority, as opposed to the police.\textsuperscript{1376} Such an approach would provide a welcome buffer before the implementation of this highly invasive technique. Moreover, similarly to section 27 the consequences and potential ramifications of providing a sample during a mass screen (including the destruction of the DNA sample provided and its relevant DNA profile and the issue of refusing to provide a sample during a screen) should be explicitly outlined in the legislation.\textsuperscript{1377}

Given the human rights and due process concerns involved in a DNA mass screening it is submitted that the wording of section 28 within the Bill, particularly the phrase, ‘likely to further the investigation’, is of particular concern and would potentially enable the overuse and abuse of this procedure. Because the decision to engage in such a procedure rests with the Gardaí, in today’s current climate the Gardaí may pander to current public or political

\textsuperscript{1376} The main concern in leaving this procedure in the hands of the police is the difficulty in retaining a semblance of objectivity and perspective in the DNA debate, particularly when investigating signal crimes. Innes describes ‘signal’ crimes as those high profile cases that can have an effect on a population as a whole. See Innes M, \textit{Understanding Social Control} (Open University Press 2003), 74. Therefore, despite research indicating that tactical mass screens are the most efficient way forward. It is likely if this procedure remains in the hands of the police that we are only ever a ‘signal crime’ away from calls to cast a wide DNA ‘net’ over a local community in the ‘hope’ of identifying a violent offender.

\textsuperscript{1377} Both the Irish Council for Civil Liberties (ICCL) and the Irish Human Rights Commission (IHRC) have criticised Part 3 of the Bill on the grounds that it is lacking in necessary safeguards surrounding the consent of volunteers. IHRC have recommended in their report on the Bill that s.27 (in relation to volunteers) and s.28 (mass screening) should be amended to explicitly state that failure to consent to the provision of a sample by a volunteer or a volunteer in a mass screening should not constitute a reasonable ground for suspecting a person’s involvement in an offence so as to justify the compulsory taking of a sample. Irish Human Rights Commission, Observations on the Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010 (March 2010), 7. IHRC have also recommend that s.28 (and s.27) should be amended to stipulate that ‘volunteers’ and persons involved in a mass screening should have the opportunity to consider their consent to the provision of a sample and whether they would like to communicate with a legal practitioner before providing a sample. Where this is not possible or feasible full information in writing should be provided to them. This echoes the LRC Commission findings in their 2004 Consultation Paper on the Establishment of a DNA Database; suggesting that this would guarantee that the interference with the individual’s privilege against self-incrimination is minimal. The Law Reform Commission, \textit{Report on the Establishment of a DNA Database} (LRC 78 – 2005). Available at: www.lawreform.ie. However, while calls for safeguards because police should not be allowed to justify ‘reasonable suspicion’ for arrest on the refusal to consent to a forensic procedure is a worthwhile endeavour, in reality, the concern is that such ‘safeguards’ while arguably necessary will only provide an ‘illusionary’ protection. Common sense dictates that if an individual in a local community refuses to consent to a DNA mass screen he or she will become a ‘suspect’ to both the police and the local community. It is suggested that the decision to engage in a mass screen should be dependent on securing judicial authorisation for both the application of the screen and the power to sample the identified individuals; this would ensure the necessity and legitimacy of a mass screen before being conducted, while also removing the stigma of choice from the volunteers identified for screening. New South Wales Legislative Standing Committee on Law and Justice, Review of the Crimes (Forensic Procedures) Act 2000 (Report No 18 2000), paras 5.86–5.95.

While such an approach will potentially infringe ones privilege against self-incrimination, it is important to assess the abrogation of any right in terms of proportionality and context.
pressure and engage in ‘fishing expeditions’ or intelligence gathering in certain sections of society under the guise that it is ‘likely to further the investigation’ of a criminal offence.

It is submitted that while a DNA mass screen is potentially a useful policing procedure, the provisions contained in the 2010 Bill are problematic. Thus the failure to implement the 2010 Bill has presented a useful opportunity for the state to revisit this issue.

**Convicted Offenders**

To aid in populating the database, Part 4 of the Bill introduced provisions to allow sampling of all those convicted of designated offences while also controversially making provision for retrospective sampling. In the case of current adult offenders section 30 stated that sampling should occur as soon as is practicable and where an offender is in prison the sample will be taken by a prison officer following authorisation by the prison governor.

In the case of former offenders, the relevant provisions and criteria are contained within section 32 and 33. For example, section 33 outlined that a member not below the rank of superintendent may authorise the sampling of a former offender if he or she believes that such sampling may be in the interests of the protection of society and desirable for the purpose of assisting in the investigation of criminal offences. Where such an authorisation has been given a member may request the former offender concerned to attend a designated Garda station for the purpose of having the sample taken. The IHRC has recommended...
that section 32 should be amended to include only those convicted of particular offences and
that the decision to authorise such a sampling should be vested in judicial oversight, with a
judge assessing the necessity and proportionality of authorising the relevant sampling.

The sampling of former offenders presents an interesting question for the criminal process.
While word restraints prevent a detailed examination of this issue, it is submitted that it will
perhaps present an interesting constitutional dilemma. As the LRC Consultation Paper
observes, It is an important principle of the criminal law that no one should be subjected to
penalty that was not available at the time they were convicted.\textsuperscript{1383} Prohibition of
retrospective punishment is provided for by Article 7 of the ECHR: Article 7(1) states that
\[\text{nor shall a heavier penalty be imposed than the one that was applicable at the time the}
criminal offence was committed}, while it is also tangentially recognised by Article 15.5 of
the Constitution.\textsuperscript{1384} On this issue Kelly observes that prohibition of the implementation of
retrospective punishments is arguable located within Article 38.1 and an individual's right to
be tried in due course of the law.\textsuperscript{1385} A position that was subsequently affirmed by Enright v
Ireland, which held there was a prohibition on a law that increased the penalty attached to an
offence after the commission of the offence.\textsuperscript{1386}

Thus it will be important for the legislature and the courts to assess whether the taking of a
DNA sample and its potential entry and retention on a database constitutes a punishment, as
if it does it will present a difficulty for the retrospective sampling of prisoners under Article 7
of the ECHR and Article 38.1 of the Constitution.\textsuperscript{1387} There are increasing calls that suggest
an obligation to submit a DNA sample is an additional penalty to that of a conviction.\textsuperscript{1388}

\textsuperscript{1383} LRC, \textit{Consultation Paper on the Establishment of a DNA Database} (LRC CP 29 – 2004), para. 5.69.
\textsuperscript{1384} Article 15.5 prohibits the passing of retrospective laws (i.e. penalising past behaviour that was previously
deemed lawful under the provisions. It is not directly applicable here, although it is submitted that a similar
sentiment applies.
The Court, applying the proportionality test, held that the imposition of the registration requirements on the
persons already convicted of sexual offences was rationally connected to the objective of the legislation
(protection of society), registration was a minimal burden, and it impaired the plaintiff's rights to fair procedures
as little as possible and was proportionate to the objectives to be achieved.
\textsuperscript{1387} In a submission to the NSW Review, Justice Action argued that "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". See New South Wales Legislative
To alleviate this conflict it has been suggested that the taking of a sample is a preventive or deterrence measure and that it is not punitive, and thus does not fall within the scope of a ‘penalty’ under Article 7.\textsuperscript{1389} For example in \textit{Ibbotson v United Kingdom} the EComHR held that the requirements of the Sex Offenders Act 1997 were preventive as opposed to punitive, thus they were not a penalty.\textsuperscript{1390} Examining this issue the LRC has found that retrospective sampling is on balance not a punitive measure:

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. 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.\textsuperscript{1391}

In 2006 the constitutionality of the retention of DNA from convicted offenders was subject to review in the Canadian Supreme Court in \textit{R v Rodgers}.\textsuperscript{1392} During the decision the issue of retrospective sampling was also raised; dismissing the issue the court upheld the retrospective collection of DNA samples and the subsequent entry of these profiles on the Canadian database. The Court held that DNA sampling is no more part of the arsenal of sanctions to which an accused may be liable in respect of a particular offence than the taking of a

\textsuperscript{1390} LRC, \textit{Consultation Paper on the Establishment of a DNA Database} (LRC CP 29 – 2004), para. 5.70. In general the substance and severity of the measure must be examined in order to determine whether a measure is a penalty. See for example, Simor J and Emmerson B, \textit{Human Rights Practice} (Sweet & Maxwell, 2003), para. 7.010.
\textsuperscript{1392} LRC, \textit{Consultation Paper on the Establishment of a DNA Database} (LRC CP 29 – 2004), para. 5.71. In \textit{Jamil v France} (1995) 21 EHRR 65 and \textit{Welch v United Kingdom} (1995) 20 EHRR 247, the Courts held that a sentence of imprisonment could be imposed on the failure to submit to an order, which persuaded the ECtHR in holding that the measure was a penalty.
\textsuperscript{1392} \textit{R v Rodgers} [2006] 1 SCR 554, 2006 SCC 15.
photograph or fingerprints. The fact that the order may have a deterrent effect on the offender does not make it a punishment.\textsuperscript{1393}

While it would seem that the retrospective sampling of an individual is currently not perceived as an additional penalty, it is submitted that given the unknown impact that the sampling and subsequent entry and retention of a DNA profile may have on an individual that perhaps it is an issue that necessitates further consideration by both the courts and the legislature.

\textit{Elimination Sampling}

Part 5 of the Bill provides for: the taking of samples from persons who, in the execution of their duties such as Garda Síochána,\textsuperscript{1394} staff at Eolaiocht Fhoireinseach Eireann (the Forensic Laboratory Ireland),\textsuperscript{1395} the State’s Pathologist’s Office,\textsuperscript{1396} are considered to be at risk of inadvertently contaminating crime scene samples with their own DNA, and the entry of the subsequent DNA profiles in one of the three elimination indexes of the DNA Database System.

\textsuperscript{1393}Ibid.

\textsuperscript{1394} Sections 39 and 40 concern the Garda Síochána. Section 39 provides for the taking of samples from members/trainee members and trainee reserves for the purposes of the elimination (Garda Síochána) index. Section 40 provides for the taking of samples from members/trainee members and civilian staff members who are assigned to duties relating to the investigation or technical examination of crime scenes or anything found at or recovered from a crime scene for the purpose of the elimination (crime scene investigators) index. Both sections distinguish between existing personnel on commencement and those appointed after commencement. The consent of existing personnel is required whereas personnel appointed after commencement shall be required to provide a sample. Before a sample is taken under either of these sections the person is to be informed of certain matters. The samples may be taken by a member or an authorised person (appointed under s. 104).

\textsuperscript{1395} Section 41 concerns the staff of EFÉ. It provides for the taking of samples from the staff members for the purpose of the elimination (crime scene investigators) index. The section distinguishes between existing staff members on commencement and those appointed after commencement. The consent of existing staff members is required whereas staff members appointed after commencement shall be required to provide a sample. Before a sample is taken the person is to be informed of certain matters. The samples may be taken by a staff member of EFÉ who is authorised in writing by the Director of EFÉ. The section also provides, subject to the consent of the staff member concerned, that a DNA profile generated from a sample taken before commencement for the purpose of ascertaining whether the staff member contaminated a crime scene sample may be entered in the elimination (crime scene investigators) index, i.e. it shall not be necessary to take a further sample and generate a new profile for the purpose of the section.

\textsuperscript{1396} Sections 43 provides that, where the Garda Commissioner is of the opinion that a member/trainee member or reserve member appointed before commencement (i.e. who is not required to provide a sample for the applicable elimination index but who may consent to do so) or a civilian staff member (who is not required to provide a sample for the elimination (crime scene investigators) index) has or may have contaminated a crime scene sample, the Commissioner may direct the person to provide a sample in relation to the particular investigation concerned for the purpose of ascertaining whether the person has contaminated the sample. The profile derived from such a sample will not be entered in the DNA Database System. Before a sample is taken under this section the person is to be informed of certain matters. The samples may be taken by a member or an authorised person (appointed under section 104).
The inclusion of an elimination sampling regime may be seen as a further example of the widened scope of individuals drawn within the Bill's sampling net. However, it is submitted that given the susceptibility of DNA to contamination (which may mislead an investigation or result in a miscarriage of justice), the inclusion of an elimination regime is justified when operated in a manner than aims to protect those targeted by the process. Thus it is important that the elimination regime is constructed as narrowly as possible and restricted to those who have a real potential of contaminating a DNA sample. The prudence of an elimination regime is illustrated by the growing number of international jurisdictions incorporating such a practice within their DNA sampling and retention regimes. Moreover, it is submitted that if the government hopes to garner public trust and support for their DNA sampling and retention legislation, a reluctance or refusal by police or laboratory technicians to provide samples under the auspice of an elimination regime may undermine public confidence and support for the DNA database regime as a whole.

7.5.2. DNA retention

Following the Marper decision (and the earlier Van der Velden decision) the legality and legitimacy of a DNA database has been upheld when constructed appropriately as amenable under ECHR. To briefly recap, the ECtHR made a number of observations that would enhance the potential of a DNA retention regime as being amenable under the Convention. The following limitations would aid in achieving an element of proportionality in pursuit of the legitimate aim of preventing and investigating crime: limiting the retention period, further limiting the retention period for those categorised as children under the law; correlating the retention period to the seriousness of the offence for which the individual was arrested; and providing an independent process for an individual to appeal against his or her retention, during which the reviewer would consider the seriousness of the offence [of which the person was suspected], previous arrests, the strength of the suspicion against the person and any other special circumstances.

For example, the ENFSI Working Group have recommended that any DNA database should have an associated elimination DNA-database (or databases) including anybody working on the DNA samples in the DNA-lab but also people cleaning the labs or performing any other kind of maintenance. Also people earlier in the chain of custody like the police and other persons present at the scene of crime should be included as well as unidentified DNA profiles found in negative control samples which may come from people involved in manufacturing disposables and/or chemicals. The latter type of DNA profiles should be shared with other ENFSI countries. See ENFSI Working Group Report 2008, recommendation 18. Available at: http://www.enfsi.eu

S & Marper v UK 48 EHRR 50, para. 119.
Moreover, instructive assistance on the retention of material collected during a criminal investigation can be found in a range of international instruments. For example, the European Code of Police Ethics outlines that the collection, storage and use of personal data by the police shall be conducted in a manner that is compliant with international data protection standards, and importantly, be narrowly confined to lawful, legitimate and specific purposes. As Walsh notes, when considered within these parameters, international principles leave very little room for fingerprints, samples and DNA profiles to be retained beyond the conclusion of the case or investigation for which they were taken.\(^\text{1399}\)

Similarly, as was outlined in Marper, the Council for Europe Recommendation regulating the use of personal data in the police sector, states that procedures should be adopted by the state to ensure personal data kept for police purposes is deleted when it is no longer of use for the purpose for which it was originally obtained (predominately on conclusion of a case).\(^\text{1400}\) Moreover, it is expressly stated that all results from the DNA analysis must be destroyed once they are no longer necessary; a point that is emphasised in the Explanatory Memorandum, which states that data should be deleted once the person has been cleared of suspicion.\(^\text{1401}\)

A reading of the Council of Europe instruments would suggest that DNA material (and other biometric identifiers such as fingerprints) should not be retained once an individual has been acquitted or is no longer being actively considered during the police investigation for which the information was obtained; although they do provide for limited exceptions, such as the security of the state, during which any information obtained may be retained within strictly defined time limits. In all other situations, material and data can be retained only where the person has been convicted of a serious offence against the life, integrity or security of another person. As Walsh observes the narrow range of offences should be noted. There is no provision for property, drugs, firearms, public order and other such offences.\(^\text{1402}\) In addition for the offences for which information can be stored, retention should be regulated by strict

\(^\text{1400}\) Recommendation No R(87)15 Regulating the Use of Personal Data in the Police Sector (Council of Europe, adopted 17 September 1987), rec. 7(1).
\(^\text{1401}\) Recommendation No R(92)1 on the Analysis of DNA within the Framework of the Criminal Justice System, Explanatory Memorandum, paras 49–50.
conditions and storage periods. These conditions and periods of storage should be subject to parliamentary or independent body oversight.

Thus the type of database a country plans to implement may contravene Article 8 of the ECHR depending on the retention criteria. The fundamental questions to be addressed during the discourse surrounding a DNA database are: who should be subject to retention (for example, convicts, suspects or volunteers)? What should be retained (DNA profile and/or corresponding DNA sample)? For what duration should the retained material be stored? What should be the removal criteria and to what use may the retained material be put? Are the appropriate safeguards, governance and oversight procedures established and maintained to ensure the integrity of the retained material and the database system as a whole? Part 10 of the 2010 Bill addresses these fundamental issues.

Indexes

The database proposed by the 2010 Bill consisted of two primary indexes (referred to as 'divisions' in the Bill): the investigation division and the identification division. The investigation division was to contain the following indexes of DNA profiles: the crime scene index, (containing DNA profiles generated from samples of biological material found at, or

---

1403 Ibid.
1404 Ibid.

1405 Part 10 comprises five Chapters having regard to the different circumstances in which samples may be taken under the Bill. Chapter 1 concerns the arrangements to apply to certain samples taken under Parts 2 and 4 (persons in Garda custody and offenders); Chapter 2 applies to samples taken under Part 3 (volunteers); Chapter 3 to samples taken under Part 5 (elimination purposes); Chapter 4 to Part 6 (identification purposes); and Chapter 5 deals with miscellaneous matters. For useful background on the rationale for the government approach see the Regulatory Impact Assessment (RIA that accompanied the 2010 Bill. See RIA: Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010. Available at: http://www.justice.ie. A Regulatory Impact Analysis is a tool used for the structured exploration of different options to address particular policy issues. It is used where one or more of these options is a new regulation or a regulatory change and facilitates the active consideration of alternatives to regulation or lighter forms of regulation. See http://www.taoiseach.gov.ie/eng/RIA While the RIA accompanying the 2010 Bill provides some background for the government’s decisions within the Bill, the document available online is in a summary format, resulting in the justifications, being primarily presented in an arbitrary cost/benefit approach, revealing few useful insights. In general however, it is noticeable that the document is heavily in favour of the establishment of a DNA database (as it repeatedly cites the 'benefits' of a DNA database and present's under considered international figures for comparison). While it does recognise the human rights issues created by the database (and the amendments to the DNA collection regime), these concerns seem to come across as issues to be manipulated so as to maximise the utility of the database. Finally, the RIA makes no comment about the potential due process issues created by the revised framework.

1406 Under the terms of the Bill the identification division of the DNA Database System was designated to contain DNA profiles of missing and unknown persons. It would be referred to as a missing and unknown persons index of DNA profiles and information that may be used (a) to identify or describe the person from whose biological material each DNA profile was generated, and (b) in the case of the DNA profile of a blood relative of a missing person that is entered in that index, to associate that DNA profile with the missing person.
recovered from, crime scenes. Crime scene samples predating the commencement of the Bill are included; the reference (comparator) index (containing DNA profiles generated from samples taken from designated suspects in Garda custody, volunteers (subject to consent) and certain offenders and former offenders) and the elimination indexes (the Bill outlined three elimination indexes: the Garda Síochána index, crime scene investigators index and the prescribed persons index. The identification division was to contain one index of DNA profiles – the missing and unknown person’s index.

DNA profile

Suspects

The Bill proposed that those detained in conjunction with the Bill would have their DNA profile retained upon the database for a period of ten years (five years in the case of a child or a protected person); although the relevant profile should be removed when a conviction is quashed or in the case of a miscarriage of justice. Those subject to retention may apply to have their profile removed. Specifically, section 72 defines who may apply to the Garda Commissioner for the destruction of his or her sample and removal of a profile from the DNA Database System.

---

1407 Section 58. Crime scene is defined for the purposes of the Bill.
1408 Section 59.
1409 Section 60 provides that the elimination (Garda Síochána) index shall contain DNA profiles generated from samples taken under s.39 (from certain Garda personnel).
1410 Section 60 provides that the elimination (crime scene investigators) index shall contain DNA profiles generated from samples taken under ss40 (from certain Garda personnel), 41 (staff members of EFÉ) and 42 (certain prescribed persons).
1411 Section 62 provides that the elimination (prescribed persons) index shall contain DNA profiles generated from samples taken under s.42 (from certain prescribed persons).
1412 Section 63 provides that the missing and unknown person’s index shall contain profiles generated from samples taken under s.46 (missing persons), s.47 (seriously ill or severely injured persons) and s.48 (unknown deceased persons).
1413 Section 78, subject to certain qualifications, applies default removal periods of ten years for adults and five years for children and protected persons in the case of DNA profiles entered on the System. The circumstances in which this section applies include where the person was not proceeded against within the relevant default removal period, or if proceeded against was acquitted or the proceedings were dismissed or discontinued or were not subject to an order under s.1 of the Probation of Offenders Act 1907. For a definition of a ‘child’ and ‘protected person’ in relation to the Bill see Part 1.
1414 Subject to certain qualifications an applicant is a person who: was not proceeded against, or if proceeded against was acquitted or the proceedings were dismissed or discontinued; who is subject to an order under s.1 of the Probation of Offenders Act 1907; or whose conviction was quashed or declared to be a miscarriage of justice. The Commissioner may grant the application in full or in part. The Commissioner must determine the application within 12 weeks and provide written reasons. In determining the application the Commissioner must be satisfied that the person is an applicant and have regard, in particular, to a range of specified matters. Where the Commissioner does not grant the application in full or does not make a determination within the 12 weeks the applicant may appeal to the District Court. The appeal is to be on notice and shall be heard in private. In the case of a person who was not proceeded against, a period of 12 months must elapse between the taking of
The 2010 Bill is contrary to that recommended in the Law Reform Commission report. The report recommended that DNA profiles of suspects be temporarily retained on the DNA database; however, it stipulated that this retention should be void when 12 months have elapsed since the sample was taken and [relevant] proceedings … have not been instituted against the suspect or proceedings have been instituted and the person is acquitted or discharged or the proceedings are discontinued.\textsuperscript{1415} Perhaps more important is that arguably the 10 year retention period does not align with the proportionate retention recommendations in \\textit{Marper}, which favoured the 3 year (flexible) Scottish approach. It is submitted that the 10 year retention period, despite being linked to predominantly more serious offences would potentially fall foul of the ECHR.

Moreover, in the content of this thesis, the adoption of a 10 year retention period was formulated with no rational explanation. It illustrates the problems in this area, notably a lack of clear justifications and independent research. Given the recurring concept of function creep and expansion within the DNA debate, the adoption of a 10 year retention period would have set an unfortunate and under justified precedent for Ireland's DNA retention policy.\textsuperscript{1416}

\textbf{Volunteers}

The Bill enabled a volunteer's DNA profile to be placed on the database but only when the volunteer consented to such an entry. This consent had to be separate (and an additional consent) to the consent for providing a DNA sample during the course of a criminal investigation (which is to be utilised in relation to that specific offence). Once a volunteer’s sample has been loaded on to the database, section 82 concerns the destruction/removal arrangements of this information. A volunteer (or in the case of a child or protected person, the sample concerned and the application. Furthermore the failure to institute proceedings must not be owing to the fact that the person absconded or could not be located. Section 73 provides that in exceptional circumstances a person against whom proceedings have not been brought does not have to wait for the usual period of 12 months to elapse before making an application under section 74 to the Commissioner. Subsection (2) is illustrative of what constitutes exceptional circumstances. Section 80 specifies the circumstances in which a person who would otherwise come within the meaning of "applicant" in s. 72 is excluded and in which the default removal periods in ss.78 and 79 do not apply. The circumstances are: the fact that the person was not proceeded against for an offence other than the offence in connection with which the sample was taken was owing to the fact that he or she absconded or could not be located; proceedings for another offence have been instituted against the person and he or she has not been acquitted or the proceedings have not been dismissed or discontinued; or the person has been convicted of another offence and that conviction has not been quashed or declared to be a miscarriage of justice.


\textsuperscript{1416} For further criticism of this approach see IHRC, "Observations on the Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010, 14. "The IHRC considers that the default retention periods proposed in respect of bodily samples and DNA profiles are too long".
the individual who provided consent) may request the destruction of his or her sample and
any profile by notice in writing to the Commissioner, who may under particular
circumstances request the retention of the volunteer’s genetic information.\textsuperscript{1417}

The 2010 Bill is broadly in agreement with that recommended by the Law Reform
Commission in relation to the retention of a volunteer’s DNA profile on the database. The
LRC Report recommended that _any individual, even a person unconnected with a particular
investigation should be permitted to have his or her profile retained on the DNA database_,
although the Commission did stress that _volunteers should be permitted to withdraw consent
to the retention of profiles on the database_.\textsuperscript{1418}

**Convicted Offenders**

Those convicted of relevant offences (as specified within the 2010 Bill) would have their
DNA profiles retained indefinitely on the database.\textsuperscript{1419} As the Minister of Justice noted when
announcing the Bill to the House _In the case of DNA profiles it is only those relating to
convicted persons that will be retained indefinitely_.\textsuperscript{1420} While this accords with the LRC
report and international trends in this area,\textsuperscript{1421} it is submitted that indefinite retention (even
for those convicted of an offence) is problematic and necessitates further scrutiny. Recent

\textsuperscript{1417} Pursuant to the request the sample/profile is to be destroyed within two months subject to s.88. Section 88
provides that the Commissioner may apply to a District Court judge to retain a sample beyond the default
destruction periods or a profile beyond the default removal periods (in ss76, 77, 78 or 79) where there is good
reason to do so. A member not below the rank of superintendent may make an application to a District Court
judge to retain a sample/profile taken from a volunteer under ss27 or 28 where there is good reason relating to
the investigation of the particular offence in respect of which it was taken. If a sample/profile has not been
destroyed previously it is to be destroyed within two months of the completion of the investigation or any
proceedings in connection with the offence in respect of which it was taken. Where a volunteer consented to the
entry of his or her profile in the DNA Database System a request for destruction is to be construed as including a
request for removal. In such a case the Commissioner may request the volunteer to agree to his or her profile
being removed from the system but retained in connection with the particular investigation in respect of which it
was taken. The written consent of the volunteer is required to such a request.

2005), paras 2.90 and 2.92. For further detail on this issue see IHRC, _Observations on the Criminal Justice
(Forensic Evidence and DNA Database System) Bill 2010_, 15.

\textsuperscript{1419} Such an individual would be allowed to seek removal of their DNA profile (and sample) if their conviction
was quashed or declared to be a miscarriage of justice. It is arguable that such an occurrence should demand
automatic removal as opposed to the individual having to apply for its destruction.

\textsuperscript{1420} See Dermot Ahern, Minister for Justice, Equality and Law Reform, Criminal Justice (Forensic Evidence and
DNA Database System) Bill 4 March 2010 Second Stage (Dail).

2005), para. 2.69.
jurisprudence would seem to suggest that 'proportionality' in this instance should relate to the sentence imposed on the accused.1422

Section 79 makes an exception to the indefinite retention arrangements surrounding those convicted of a relevant offence. The exception applies in the case of child offenders.1423 A default removal period of 10 years applies subject to certain qualifications such as the child offender not being convicted of an offence within the default period. The differentiation for children accords with the view of the ECtHR in *Marper* during which the court observed that the retention of children’s samples on the database can be particularly stigmatising.1424 Although it is arguable that the 10 year retention period may perhaps have been excessive.1425

Controversially the Bill contains a retrospective application, to include those currently in prison for a designated offence and also offenders who have previously been convicted of a designated offence.1426 Such an approach is deemed necessary to populate the database and create an effective intelligence tool for the Gardai. Under section 75 former offenders who have their DNA profiles placed on the database, may apply to the Commissioner for the destruction of those samples/removal of those profiles in the event the relevant conviction has been quashed or declared to be a miscarriage of justice.

**Elimination Index**

The elimination index contains profiles of individuals who may be at risk of potentially contaminating a crime scene.1427 Sections 83, 84 and 85 outline the removal and destruction

1422 See for example, *W v the Netherlands* Application no.20689/08, 20 January 2009. The ECtHR stated that retention of DNA for convicted persons was acceptable where it was retained ‘for a prescribed period of time dependent on length of the statutory maximum sentence that can be imposed for the type of offence committed’. For further commentary on this issue see McCartney C, Williams R and Wilson T, *The Future of Forensic Bio-information* (Nuffield Foundation 2010), 111.

1423 Other than those convicted of offences triable by the Central Criminal Court or prescribed by the Minister having regard to their nature and seriousness.


1425 As the ICCL have observed “The ICCL questions the compliance of this provision with the ECtHR judgment in *S and Marper* given that the system most favoured by the ECtHR was the Scottish framework. In Scotland, DNA samples are only retained in respect of unconvicted persons where there was suspected involvement in violent or sexual crimes’, cited by Deputy Pat Rabbitte in a speech to the Dail (4 March 2010), Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010: Second Stage.

1426 See ss30, 32 and 33 of the 2010 Bill.

1427 Section 83 sets out the destruction and removal arrangements for samples taken from Garda personnel under ss39 or 40 and related profiles. In general the samples are to be destroyed before the expiry of three years from their taking. In the case of persons required to provide a sample the related profile will generally be required to be removed from the DNA Database System once 10 years has elapsed since the person has ceased to be a member of the Garda Síochána or a trainee member – where a trainee becomes a full member he or she will be subject to the arrangements that apply to such members. In the case of a person whose consent was required to
arrangements for Garda personal, EFE staff and other prescribed persons. In general their profiles will be removed from the DNA Database System once 10 years has elapsed since the person has ceased to be a member of one of the above organisations. As observed earlier, the operation of an elimination index is becoming international best practice in the area of DNA databasing. It can be beneficial in detecting potential contamination and maintaining/encouraging public trust in the databasing process. However, it is essential that the use of an elimination index is narrowly defined and its operation is subject to external oversight.

**Missing Persons**

Part 6 of the Bill provides for the taking of samples in relation to missing persons, from seriously ill or severely injured persons who are unable by reason of the illness or injury to identify themselves, and from unknown deceased persons for the purpose of the entry of the DNA profiles generated from such samples on to the missing and unknown person index of the DNA Database System. It is imperative that the profiles derived under the missing person’s index are prohibited from being used for the purposes of a criminal investigation.
DNA Sample

Section 76 outlines a three year retention period for all DNA samples taken under the Bill. The three year retention period would seem to be influenced by the growing recognition (such as in the ECtHR in *Marper*, the UK Human Genetics Commission and the Irish Human Rights Commission) that the retention of a DNA sample is a highly controversial issue given that it contains an individual's complete genetic information (i.e., their genome). Similarly, the Council of Europe Recommendation on the analysis of DNA within the framework of the criminal justice system states that DNA samples obtained for analysis (and information derived from the samples such as DNA profiles) for the purposes of the investigation and prosecution of criminal offences is prohibited from being used for any additional purposes. Samples should not be retained after a final decision had been made on the case, unless it is directly linked to a purpose for which it was collected.

However while it is accepted that a DNA sample contains highly sensitive information, it is submitted that given the current embryonic nature of DNA technology that perhaps the retention of the DNA sample (consistent to its relevant DNA profile) would be a preferable option, once the necessary security and oversight procedures are in place to ensure the integrity and security of the sample.

Saver provision

Section 88 effectively created (or retained from the 1990 Act) a ‘saver’ provision; it provided the Garda Commissioner with the power to apply to a District Court judge to retain a sample beyond the default destruction periods or a profile beyond the default removal periods where there is ‘good reason’ to do so. Similarly under this provision, a member not below the rank of superintendent may make an application to a District Court judge to retain a sample for the purposes of: an investigation into the disappearance of a missing person or in to how the unknown living person became ill or was injured or the unknown deceased person died or an inquest.

---

Section 76, subject to certain qualifications, applies a default destruction period of three years to samples taken under ss 11, 30, 31, or 33: i.e. samples taken under Parts 2 and 4 for the purposes of the DNA Database System. Section 77, subject to certain qualifications, applies a default destruction period of three years to samples taken under ss 12 and 13 (intimate and non-intimate samples for evidential purposes).

Recommendation No R(92)1 on the Analysis of DNA within the Framework of the Criminal Justice System (Council of Europe, adopted 10 February 1992), rec.3.

Ibid. Samples and other body tissues, or information derived from them, may be stored for longer periods where the person so requests, or where the sample cannot be attributed to an individual (e.g. a sample taken at a crime scene).

Section 94 provides that the references in this Part to the Commissioner, for the purposes of the application of this Part, shall be construed as references to the Ombudsman Commission.
sample/profile taken from a volunteer under sections 27 or 28 where there is ‘good reason’
relating to the investigation of the particular offence in respect of which it was taken.

**Summary of Default Retention Periods**:\(^{1433}\)

<table>
<thead>
<tr>
<th></th>
<th>Samples</th>
<th>Profiles</th>
<th>Appeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offenders</td>
<td>3</td>
<td>Indefinite</td>
<td>Y</td>
</tr>
<tr>
<td>Former Offenders</td>
<td>3</td>
<td>Indefinite</td>
<td>Y</td>
</tr>
<tr>
<td>Child Offenders</td>
<td>3</td>
<td>5</td>
<td>Y</td>
</tr>
<tr>
<td>Suspects</td>
<td>3</td>
<td>10</td>
<td>Y</td>
</tr>
<tr>
<td>Volunteers</td>
<td>Indefinite</td>
<td>Indefinite</td>
<td>Y</td>
</tr>
<tr>
<td>Elimination Index</td>
<td>3</td>
<td>10</td>
<td>Y</td>
</tr>
<tr>
<td>Identification Index</td>
<td>Indefinite</td>
<td>Indefinite</td>
<td>Y</td>
</tr>
</tbody>
</table>

7.5.3. Governance

As illustrated in chapter six the adequate governance of the DNA regime will be essential to
its success or failure. The Bill attempted to satisfy these requirements by focusing on
ensuring the integrity of the process by adopting a number of security and oversight
mechanisms.

*Custodianship of Database*

Part 8 of the Bill outlined the provisions for the establishment of a DNA Database System.\(^{1434}\)
Section 56 states that the DNA Database System shall be established and maintained by the
Eolaíocht Fhoireinseach Eireann (EFE) (the Forensic Science Laboratory of the Department
of Justice, Equality and Law Reform) renaming the current Forensic Science Ireland. Section
64 in Chapter 4 states that the EFÉ shall establish and operate the DNA Database System in

---

\(^{1433}\) Section 93 specifies the circumstances in which a person is to be notified (in writing) of the destruction of a sample or the removal of a profile from the System.

\(^{1434}\) It is divided into 4 chapters: Chapter 1 outlines the structure and purposes of the System, Chapter 2 concerns the investigation division of the System, Chapter 3 the identification division and Chapter 4 the functions of EFÉ in relation to the System.
accordance with the Bill. Access and searches of the system may only be conducted by a staff member of EFÉ. Subsection (3) contains an important provision as it allows the Director of EFÉ to make arrangements with other laboratories (inside or outside the state) to perform one of its functions in relation to the DNA Database System—the generation of DNA profiles from samples taken under the Bill.

The custodianship arrangement does not accord with that proposed by the Law Reform Commission, namely the creation of a new independent body referred to as the Forensic Science Agency. The custodianship arrangement proposed by the 2010 Bill creates a potential conflict of interest (as the Forensic Laboratory in Ireland will also be the primary supplier of DNA profiles to the database). This arrangement heightens the need to ensure that there is an adequate oversight and external review arrangement established.

Oversight

Encouragingly the 2010 Bill (section 68) establishes a DNA Database System Oversight Committee. The function and purpose of this committee, which is to be independent in the performance of its functions, is to oversee the management and operation of the DNA Database System for the purposes of maintaining the integrity and security of the System.

---

1435 Subsection (2) outlines the functions that EFÉ will be tasked with under the Bill: (a) the generation of DNA profiles from the samples taken, and furnished to it, under this Act; (b) if appropriate, the entry of the DNA profiles generated by it in the appropriate division and index of the DNA Database System; (c) the searching of the DNA Database System in accordance with s.65 to ascertain whether there is a match between two DNA profiles in the System; (d) the reporting to the Garda Síochána, the Ombudsman Commission or a coroner, as may be appropriate of the results of searches of the DNA Database System; (e) the destruction of samples taken under this Act in accordance with Part 10; (f) the removal of DNA profiles from the DNA Database System in accordance with Part 10 or for the purpose of the administration of the system; (g) the conduct of automated searching and automated comparison of certain DNA profiles in the DNA Database System in accordance with Articles 3 and 4 of the Council Decision and the facilitation of such searching and such comparison of certain DNA profiles in that System in accordance with ss 96 and 97; (h) if appropriate, the making available of DNA profiles in the DNA Database System for transmission in accordance with a request under Chapter 3 of Part 5 of the Criminal Justice (Mutual Assistance) Act 2008; (i) the maintenance of the security of the DNA profiles and information in the DNA Database System in accordance with this Act will be required to perform in relation to the System.

1436 Section 64(3) empowers the Director of EFÉ to make such arrangements, including contractual arrangements, as he or she considers appropriate with such other laboratories (whether inside or outside the state) for the performance of the function of EFÉ under the Act or the performance of that function in any particular case or class of cases.


1438 Section 69. To discharge this function it is required to satisfy itself that the provisions of the Act in relation to the System are being complied with. The Committee may make recommendations to the Minister and the Director of EFÉ in relation to the management and operation of the System. The Committee may, and shall at the request of the Minister, review any matter relating to the management and operation of the System and submit a report in writing to the Minister. Any such report shall be laid before the Houses of the Oireachtas by the Minister as soon as practicable and shall be published. In order to avoid prejudicing the security of the
Section 70 places an obligation on the Director of EFÉ and its staff, Garda Síochána and the Ombudsman Commission to cooperate with the Committee and to furnish the Committee with such information as it requests. The members of the Committee are specified in Schedule 2 of the Bill. It provides that the Committee shall consist of six members (a chairperson and five ordinary members. The Director of EFÉ shall be an ex officio member of the Committee. The chairperson and ordinary members (other than the Director of EFÉ) of the Committee shall be appointed by the Minister for Justice. The chairperson of the Committee shall be a judge of the High Court or the Circuit Court or a former judge of the High Court or the Circuit Court. One ordinary member of the Committee shall be a member of the staff of the Data Protection Commissioner who is nominated for appointment to the Committee by the Data Protection Commissioner. The Minister shall, in so far as practicable, ensure that there is an equal balance of men and women amongst the persons who are appointed to be ordinary members of the Committee.

Accountability

Accountability provisions are contained within section 67. It requires the Director of EFÉ to submit an annual report to the Minister regarding the performance of its functions under the Act. Copies of the report are to be laid before the Houses of the Oireachtas.

Purpose of the database

The Council of Europe Recommendation on the analysis of DNA within the framework of the criminal justice system states that DNA samples obtained for analysis (and information derived from the samples such as DNA profiles) for the purposes of the investigation and prosecution of criminal offences are prohibited from being used for any additional System, the security of the state or the investigation of criminal offences or to avoid infringing the rights of any person the Minister may omit any matter from the report to be laid before the Houses or to be published. Section 71 requires the Committee to submit an annual report to the Minister regarding the performance of its functions under the Bill. The provisions of s.69 permitting certain information to be omitted from a report under that section before it is laid before the Houses or published apply to an annual report under this section. The proposed unrestricted access of the oversight committee has received praise. For example, see McCartney C, Williams R and Wilson T, The Future of Forensic Bio-information (Nuffield Foundation 2010), 79. The IHRC has called for the Minister to explicitly state in the legislation that one member of the Board should be an expert in human rights. See IHRC, Observation on the Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010 (March 2010), 16. In addition, similarly to the UK it is perhaps arguable given the content of information contained within the genome that there should be an additional ethics committee created to work in conjunction with the oversight committee. Section 66 clarifies that EFÉ may process the information in the System for statistical and analytical purposes once the data does not contain any identifiers.
Thus it is essential to adequately define the purpose of the database. Section 57, outlined that the DNA Database System shall only be used for the purposes (a.) the investigation of criminal offences; (b) the finding or identification of missing persons, the identification of seriously ill, or severely injured, persons who are unable by reason of the illness or injury to indicate their identity or the identification of the bodies of unknown persons. The concern surrounds the term ‘investigation of criminal offences’, given the wide ranging nature of the term, it leaves the DNA profiles that will be legitimately stored on the database susceptible to further analysis if it is deemed to fall within the ambit of a criminal investigation.

To prevent this ambiguity it is suggested that the regulatory regime should strictly outline the collection, retention and potential uses and situations for which the retained material can be accessed and subjected to further analysis during a criminal investigation. The guidelines should be explicitly outlined in the legislation or in an accompanying code of best practice. The 2010 Bill does attempt to do this by outlining in section 57(2) a list of purposes for which the database may be used such as searching between the various indexes, facilitating an alleged miscarriages of justice application under section 2 of the Criminal Procedure Act 1993, for the compilation of statistics, for necessary maintenance and operation of the system and for international comparison; however, any attempted restriction is undermined by the final provision which states that the database may be used for ‘any other related purpose’. The ambiguity of the term ‘any other related purpose’ is of significant concern and leaves the profiles stored on the database open to future ethical implications.

Given the ethical concerns surrounding the establishment of a DNA Database System and the use of DNA profiling in a criminal investigation, it is vital that the purpose for which a database and the associated technology may be used is clearly identified from the beginning. A clear rationale will aid in protecting against potential ‘function creep’ in the future, which is particularly important as the Bill is silent on issues such as familial searching (and other ‘back end’ databasing techniques).

Recommendation No R(92)1 on the Analysis of DNA within the Framework of the Criminal Justice System (Council of Europe, adopted 10 February 1992), rec.3.
Part 11 of the 2010 Bill implements the DNA aspects of the recent Prum Council Decision. Section 95 provides that EFÉ shall be the national contact point for the purposes of the automated searches and comparisons that may be conducted under Articles 3 and 4 of the Prum Council Decision (implemented by sections 96 and 97 of the Bill). Effectively it requires the Director of EFÉ to allow automated searching of the reference index and the crime scene index of the DNA Database System by other member states of the European Union against an unidentified DNA profile (a crime scene profile) or the unidentified DNA profiles held in the system of another member state, while also allowing the Director to conduct automated searches of the DNA database systems of other member states using a profile contained in the reference index or the crime scene index of the Irish System. The creation of cross-border sharing regimes is not without risk. It is imperative that any such regimes are underpinned by clear agreements and data protection regimes.

---

1443 Section 98 amends s.2 of the Criminal Justice (Mutual Assistance) Act 2008 in order to include the Prum Council Decision in the definition of „international instrument“ and to modify the definition of „member state“ for the purposes of that Council Decision. Section 99 amends s.76 of the Criminal Justice (Mutual Assistance) Act 2008 by the insertion of a definition of „DNA profile“ and „DNA sample“ and by the addition of „DNA profile“ and „DNA sample“ to the definition of „identification evidence“ in the section. Section 100 amends s. 78 of the Criminal Justice (Mutual Assistance) Act 2008 for the purpose of implementing Article 7 of the Prum Council Decision. Section 101 amends s.79 of the Criminal Justice (Mutual Assistance) Act 2008 for the purpose of implementing Article 7 of the Prum Council Decision. It also provides that references in s.79 of the 2008 Act to identification evidence in the possession of the Garda Síochána include such evidence where it is in the possession of EFÉ. Section 102 amends s.109 of the Criminal Justice (Mutual Assistance) Act 2008. It also makes some amendments to the identification evidence provisions contained in Chapter 3 of Part 5 of the Criminal Justice (Mutual Assistance) Act 2008 having regard to the repeal of the Criminal Justice (Forensic Evidence) Act 1990.

1444 Section 96 implements Article 3 of the Prum Council Decision. It requires the Director of EFÉ to allow automated searching of the reference index and the crime scene index of the DNA Database System by other member states of the European Union against an unidentified DNA profile (a crime scene profile) in accordance with Article 3. It also provides that the Director may conduct automated searches of the DNA database systems of other member states using a profile contained in the reference index or the crime scene index of the Irish System in accordance with Article 3.

1445 Section 97 implements Article 4 of the Prum Council Decision. It requires the Director to allow automated comparison of the reference index and the crime scene index of the System against the unidentified DNA profiles held in the system of another member state in accordance with Article 4 and permits the Director to do the converse on the part of the state.

1446 The Bill builds upon other recent statutory provisions increasing the cooperation of Ireland with EU and international police agencies. See for example, the Criminal Justice (Mutual Assistance) Act 2008. The 2008 Act was drafted in order to incorporate into Irish law a number of EU conventions, agreements and protocols in the area of mutual assistance between member states which had been enacted subsequent to the Criminal Justice Act 1994 (which itself had given effect to the Council of Europe’s Convention on Mutual Assistance in Criminal Matters 1959). For an excellent account of the concerns inherent in inter-jurisdictional police cooperation; see Walsh D, —Blice Cooperation across the Irish Border: Familiarity Breeding Contempt for Transparency and Accountability‖ (2011) 38(2) Journal of Law and Society 301–330.
In recognition of the range of issues created by the collection, retention and use of DNA within the criminal process, the Bill attempted to create a range of safeguards, buffers and _overarching principles_ to minimise the intrusions upon those targeted by the process. As the ICCL observed upon release of the Bill _many human rights benchmarks have been incorporated_.

For example, the Bill specifically acknowledged the bodily integrity and privacy issues involved in the forceful taking of bodily samples under the Bill. As observed earlier, reasonable force was afforded to Gardai to acquire a non-intimate sample when consent was not forthcoming. Under such circumstances a Garda is required to inform the individual of his intention to use reasonable force and that authorisation to do so has been granted by a superintendent. In addition, a welcome provision involved the video recording of the taking of a non-intimate sample when consent was not forthcoming; a provision that may prove a useful protection to both the individuals in custody and the Gardai taking the samples (for the purposes of countering allegations of _excessive force_ during the sampling process). The IHRC has recommended that the concept of video recording should be afforded to the taking of all samples.

Moreover, section 109 stated that bodily samples must be taken in circumstances affording reasonable privacy to the person and shall not be taken in the presence or view of a person whose presence is not necessary for the purposes of the taking of the sample or required or permitted by the Bill. Moreover, in line with Article 3 of the ECHR the section states that

---


1448 Cited by Deputy Pat Rabbitte in speech to Dail, Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010: Second Stage (4 March 2010).

1449 The LRC have recommended that _the explanation for taking samples should be given in a readily understandable manner, using ordinary language_. See LRC Report, _Law Reform Commission, Report on the Establishment of a DNA Database_ (LRC 78 – 2005), para. 2.29. For further discussion on this issue see LRC Consultation Paper, _Law Reform Commission, Consultation Paper on the Establishment of a DNA Database_ (LRC CP 29 – 2004), paras 4.38–4.39.

1450 Section 24(8) of 2010 Bill.

1451 The use of force by the police on members of the public is a controversial issue. As the IHRC notes such force should only be used when strictly necessary and only when necessary in the performance of their duties. The issue of monitoring such force is heightened when individuals are subject to police detention. See IHRC, _Observations on the Criminal Justice (Forensic Evidence and DNA System) Bill 2010 (March 2010)_, 19. For further guidance on this issue see UN Code of Conduct for Law Enforcement Officials, UN Basic Principles on the Use of Force and Firearms; and CPT Standards para. 53.

nothing in the Bill authorises the taking of a sample from a person in a ‘cruel, inhuman or degrading manner’. In addition, where a sample is to be taken from a person in Garda custody questioning of the person in relation to the offence in connection with which he or she is in custody must cease while the sample is being taken.

While the Bill does attempt to minimise the intrusions involved in the sampling process it is submitted that to ensure adequate protection for those targeted by the process it is important not to consider such protections and safeguards in terms of finality. The sampling process should be underpinned by necessity, dignity and integrity. For example, if an individual is compelled to provide a sample, it has been suggested that they should be granted a choice in how such a sample may be taken (as an individual’s DNA sample will contain the same genetic information no matter which form of sample is obtained). Thus perhaps there may be scope to allow an individual to choose the type of DNA sample that may be required (circumstances may dictate that a particular body part may need to be sampled but in the absence of such a requirement the region of the body that is sampled to procure a DNA sample will make no difference). However, it is recognised that such an approach may not be economically efficient and may introduce an overly complicated array of options into the sampling process. This issue was subject to discussion by the LRC Consultation and Report, which eventually recommended that ‘an individual should be subject to a standard sampling procedure such as mouth swabbing. If possible an alternative option should be made available to the individual where there is real and genuine opposition to the procedure in question’.

Section 110 provided that the minister shall make regulations relating to the taking of samples. It is imperative as the Law Reform Commission notes ‘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’. Section 111 provides that the Garda Commissioner, Ombudsman Commission, the Director of the Irish Prison Service and the National Director of the Irish Youth Justice Service shall, following consultation with the

---

1453 For a discussion on this issue see LRC Report, The Establishment of a DNA Database (LRC 78 -2005), 25–26. In the Consultation Paper, the Commission had recommended that so long as a particular forensic test may be conducted on a sample, a certain degree of latitude should be provided to individuals to choose the sample to be obtained. See LRC Consultation Paper, Law Reform Commission, Consultation Paper on the Establishment of a DNA Database (LRC CP 29 – 2004), paras 4.41–4.42. However, during the consultation process, it was suggested to the LRC that a single sampling test (such as a buccal swab) would be more efficient from a technical perspective. An array of tests would complicate the matter for the Forensic Laboratory, while also proving resource intensive.

1454 Including arrangements for additional and enhanced measures to be established for the taking of samples from children or protected persons, see Part 4 of the Bill.

1455 See LRC Report, The Establishment of a DNA Database (LRC 78 -2005), para. 2.32.
Director of EFÉ, prepare draft codes of practice providing practical guidance as to the procedures regarding the taking of samples by their respective personnel, for approval by the minister. The recognition of the need to develop codes of best practice for obtaining DNA samples is a welcome provision. However, it is submitted that the drafting of these codes of best practice should incorporate as wide a range of stakeholders as possible, including international expertise. Section 112 provided that the Director of EFE, the Garda Commissioner and the Ombudsman Commission shall establish written protocols on arrangements concerning the transmission of samples to EFE, the reporting by EFE of the results of searches and other operational issues.

Additionally a theme in other jurisdictions is the acknowledgment that it is vital that the police and crime scene technicians (who are tasked with collecting DNA samples both from individuals and from crime scenes) are subject to extensive training and regular internal and external review. For example, as the UK HGC noted in its recent report: “all police officers, as part of initial training, should be extensively trained and educated on policies concerning the NDNAD and should relay the information to those it affects’ and “that there should be an independent agency to regulate and monitor the procedures of collecting DNA [and] specially trained police officers should take the sample”.  

Moreover, ensuring adherence to these codes of best practice is of vital importance. Thus to ensure their application it is necessary to ensure that the stakeholders implementing these codes of best practice are subject to regular external review and oversight. While failure to adhere to and implement the codes of best practice necessitates the creation of adequate deterrents to ensure (and encourage) the actors involved to comply with the relevant standards (such as a refusal by the courts to admit evidence taken outside the constructed models of best practice and/or effective penalties for those who recklessly or deliberately neglect the established protocols).

**Penalties**

Section 113 provides that persons who have access to information relating to samples taken under the Bill or to information contained in the DNA Database System shall not disclose such information except for the purposes specified in the section or any other purpose that is prescribed. The section provides that a person who intentionally or recklessly discloses

---

1456 Human Genetics Commission (UK), *Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance and use of the National DNA Database* (November 2009), 94.
information in contravention of the section shall be guilty of an offence. The offence may be tried either summarily or on indictment. The maximum penalty on summary conviction is 12 months and/or €5,000.\textsuperscript{1457}

Given the sensitive information contained in the collection and retention of DNA, the security of that information is of central importance to maintain public trust and confidence in the database. Thus the custodian of the database should establish rigid security measures for the protection of the DNA profile repository in tandem with the secure storage of the related DNA samples, and it is imperative that these procedures are subject to regular review and external oversight.

\textit{Admissibility of evidence}

\textbf{Illegally gathered}

Section 118 of the 2010 Bill provides that a failure by a member of the Garda Síochána to observe any provision of the Bill or any regulations or codes of practice made under the Bill shall not of itself render the member liable to civil or criminal proceedings or affect the admissibility in evidence of the results of forensic tests on a sample taken under the Bill. Such a failure shall render the member liable to disciplinary proceedings. The failure not to exclude evidence that does not concur with the terms of the 2010 Bill is an interesting issue, and perhaps will not place enough of a deterrent upon the Gardai to concur with procedures stipulated within the Act.\textsuperscript{1458}

A vital question, when considering a DNA framework, is whether evidence adduced outside the legislative rules should be admissible in court.\textsuperscript{1459} Recent jurisprudence has begun to examine the issue of evidence adduced prior to arrest, which often produces the causative link to ground ‘reasonable suspicion’ allowing a formal arrest to be made.\textsuperscript{1460} The Irish

\textsuperscript{1457} The maximum penalty on conviction on indictment is 5 years and/or €50,000. Section 114 creates a number of offences relating to the obstruction or attempted obstruction of a person who is permitted to take a sample under Part 2 or Part 4.

\textsuperscript{1458} As Ashworth notes ‘It has become a commonplace that early decisions in the criminal process seem strongly associated with and determinative of later decisions’. See Ashworth A, —\textit{Criminal Justice and the Criminal Process}— (1988) 28(2) British Journal of Criminology 111, 113.

\textsuperscript{1459} See Heffernan L, —\textit{The Recording of Fingerprints: Legal Aspects}— (2006) 13(1) DULJ 201.

\textsuperscript{1460} The concept of an exclusionary rule is a controversial and widely debated topic, thus detailed discussion is beyond the scope of this thesis. There are two seminal cases in this regard, the \textit{People (AG) v O'Brien} [1965] I.R. 142 and the \textit{People (DPP) v Kenny} [1990] IR 110. See also \textit{People v Walsh} [1980] IR 294; \textit{People (DPP) v Casey}, 14 December 2004 (CCA); \textit{People (DPP) v Cleary} [2005] 2 IR 189. For an excellent recent overview of the rule as it applies in Ireland see Daly YM, —Judicial oversight of policing: Unconstitutionally Obtained Evidence in Ireland: Protectionism, Deterrence and the Winds of Change— (2004) 14 ICLJ 2. See also Daly YM, —Judicial oversight of policing:
Supreme Court had an opportunity recently to examine such an issue, in the *DPP (Walsh) v Cash*.1461 The case centred on the validity of fingerprint evidence implicating the accused that was adduced from a ‘questionable’ fingerprint match. Ultimately the Supreme Court dismissed the defendant’s appeal and deemed the evidence admissible. As Fennelly J held the exclusionary rule was only relevant to the exclusion of evidence presented at trial and it is not applicable to ‘the lawful provenance of evidence used to ground a suspicion’.1462 Expanding he stated that the defendant was attempting to extend the boundaries of the exclusionary rule which would ‘blur the distinction between the arrest and the trial’.1463

Therefore as Daly notes ‘the court viewed the central issue then as the lawfulness of the accused’s arrest, rather than any –fruit of the poisoned tree’ argument centred on a causative link between the potentially unconstitutional retention of the first set of fingerprints and the...
taking of the second set of fingerprints. Quoting from the High Court, Fennelly J, noted that on the issue of the lawful requirements for lawful arrest, it had never been held that what would found a reasonable suspicion in law, requires to be based on the kind of evidence that would be admissible under the rules of evidence during the hearing of a criminal trial. Expanding the judge stated that the lawfulness of an arrest and the admissibility of evidence at trial are different matters which will normally be considered in distinct contexts.

The concern is that the refusal of the court to apply the exclusionary rule to pre-arrest police practices creates almost a carte blanche threshold for police investigation procedures, which may have a chilling impact upon those subject to criminal investigation. It raises questions in relation to the means of gathering evidence to form reasonable suspicion. Can police now purposefully violate an individual’s constitutional rights to gather evidence to form the basis for reasonable arrest? Will the trial ignore the methods and techniques that led to a lawful arrest and only concern itself with the evidence that is gathered post-arrest and which is

\[1464\] Daly YM, “Judicial oversight of policing: investigations, evidence and the exclusionary rule” (2011) 55 Crime Law Soc Change 199–215. While the court avoided an in-depth examination of the exclusionary rule, it is submitted that the Court’s judgment has potentially serious ramifications for the pre-trial investigation of crime and on the rights of those subject to criminal investigation. The decision focused on the notion that evidence which provides the basis of a reasonable suspicion for a lawful arrest may not be deemed admissible under the strict evidentiary rules at trial, consequently such evidence does not have to be assessed as such. There are rational examples why this reasoning is favourable. For example, an example of evidence that might ground a reasonable suspicion but would not be admissible at trial is the concept of hearsay evidence. The basis for excluding hearsay evidence at trial is founded on the unreliability of such evidence and the difficulty of adequately proving the evidence in a court of law. For example, see, Teper v R [1952] AC 480, 486 per Lord Normand: “It [hearsay] is not the best evidence and it is not delivered on oath. The truthfulness and accuracy of the person whose words are spoken by another witness cannot be tested by cross-examination, and the light which his demeanour would throw on his testimony is lost.” However, does this situation change when the evidence in question can be adequately or objectively proved in a court of law, such as a fingerprint match as in the Cash case (or more particularly from the perspective of this thesis, a DNA profile match). The logic behind the exclusion of unconstitutionally obtained evidence in Ireland is based on the protection of constitutional rights. Following this protectionist stance it would seem that evidence obtained or retained in violation of constitutional rights should be prohibited from forming the basis for a lawful arrest (and if used, it should make the arrest unconstitutional), and any evidence obtained as a result of the arrest should be followed accordingly. Therefore, in the Cash case, if the first set of prints were deemed to be illegally retained, there retention breaches the defendants right to privacy (under the Constitution: the right to privacy has been recognised in McGee v AG [1974] IR 284; Norris v AG [1984] IR 36; Kennedy v Ireland [1987] IR 587) and the ECHR: S & Marper v UK 48 EHRR 50) and their use to ground an arrest would be seen as a breach of liberty, expressly protected under Article 40.4.1 of the Constitution. Consequently, the second set of fingerprints that were obtained after the second arrest and presented at trial should also be excluded because of the causative link to the unconstitutionally obtained evidence.


\[1466\] Ibid. para. 41.
presented at trial? As a result of *Cash* it would seem that the courts are ‘not concerned with the manner in which the evidence used to ground the arrest was obtained’.\(^{1467}\)

While the ramifications of the *Cash* decision are currently unclear, it undoubtedly presents a worrying picture of the protection of those subject to criminal investigation and the extent of judicial oversight of policing. As Daly notes ‘to hold, as the Court did … that the exclusionary rule has no application in relation to pre-arrest impropriety is most dangerous’.\(^{1468}\) While it can be difficult (and perhaps not completely desirable) to completely regulate the ‘dark arts’ of criminal investigation, particularly when a case does not reach the trial setting, it is submitted that it is erroneous to completely turn a ‘blind eye’ to police investigation practices especially when a dubious practice presents itself before the court (or that the dubious practice had a direct causative link to the evidence proffered at trial). Given the increasing use of surreptitious sampling as a means of collecting a DNA sample, it is perhaps important that we begin to question and examine how the police are gathering evidence (including DNA during the pre-trial investigation process).\(^{1469}\)

**Illegally retained**

The *Cash* decision also presents difficulty for evidence which is to be later adduced at trial. The match that formed the basis of arrest and allowed a second set of fingerprints to be obtained was directly linked to potentially an unconstitutionally retained fingerprint (the retention of the original fingerprints could not be lawfully established).\(^{1470}\) Such a scenario bears a resemblance to the UK decision in 2001, *Attorney General’s Reference (No.3 of 1999)*.\(^{1471}\) The case involved the retention of a DNA sample contrary to section 64 of the Police and Evidence Act 1984. Similar to Cash, the wrongly retained DNA profile was matched with a DNA profile obtained from the biological sample from the crime scene, resulting in the arrest of the defendant while allowed a second (evidential) sample to be obtained and presented at trial. In the UK section 78 of the Police and Criminal Evidence Act 1978 specifies that evidence may be excluded if ‘having regard to all the circumstances,


\(^{1468}\) Ibid. 213.

\(^{1469}\) The Law Reform Commission has recommended that 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’. LRC Report, Law Reform Commission, *Report on the Establishment of a DNA Database* (LRC 78 – 2005), para. 9.31.

\(^{1470}\) DPP (Walsh) v Cash [2010] IESC 1.

\(^{1471}\) *Attorney General’s Reference (No.3 of 1999)* [2001] 2 AC 91; [2001] 1 All ER 577.
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 the Attorney General’s Reference (No.3 of 1999) the House of Lords examined whether a match, obtained from a profile which should no longer have been retained on the database, should be admissible as evidence.\footnote{Ibid. 1472} The match in the case was obtained from a sample which should have been destroyed under the terms of 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. Considering the issue Lord Steyn held:

> It must be borne in mind that respect for the privacy of defendants 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 or harm to a person or property. And it is in the interests 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.\footnote{Ibid. 1473}

Considering the ‘triangulation of interest’ in this case the court ruled in favour of the admissibility of the evidence. 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 result in an interference with the defendant’s rights under Articles 6 or 8 of the ECHR.\footnote{Ibid. 1474}

The case is not identical to Cash, as it was in relation to DNA as opposed to a fingerprint and there was no confusion on the issue of the legality of the retention (it was a clear breach of the relevant legislation). However, there is no doubt that the Cash decision would seem to indicate that the Irish courts have adopted a stance that provides less protection for those engaged (or quasi-engaged) in the criminal process and less judicial oversight than in the UK.

\footnote{\textit{Moreover, in Khan v United Kingdom}, the ECHR held that in assessing whether a particular piece of evidence should be admissible, the court should examine the proceedings as a whole to determine whether they are fair. The facts of Khan involved 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, thus the evidence obtained was admissible in court. See \textit{Khan v United Kingdom} (2001) 31 EHRR 45.}
The courts in the UK would seem to conduct a balancing of the ‘triangulation of interests’ when considering the issue of exclusion of relevant evidence, in contrast to the ‘blind eye’ approach voiced in *Cash*.\textsuperscript{1475}

However, it is submitted that while a balancing approach to evidence is a tenuous exercise fraught with conflict and potential inconsistencies, it is preferable to a situation where individuals who are targeted during a criminal investigation are without any legal protection. It would mean that courts would also have a role in determining acceptable pre-arrest police investigation procedures, arguably an increasingly important prerogative given the increase in and capabilities of modern police surveillance technologies.\textsuperscript{1476}

It is submitted that if the state is to adopt a time-limit approach to retention then a strict approach to evidence adduced after the time-limit has expired needs to be adopted by the courts to ensure that police and other criminal investigation stakeholders are deterred from retaining evidence beyond its ‘legal life’. To minimise the chance of securing ‘matches’ from DNA profiles beyond their ‘legal life’, it is imperative to incorporate clear communication systems between the custodian of the database and the stakeholders who may have knowledge surrounding the retention of an individual’s profile.\textsuperscript{1477}

*Consolidated sampling framework*

The Bill specifically applies to the taking of bodily samples in relation to garnering a DNA sample and repeals the 1990 Act. It does not apply to other existing powers to take bodily samples such as fingerprinting and the taking of samples in relation to road traffic offences. Section 119 stated that nothing in the Bill affects the operation of any other enactment that...

\textsuperscript{1475} The admissibility of DNA evidence has also been examined in New Zealand. In *R v Shaheed* [2002] 2 NZLR 377, the court accepted that it would have to conduct a balancing test (involving an assessment of the competing rights involved) to determine whether DNA evidence gathered illegally would be admissible at trial. In *Shaheed*, the individual involved was compelled to undergo a blood test, which was used to connect the accused to the crime scene. From the context of a breach of a constitutional right, there was a direct connection between the constitutional breach and the obtaining of the sample. The court held that the evidence should be excluded. Importantly, the courts have held that the ‘balancing test’ will involve police investigative conduct, holding in *Shaheed* that the derivative DNA evidence was inadmissible at trial because of questionable police practices.

\textsuperscript{1476} As Daly notes ‘This is not to suggest that evidence grounding an arrest ought to meet the evidential and procedural requirements of evidence proffered at trial, but merely to allow the courts to hold gardaí, as agents of the state, accountable for breaches of rights (primarily constitutional rights, but legal rights also) at whatever stage of the criminal process they occur.’ Daly YM, ‘Judicial oversight of policing: investigations, evidence and the exclusionary rule’ (2011) 55 Crime Law Soc Change 199, 212.

\textsuperscript{1477} As the ENFSI Working Group have recommended ‘If the removal of a DNA profile from the database is dependent on external information, a process should be in place to give the custodian of the DNA database access to this information, preferably by means of automated message to him after an event which influences the deletion date of the profile.’ See ENFSI Working Group Report, 2008. Available at: [http://www.enfhsi.eu](http://www.enfhsi.eu)
requires a person to provide bodily samples or any powers exercisable by members of the Garda Síochána or other persons under that enactment, or the performance by a person or body (including the Medical Bureau of Road Safety) of any function under that enactment. It further provides that if a DNA profile is generated from a sample taken under another enactment it shall not be entered in the DNA Database System other than in the crime scene index unless it is provided for in the Bill. Given the sensitive information inherent in a DNA sample and the potential intrusions involved in the sampling of an individual during the criminal process, an argument could be put forward that all bodily sampling (and relevant codes of best practice) should be incorporated within a single legislative framework, which would aid in reducing potential confusion and inconsistencies surrounding the sampling of an individual.

Review

Section 90 stated that within seven years the minister is to conduct a review of the DNA Database System. Section 91 provided that the minister may alter (in the main by reducing) the default destruction periods and default removal periods on the basis of the review. It is submitted that allowing the minister to conduct the review was unsatisfactory. Such a review should be conducted (or at a minimum verified) by an independent authority that has the necessary expertise. In addition, the seven year period was excessive. Given the developing nature of DNA technology, a more reflective and regular approach is necessary to remain abreast of recent developments and to produce justifiable evidence for the continued collection, use and retention of the citizenry’s genetic information.

7.5.4. Analysis

The prolonged delay in establishing a DNA database has provided Ireland with the opportunity to garner instructive assistance from other jurisdictions which have already established such a database. The benefit of hindsight, reflection and analysis should have

1478 However, the Act does make amendments in relation to the 1984 Act and fingerprinting. Section 121 provides that a person who is arrested for the purposes of charge with a relevant offence (i.e., an offence in respect of which the person could have been detained under any of the statutory Garda detention powers listed in s.9 of the Bill, whether or not he or she was so detained) may have his or her fingerprints and palm prints taken subject to authorisation by a member not below the rank of sergeant. Section 122 amends s. 6A of the Criminal Justice Act 1984 in order to align its provisions concerning the use of reasonable force to take fingerprints, palmprints and photographs of persons in the custody of the Garda Síochána, with the provisions in ss.24 and 35 of the Bill. Section 123 amends s.9 of the Criminal Justice Act 1984, which applies certain provisions of the 1984 Act to persons detained under the Offences Against the State Act 1939 and to the exercise of certain powers conferred by s.7 of the Criminal Law Act 1976.

1479 It also provides for other similar reviews at such times as he or she considers appropriate.
enabled Ireland to reduce the pitfalls and mistakes that have occurred in other jurisdictions, for example by adopting the satisfactory oversight regimes and incorporating sufficient safeguards. Unfortunately the delay has also allowed Ireland to become susceptible to policy transfer and influence from the regimes of other jurisdictions. For example, given the increasingly globalised world in which we now reside, media reports from around the globe (particularly from the UK and US) tend to promote the ‘oracle’ like ability of DNA for the criminal justice system. Thus against this backdrop (and in conjunction with the increasing international pressure for inter-jurisdictional DNA exchange) it is submitted that any debate surrounding the introduction of a DNA database in Ireland has already been ‘tainted’ by these influences, as a result they have created a difficult atmosphere in which to objectively consider the best approach from a strictly Irish context.\textsuperscript{1480}

In 2003, the Irish Council for Civil Liberties presented an interesting range of questions when assessing whether a DNA database is necessary.\textsuperscript{1481} It reiterated that a DNA database is not necessary for the use of DNA in criminal investigations – DNA matching between suspects and DNA evidence samples can be carried out in the normal course of an investigation. The primary function of a database is in investigating crimes in which there are no formal suspects (in conjunction with relevant biological material (from which a DNA profile can be derived) being located from the crime scene).\textsuperscript{1482} Thus given this specific use, in order to assess the necessity of a DNA database it may be useful (particularly from a justification perspective) to examine issues such as how many unsolved crimes currently exist in Ireland for which there are no suspects and in how many of these crimes has biological evidence (from which a DNA profile may be obtained) been found? From these crimes does corroborative evidence exist that suggests that the DNA evidence may be useful for the investigation? Or whether existing procedures to take and use DNA during the course of an investigation would suffice to utilise the potential of DNA within the Irish criminal process? (If such a question was answered in the affirmative the potential benefit of establishing a DNA database may be negligible).\textsuperscript{1483} Thus, despite the potential benefits of a DNA database,
it is important to assess whether a DNA database will actually be of substantial benefit for Irish society.\textsuperscript{1484}

While there has been a rise in signal crimes in recent years, crime rates in general remain relatively low, particularly from an international perspective.\textsuperscript{1485} Therefore, why in a country of approximately 5 million individuals and a relatively low crime rate are we establishing a potentially expensive and intrusive policing mechanism? It is important to attempt to assess the necessity of a database from an evidentiary perspective, i.e. how does or will the establishment of database aid the investigation of crimes or produce incriminating evidence? Given the significant costs involved, the creation of such a database needs to be predicated upon substantial evidentiary justifications. Such evidence and a willingness to seek such evidence would seem to be glaringly missing from an Irish and an international perspective. Heffernan correctly observes that the transition to DNA databasing represents a significant, complex and costly undertaking and countervailing voices have emphasised the need for caution and debate on public policy, human rights and other grounds\textsuperscript{1486}. However, as a result of recent ECtHR jurisprudence, when considering the 2010 Bill, it is important to consider the available scope for the creation of a DNA identification database within a European context. While Marper is often used as the proverbial ‘stick’ with which to chastise proponents of a DNA database, it is important to stress, one that the ECtHR

\textsuperscript{1484} For a fleeting consideration of these issues see the Regulatory Impact Analysis that accompanied the 2010 Bill. See RIA: Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010. Available at: http://www.justice.ie.

\textsuperscript{1485} Similarly to other Western democracies, Ireland has experienced a significant, although not constant, increase in crime, particularly serious crime in recent decades. See Kilcommins S \textit{et al.}, \textit{Crime, Punishment and the Search for Order in Ireland} (Institute of Public Administration 2004), 109, table 3.3; Young P, O'Donnell I and Clare E, \textit{Crime in Ireland, A Report by the Institute of Criminology}, Faculty of Law, University College Dublin for the National Crime Council (Stationery Office 2001), 19, table 1; An Garda Síochána, \textit{Annual Report of An Garda Síochána} 2006 (Dublin: Stationery Office 2007), 20. Although as O'Mahony notes when examining Irish crime rates from the early 1970s to the 1990s a doubling of the crime rate over less than two decades is serious indeed, but it should be remembered that the same phenomenon has occurred elsewhere, and that our relatively favourable position seems to have been maintained’. See O'Mahony P, \textit{Crime and Punishment in Ireland} (Roundhall Press 1995), 29. For an interesting overview of Irish crime statistics from 1950–1973; 1974–1994;1995–2007 see the National Crime Council of Ireland website. Available at: http://www.crimecouncil.gov.ie/statistics_cri_crime.html. For recent figures refer to Central Statistics Office Ireland. Its most recent figures reveal a reduction in Ireland's crime rate. Available at: http://www.cso.ie/en/releasesandpublications/crimeandjustice/. See also Lally, C. —Reduction in crime rate since start of recession continues” \textit{Irish Times} (29 October 2011). However, it is important to acknowledge whilst attempting to measure crime rates can be a useful endeavour for a state, it is an exercise that is fraught with difficulty. Given the inherent inconsistency in the manner that crimes are recorded, processed and subject to conviction, combined with the rapidly expanding pool of offences and provisions afforded to the coercive arm of the state, it is questionable whether there is any real benefit (beyond attempting to assuage public anxiety) in the routine release of crime rate statistics. See King C, —Measuring the Level of Crime” (2008) 18(3) ICLJ 62.

recognised the legitimacy of a DNA identification database, and two, it recommends the Scottish retention model predicated upon time limits and offence categorisation as an amenable solution to the issue of balance in relation to DNA retention. It is also important to note that in a previous decision the ECtHR also affirmed the retention of DNA material from those convicted of an offence. Therefore, it would seem that a DNA database that retains the DNA material of those convicted of crime and those arrested for serious offences subject to proportionate time limits would seem to be currently amenable under the European Convention on Human Rights. Although as documented towards the end of chapter five, the “Scottish blueprint” has been subject to growing levels of criticism as it would seemingly allow the overt stigmatisation of a category of non-convicted individuals (even if for a restricted period of time) without offering any significant justification for the interference. Therefore, despite the growing criticism surrounding the continued delay in establishing a DNA database in Ireland, the prudence of successive governments on this issue is in part to be applauded. It is perhaps surprising when one considers the government’s recent record of rushing through legislation in response to signal crimes and sporadic instances of extreme violence. However, a DNA database is a highly controversial policing tool that potentially impacts severely upon due process values and civil liberties, therefore it is welcomed that the government did not proceed too hastily. However, despite this “measured” approach, it is submitted that the 2010 Bill contains a number of problematic elements.

However, beginning from a positive perspective, the Bill contains a number of promising elements that are aimed at protecting those targeted by the process, inter alia: the all encompassing framework incorporating collection, retention and governance is to be praised; as too is the proposal to create an oversight committee with significant access to the DNA database system; and the obligation on the minister to create regulations, codes of best practice and protocols (in combination with the relevant stakeholders) to safeguard the integrity of the genetic information is also a positive step; whilst the recognition in the Bill of

---

1487 Van der Velden v the Netherlands no.29514/05, December 7, 2006. Retention has also been upheld for a child convicted of a crime. See W. v The Netherlands no.20689/08, January 20, 2009.
1489 For example, Gardai have been calling for the establishment of a DNA database for over a decade, the development comes as a new DNA database, sought by the garda authorities for more than a decade, is finally being created for the force’. See Brady T, “Gardai get new powers to collect DNA from bodies” The Independent (21 December 2009).
the need to create adequate regimes for the taking of samples (with segregated provisions and standards for children and protected persons) also deserves a mention.

On introducing the Bill, the speech while at times heavy on the rhetoric recognised the key issues in the DNA debate. It identified both the benefits:

Without doubt ... the establishment of a DNA Database is the major innovation in the Bill. It will ensure that the Garda Síochána can take full advantage of DNA technology in the detection of crime. By helping to identify previously unsuspected persons as possible perpetrators and eliminating innocent persons quickly it will be invaluable to the Gardai in focusing their investigations and in using resources efficiently. It also has the potential to play a major role in finding missing persons.  

While it importantly identified a number of the difficulties and sensitive issues inherent in the creation of a DNA database:

In providing such a powerful resource I am conscious of the importance of limiting its impact on individual freedoms. I am especially conscious that biological samples contain a person’s genetic code. With this in mind I ensured that close attention was paid to finding the right balance between, on the one side, the public interest in the detection of crime and securing justice for victims and, on the other, the rights of bodily integrity and privacy.

However, acclamation for the government’s policy begins to be tested when one begins to examine the Bill in combination with the government rhetoric accompanying its release. For example, the 2010 Bill continued a _schizophrenic_ trend in Irish criminal justice policy.

---

1490 Ahern D, Speech by Minister for Justice, Equality and Law Reform, Dermot Ahern, Criminal Justice (Forensic Evidence and DNA Database System) Bill 4 March 2010 Second Stage (Dail).
1491 Ibid.
1492 This legislative _schizophrenia_ is evident in a number of other Irish criminal justice enactments. For example, see the civil behaviour orders introduced by the Criminal Justice Act 2006 (Parts 11 and 13). A policy which on first reading appears controversially punitive (as it is criminalising non criminal behaviour) is strictly minimised by a series of limiting procedures. This _schizophrenia_ is in part understandable. It can be attributed to the government’s attempts to appear _tough on crime_ and often being concerned about adopting _soft on crime_ approaches which may be utilised as political capital by opposition parties, while acknowledging that penal policy directly impacts upon constitutional (and now European) rights such as bodily integrity and the presumption of innocence. Campbell criticises this approach by suggesting that there is _an incongruity in ideologies and attitudes on the part of the legislature, which seems to encourage simultaneously a progressive approach with one hand, while mitigating the positive effect with the other_. Campbell L, —_Criminal Justice and_
Thus while the Bill contained a number of positive elements aimed at protecting those targeted by the process, it concomitantly contained a myriad of provisions that would sit more comfortably in Packer’s crime control dyad of the criminal process, *inter alia*: the proposed 10 year retention of DNA profiles from those merely detained and ultimately acquitted of an offence; the granting of authorisation for the collection and retention of a DNA sample (and corresponding DNA profile) in the hands of the Gardai as opposed to judicial (or independent) authority; the dissolution of the two step test for the collection of a DNA sample (section 11, intelligence sample); the granting of authority to conduct a DNA mass screen in the hands of the Gardai as opposed to judicial (or independent) authority; the failure to stipulate that evidence derived from outside the remit of this Act will not affect the admissibility of any correlative evidence subsequently presented at trial; and the allowance of an adverse inference to be drawn for a failure to consent to an intimate sampling procedure.

Moreover upon introducing the Bill the Minister for Justice observed: “The combination of these two major sources of samples (suspects and convicted persons) will ensure that, within a short time, a significant proportion of the *criminal community* will have their samples on the database”. 1493 This statement resonates with the ‘getting the active offending population’ rhetoric that preceded the introduction of the DNA Expansion Programme in the UK, which proved to be a significant driver of the rapid expansion of the UK NDNAD. 1494

The use of such language in an Irish context creates two particular issues. Firstly, it exacerbates the current perception of ‘us’ and ‘them’ that is becoming increasingly ingrained in Irish society. 1495 While punitive criminal justice policies are at times necessary and justified to deter and punish individuals for criminality, mass labelling of individuals (for

---


1495 O’Mahony eloquently identifies one of the fundamental problems driving draconian criminal justice policy: “The Irish crisis in civil liberties is a crisis of the collective conscience, most clearly reflected in the vacuum of political leadership in this area and in a determinedly narrow, morally bankrupt public opinion in all matters relating to the criminal justice aspect of individual freedoms and civil rights. Irish society may wish to see itself as simply pursuing a new balance of power between the State and the individual in order that the State can more effectively deal with those who choose to flout its laws but, in reality, there is a grave problem of loss of vision, of forgetting where we have come from as a society and where we should be heading. There is a general devaluation of the concept of justice and a deep confusion about the nature of the law, about whom it should serve and how it should serve them. The crisis is rooted in the unabashed sense of entitlement to condemn amongst the ‘haves’ of Irish society, associated with their profound lack of insight into and lack of empathy with the predicament of the ‘have nots’. O’Mahony P –Faking Liberties: Repression by Stealth” in O’Mahony P (ed), *Seven Crises in Irish Criminal Justice* (Roundhall 1996), 1.

---

example, as a result of their contact with the Gardai) is problematic. Secondly, by referring to those on the database as part of the 'criminal community' it automatically creates the public perception that anybody on the database is associated with criminality. As the Irish database planned to house the DNA of suspects (including those not convicted of an offence) and volunteers (subject to consent) it is erroneous (and perhaps irresponsible) to refer to the database as a 'criminal' database. Such a perception is problematic as it will arguably enable increasingly punitive policies to become the norm in relation to DNA policy, as the 'majority' will not see the infringement associated with these punitive policies as being in their interest.

While the human rights and civil liberty watchdogs have been active in examining the government's approach to the DNA database issue, their responses have unfortunately helped fuel the distorted narrative surrounding the DNA debate. For example in the context of the DNA debate, Mark Kelly from the Irish Council for Civil Liberties stated: 'There is an entirely legitimate public interest in the creation of a DNA database that makes it easier to catch criminals; however, the sampling, retention and sharing of DNA requires special safeguards to ensure that the private lives of innocent people are protected.' By adopting a position of legitimacy from the beginning Kelly and other human rights/civil liberty advocates have automatically narrowed the debate. If one considers the DNA debate as a spectrum, one end of the spectrum would prohibit the establishment of a DNA database while the other end of the spectrum would create a comprehensive DNA database by swabbing the entire population. Therefore when human rights advocates adopt a position outlining the legitimacy of a DNA database predicated upon public interest, it automatically narrows the

---

1496 See ECtHR observation in Marper. Therefore drawing upon criminological labelling theory and the self-fulfilling prophecy there is a concern that individuals retained on the database will become stigmatised as 'criminal' as a result of their retention on the database. See S & Marper v UK 48 EHRR 50, para. 124. For a useful introduction to labelling theory see Rock P, –Sociological Theories of Crime” in Maguire M, Morgan R and Reiner R, The Oxford Handbook of Criminology (4th edn, Oxford University Press, 2007), 29–33.

1497 The current issues surrounding 'us' and 'them' were evident during Dail debates in the middle decades of the twentieth century: ‘I am not a hard man but I believe society must be protected. Society which earns its living honestly must be protected against those who break the law. There is a minority of people who are dangerous, low and dirty, and society must be protected against them.’ See Dail Debates 28 June 1960, vol 183 No 4. Therefore the 'us' and 'them' perception within criminal justice is not a recent phenomenon: in the late nineteenth century Falkiner noted that the majority of prisoners were filled with category of criminal, infected with 'the moral malaria of our lower streets' as opposed to criminals motivated by rationality. See Falkiner FR ‘Our Habitual Criminals” (1882) cited in Carey T, Mountjoy: The Story of a Prison (Collins Press 2000), 116.


1499 ‘Legislation to pave way for DNA database’ The Irish Examiner (19 June 2010).
debate, while enabling a problematic discourse dominated by balance to emerge. It is suggested that as a public we should have engaged with this issue from the beginning; the natural starting point for such a debate should have been whether the establishment of a DNA database was necessary in the Irish criminal justice system, before ‘jumping’ to what type of DNA database we should be creating. However, given the acceptance and exponential growth of DNA databases in a global context, the pressure exerted on Ireland by Europe to establish a DNA database and the recent Marper decision, which seemingly legitimised the establishment of a DNA database, it is unsurprising that the Irish debate unfortunately began further down the spectrum than it ought to have.

However, it is important to recognise that rarely in life do we start from an ‘original position’. For example, Ireland has legislated for the collection of DNA since 1990, while the proliferation of DNA databases in other jurisdictions has been increasing steadily since the creation of the first database in the UK in 1995 and the use of DNA profiling and a DNA database is regularly featured (and often misrepresented) in the modern media. Thus in the absence of the ability to cast a Rawlsian ‘veil of ignorance’ over society, it must be accepted that any debate surrounding DNA must be considered within the current public understanding and attitudes towards the use of DNA during the criminal process.  

Although the lapsing of the 2010 Bill has presented an opportunity for the state to re-engage with the DNA debate, this re-engagement should be predicated upon a desire to construct an open dialogue with the public surrounding the issues involved in utilising DNA in the criminal process. Promotion of its benefits is not overly problematic, but such promotion should avoid relying on sensationalist success stories, theoretical potential, ‘cherry picked’ statistics from other jurisdictions or arguments grounded in the ‘public interest’.

It is submitted that the all encompassing approach is to be retained but requires an amended more ‘reflective’ approach to ensure that the individuals targeted by the process are adequately protected. Such an approach will avoid placing the concept of ‘balance’ as the desired outcome within this debate. A ‘balance’ may have to be struck but only when clear, justifiable and socially acceptable reasons are proffered (and either independently provided or validated).

The advantage of this ‘reflective’ approach is that it seeks to locate the use of DNA within the boundaries of the society in which it is operating. It recognises the desire to utilise the technology whilst concomitantly recognising the human rights and due process concerns inherent in its use. However, to avoid the impasse or ‘knee jerk’ legislative response that often stifles such issues the ‘reflective’ approach aims to maintain legitimacy by avoiding adopting an approach seeking finality. Instead, even after a decision or choice has been made, it continually seeks the inputs and perspectives of the various stakeholders impacted by the framework and society in general. It is argued that such an open and ‘reflective’ approach will aid in promoting public confidence and trust in the framework.\(^{1501}\)

Moreover, the reflective approach importantly recognises the evolving nature of the technology and the police practices that are evolving with it.\(^{1502}\) Thus it is imperative that any framework outlining the use of DNA in the criminal process is constructed in a manner that will continue to grow and adapt with the evolving technology and associated practices so as to ensure that those targeted by the process remain sufficiently protected. It is submitted that the lack of ‘reflective’ provisions in the 2010 Bill significantly undermined its ability to continue to adequately protect those targeted by the process. Moreover, the absence of civic engagement and active public dialogue mechanisms in the Bill may have presented trust and legitimacy problems for the continued use of DNA in the criminal process as technology and science continue to reveal more above the inner workings of the human genome.

\(^{1501}\) As McCartney et al observe, ‘New legislation, if developed with integrity and open-mindedness could achieve a greater degree of public confidence (from both the rights and utility perspectives). It should contain clear principles with precise arrangements to be put in place and tested incrementally. This process might be initiated by the creation of an independent statutory governance body, whose first task would be to implement satisfactory arrangements for the management, and when required, the destruction of tissue samples taken from known individuals and the DNA profiles analysed as a result of such actions.’ See McCartney C, Williams R and Wilson T, The Future of Forensic Bio-information (Nuffield Foundation 2010), 122–123. They proffer four principles that should underpin any legislative arrangement for DNA profiling in the criminal process: it should be constructed in a manner that should survive judicial scrutiny; research underpinning policy choices should be ground upon robust and comprehensive research findings, logical reasoning and transparency; it should be recognised that an element of discretion is essential to the concept of policing; however, such discretion should be subject to regular and effective review and audit; and finally the general operation of the new arrangements should be vested in an independent statutory oversight committee, which should ensure effective audit arrangements, data collection and protection provisions, publications and commissioning of research and which would be ultimately accountable to parliament.

\(^{1502}\) As outlined in chapter three, it is suggested that the DNA framework should be outlined within a primary legislative framework with powers to amend the framework in line with developments in science and technology (and societal standards) provided for in secondary or delegated legislation. See Byrne R and McCutcheon P, The Irish Legal System (4th edn, Butterworths 2001), chapter 13.
7.6. Conclusion

In recent years the Irish state has increasingly extended its powers in the criminal justice arena. The growing dominance of crime control within the Irish criminal process has been predicated upon the state’s need to quell the growing problems of organised and gangland crime in Ireland. For example, pre-trial protections and aspects of the trial have been amended to enable the state to tackle crime more effectively, including broadening the circumstances for search warrants, elongating detention periods, undermining the right to silence and (returning to the context of this thesis) widening the pool of individuals who may be subject to forensic sampling. Together this increasing erosion of due process values indicates a preference for the exigencies of crime control over due process rights of the individual, and represent[s] a move toward a more result-orientated way of thinking. The incessant trend towards crime control is eloquently summarised by Walsh when commenting on the measures included in the Criminal Justice Act 2006:


1504 As Walsh notes recent legislative measures have introduced procedural measures which include inroads into the right to silence, the growth in adverse inference provisions; obligations of advance disclosure on the defence; more frequent resort to provisions which shift the evidential burden onto the accused; proof by certificate and documentary evidence; the admission of deposition and video-taped evidence; dilution of the right to bail; the abolition of the preliminary investigation.'See Walsh D, Criminal Procedure (Dublin 2002), xii.

Although the Criminal Justice Act 2006 is the latest in the long line of similar measures, it also stands out from all the rest. It, more than any other, conveys a strong ideological commitment to crime control values over due process values in criminal justice. Not only does it push the crime control boat out into areas that it had not been before, but it also pushes it further and deeper into areas that had already been reshaped in a crime control mould by its predecessors. Even its scope, structure, drafting style, the manner in which it was cobbled together in its formative stage and the fact that it was not publicly available in hard copy for several months after it was enacted reflect the dominance of crime control values over the principles of legality and due process. Does it all add up to a crushing defeat for due process values? There can be little doubt that it represents a very substantial and significant advance for crime control values over due process values. Only time will tell whether that translates into a crushing defeat for the latter.\footnote{1506}

Since 2006 there have been a number of other highly controversial pieces of legislation passed that have significantly increased the investigation powers of the executive while diluting the due process rights of those subject to criminal investigation, such as the Criminal Justice Act 2007\footnote{1507} and the Surveillance Act 2009.\footnote{1508} Therefore it would seem that Walsh is

\footnote{1506} Walsh D, “The Criminal Justice Act, 2006: A Crushing Defeat for Due Process Values” (2007) 7(1) Journal Studies Institute Journal 44, 59. The 2006 Act makes substantial changes to the criminal law: it widens the investigation powers of the Gardaí, it broadens the admissibility of certain witness statements, alters the appeals in certain criminal proceedings, provides a wide range of firearm offences, provides for new offences in relation to fireworks and new offences for those engaged in criminal organisations, it creates new offences for the importing and distribution of controlled drugs, places obligations on those convicted of drug trafficking, increases and clarifies the sentencing options to the courts, provides civil proceedings as a mechanism to address anti-social behavior by adults, amends children Act, creates a Criminal Law Codification Advisory Committee and other miscellaneous provisions. For further information on the 2006 Act see Walsh D, “The Criminal Justice Act 2006: A Crushing Defeat for Due Process Values” (2007) 1 Judicial Studies Institute Journal 44.

\footnote{1507} The 2007 Act contains a number of amendments to the criminal law, \textit{inter alia}, provisions to improve the quality of decision cases in relation to bail, creates new sentencing provisions for those linked to 'organised crime' and introduces new post release orders known as 'monitoring orders', broadens the circumstances in which inferences may be drawn, introduces the mandatory minimum sentence for all drug trafficking offences, extends firearm regulations, establishes a Garda Síochána Executive Management Board and other miscellaneous provisions. For further information on the 2007 Act see Campbell L, “The Criminal Justice Act 2007 – A theoretical framework” (2007) 17 (3) Irish Criminal Law Journal 8.

correct in charting the increasing dominance of crime control over due process values within the criminal justice system.

A question to address in the context of this thesis is whether the establishment of a DNA database contributes to this ‘crushing defeat’ of the traditional due process values. As Walsh himself observes, ‘The courts, the prosecution and the Garda cannot be expected to cope effectively with crime in the 21st century by using the criminal justice tools of the nineteenth.’ Thus the adoption of a DNA database should not automatically be subsumed within the crime control dyad of the criminal process. It should be seen as a twenty-first century technology that offers fantastic potential for a criminal investigation.

However, there is no escaping the fact that the introduction of a DNA database (and the expansion of the DNA regime in general) within the Irish criminal process is a controversial issue. Responding to the announcement of the Criminal Justice (Forensic Evidence and DNA Database System) Bill 2010, Pat Rabbitte, the then Labour spokesman for Criminal Justice, succinctly noted the difficulties inherent in implementing legislation particularly within the criminal justice arena:

Balancing the competing imperatives of preventing or solving crime and ensuring the protection of human rights is a perennial challenge for legislators, especially in the criminal justice arena. At times of high emotion generated by a particular atrocity or controversy, it is difficult to find a sympathetic audience for articulation of the necessity to balance these competing imperatives. It is all the more difficult when standards in our society have plumbed the depths where violence is commonplace, the vulnerable are exposed and unlawful killings are a regular feature. We may add to this explosive cocktail the impulse of justice ministers to be seen to do something, to introduce tough legislative measures and to be presented as standing up to the criminal fraternity. Often, there is little substance in these measures other than the licence to rhyme off actions taken by the minister, even if they are futile, unenforceable or simply ignored.

An interesting observation in Rabbitte’s comment is whether the DNA database is ‘necessary’ in the Irish criminal justice system or was it an example of a policy akin to the

---

1510 See Dail Debates 4 March 2010, vol 704, No 2 (Second Stage).
―seeing to be doing something” measure which is ultimately focused upon improving political capital instead of a genuine attempt to tackle criminality. For example, while the 2010 Bill contained promising elements (such as the focus on protecting privacy and the establishment of an oversight committee), it also contained a number of problematic provisions (such as the 10 year retention period of those unconvicted of an offence and the dissolution of the relevance principle for the entry of a suspect’s DNA profile on to the database). A concern is that upon examination such problematic provisions lack the necessary ‘substance’ to justify such intrusion by the state on the rights and due process values of individual citizens.

Moreover, while there has been caution displayed by successive governments on this issue, it is that external factors such as resources, European jurisprudence and political lethargy were the primary drivers for the delay as opposed to a ‘deep consideration’ of this issue. For example, the delay has provided the government with time; time during which constructive meaningful dialogue could have been established between the state and the public on the issues involved in allowing the state to collect, retain and use an individual’s DNA during the criminal process; however, such engagement has been unfortunately absent.

Given the sensitive issues involved (allowing the state to collect, retain and use, the most intimate information possessed by an individual) civic engagement and establishing effective governance and oversight should not only be desired but also demanded. The lack of such engagement would seem unfortunately to have become a modern facet of governance in Ireland. Whether founded in the cultural or historical deference tied to our colonial past or modern cronyism, there is a distinct lack of democratic accountability and dialogue in modern Ireland.

As a result of the lapsing of the 2010 Bill we have been presented with an ideal situation to reassess and engage with the concept of DNA and the Irish criminal process. It is submitted that we should return to first principles and begin to assess the key justifications for collecting, retaining and using DNA in the criminal process from a strictly Irish perspective. Central to this engagement is the need for the state to initiate an open, informed and continuous dialogue with the public surrounding the use of DNA profiling within the criminal process. Given the sensitive material contained within an individual’s genome, the potential for abuse and misuse of the information is enormous. Thus to maintain and promote public trust in this area, it is essential to establish an adequate governance regime to ensure the
integrity of the genetic material and the system (this should entail establishing adequate security, transparency, oversight and accountability provisions).

Once clear justifications, civic agreement and suitable audit mechanisms for its use are formulated then, and only then, should an all encompassing ‘reflective’ regulatory framework be established. It would incorporate ‘organic’ procedures and protocols for the full use of DNA profiling within the Irish criminal process, \textit{inter alia}: pre-arrest uses (such as surreptitious sampling); arrest (surrounding the methods and safeguards involved in collecting a sample); retention (who and what should be subject to retention, duration and removal criteria); use (to what use the retained material may be put); inter-jurisdictional transfer, governance (oversight and external review procedures); and its application in the post-conviction environment. It is submitted that such an approach will allow the potential of DNA profiling to be utilised, but in a manner that ensures that the human rights, due process and ethical concerns of those targeted by the process remain sufficiently protected.
8. Conclusion: DNA profiling and the Criminal process: ‘Striking the Right Balance’ – the case for a reflective approach

‘DNA testing is to justice what the telescope is for the stars: not a lesson in biochemistry, not a display of the wonders of a magnifying glass, but a way to see things as they really are.’

‘To be sure of apprehending criminals, it is necessary that everyone be supervised.’

If one combines the underlying tones of the opening two quotes, one may perhaps arrive at a conclusion that a carte blanche approach to the application of DNA profiling in the criminal process is an appealing proposition. This appeal is predicated upon the myriad of potential benefits associated with the incorporation of DNA profiling (particularly in the form of a database) into the criminal process, inter alia, its ability to reach back through time to link individuals to crimes scenes (‘cold cases’), to quickly include or exclude individuals from a current criminal investigation, to exonerate individuals who have been wrongfully convicted and offer a probative form of evidence (when collected appropriately) in a trial setting.

Particularly important has been its potential for criminal investigations. Its promise, perceived objectivity and high profile success stories have resulted in it usurping other forms of evidence gathering techniques (including other forms of forensic evidence such as

---

1511 Barry Scheck and Peter Neufield Actual Innocence (NAL 2003).
1513 Heffernan L, —〈DNA Database‖ (2008) 18(4) Irish Criminal Law Journal 105. It has also been argued that it may act as a deterrent to crime; however, such claims (without evidence to support them) are purely speculative.
1514 In the Marper decision by the House of Lords, Lord Steyn began his judgment by stressing the importance to society for using technology (such as DNA profiling) during criminal investigation; he stated: _My Lords, it is of paramount importance that the law enforcement agencies should take full advantage of the available techniques of modern technology and forensic science. Such real evidence has the inestimable value of cogency and objectivity. It is in large measure not affected by the subjective defects of other testimony. It enables the guilty to be detected and the innocent to be rapidly eliminated from inquiries ... it is, of course, true that such evidence is capable of being misused and that courts must be ever watchful to eliminate risks of human error creeping in. But as a matter of policy it is high priority that police forces should expand the use of such evidence where possible and practicable.‘ See R (S) v Chief Constable of S Yorkshire Police [2004] 1 WLR 2198, per Lord Steyn.
1515 See Bond JW, —Value of DNA Evidence in Detecting Crime‖ (2007) 52 Journal of Forensic Science 128–36. As Cole elucidates, _The principal advantage of DNA is its greater potential for forensic application. Detectives can hope to recover DNA traces from many more crime scenes, much more often, than they recover latent fingerprints. This ability to find the perpetrator of particularly reviled crimes makes DNA attractive to the
Unfortunately this phenomenal potential has aided in creating a distorted _forensic imaginary_ of DNA profiling within the criminal process. This distorted perception has created a difficult environment in which to maintain a semblance of balance in the DNA debate due to its potential or perceived _oracle_ like ability.

A current concern is the incessant expansion and _function creep_ of DNA policies and practices. It is submitted that this expansion has in large part been driven by an increasingly punitive society seeking to utilise the benefits of this powerful scientific technology to quell the growing _ontological insecurity_ of modernity. The concern is that within this environment justifications are often supplanted by the mantra of the _innocent public_. This advantage in the realm of forensics, in turn, makes genetic criminal identification databases valuable because they make it possible to solve cold cases. See Cole SA, _Suspect Identities: A History of Fingerprinting and Criminal Identification_ (Harvard University Press 2001), 301.

It is, however, important not to become overly concerned with the _future uses_ of technology. New technology is generally regarded as _more effective, efficient, powerful and generally better than what it supersedes_. See Edgerton D, _The Shock of the Old: Technology and global history since 1900_ (Profile Books, 2008), 8. Often, to become widely used, a technology does not have to be significantly better than the alternative, it need only be marginally better. Often the difference may only be trivial. For example, the paper clip is ubiquitous not because is a revolutionary technology but because of its simplicity. We know that we can exist without the paper clip. We know that we can use a variety of paper collating products in lieu of a paper clip. _inter alia_ staple, pin, hole punch, twine, binder, folder, and so forth. We use paper clips because they are marginally better and more convenient than the alternatives. Edgerton warns of the _futurology_ that is often inherent in discourse surrounding new technology, _the assumption that new is much superior to older methods is widespread_. See Edgerton D, _The Shock of the Old: Technology and global history since 1900_ (Profile Books 2008), 8. For example, in terms of the DNA database debate it is interesting to observe that fingerprinting still remains a more commonly used technique in criminal investigation. As McCartney notes _such –hype_ around DNA was also in spite of that fact that fingerprints were probably still a more important forensic tool, citing_ If you asked them [the public] what the most important forensic tool was they would probably say DNA whereas in reality it is probably still fingerprints and will remain so for the foreseeable future. That is probably a consequence of the media and hype around DNA where fingerprints are seen as being __–old fashioned__." Interviewee 1/L/P in McCartney C, _Forensic Identification and Criminal Justice: Forensic Science, Justice and Risk_ (Willan Publishing 2006), 184. Interestingly, a recent article in _The Irish Times_ entitled _Cracking Ireland’s cold cases_ provided a fascinating introduction to Ireland’s cold case murder squad. Established in 2007 the team is part of the National Bureau of Criminal Investigation, the Garda’s serious crime unit. Lally outlines the purpose of the squad to _pick through the 200-plus unsolved murderers since January 1st 1980, and try to catch killers who had slipped through the net first time around_. Revealingly, while DNA profiling is playing a significant role in the cold case process, it is interesting to note that Detective Superintendent Mangan, head of the 11 strong cold case squad (their official title is the Serious Crime Review Team), notes that _although much has been made of recent advances in forensic science, most of the cases that he and his squad manage to crack are solved using __–old fashioned__ policing._ See Lally C, _Cracking Ireland’s cold cases_ _The Irish Times_ (26 March 2011).


As Zender argues, in late modern society risk aversion has led to a relentless pursuit of technologies with which to achieve security, safety, and certainty, which _attracts_ substantial funds, both public and private, and serves to justify draconian intrusions on personal freedom. Zender L, _The pursuit of security_” in Hope T and Sparks R (eds), _Crime, Risk and Insecurity_ (Routledge 2000), 201.
have nothing to hide’ or a desire of society to control _suspect populations’. The difficulty is that when juxtaposed against such communitarian and consequentialist logic amorphous concerns (such as human rights and due process values) habitually rank lower on the general public’s radar.

Interestingly on the concept of the expanding role of DNA within the criminal process Corns had in the early stages of its use in the criminal process prophesied a future _ratchet effect_. Corns argued that given the _power_ of DNA technology that it was inevitable that police powers would be dramatically expanded to allow for the gathering of DNA evidence, which would have a substantial impact on human rights and due process values. Corns article was written before the concept of a DNA database arose, but it would seem that his _ratchet_ prophecy on the dramatic expansion of the powers afforded to the police to use DNA in the course of a criminal investigation has proved correct.

Exacerbating this difficulty of locating an amenable balance, is that when dialogue does occur it is invariably situated in a pugilistic contest between diverging stakeholders adopting overly defensive postures. For example, proponents of its use will cite the potential of a DNA database and other novel DNA techniques for the criminal process, often using high profile success stories and society’s desire to solve crimes and apprehend those responsible in an attempt to bulwark their position. In contrast those disagreeing with its use will often speak in an unhealthy absolutism citing the significant intrusions that its use makes on those targeted by the process and ultimately society itself. The result of this antagonistic contest is often an impasse which both stifles and frustrates progressive dialogue on this issue.

As a result of these difficulties this thesis is offering an all-encompassing _reflective_ regulatory framework as a suitable mechanism for underpinning the use of DNA profiling in the criminal process. As Suter observes such an approach ensures that important values (such as human rights, due process and ethics) _are not undervalued and too easily trumped by the measurable benefits_ of DNA profiling _while also keeping in view relevant competing interests_, namely those in favour of utilising the technology. The benefit of such an approach is that its central goal is not to facilitate an _emotionless_ balancing act to adjudicate

---

a winner but to reach a measured and legitimate resolution, while continuing to allow the values from diverging sides to continue to exert influence over any decisions taken so that the overridden values do not go away; they retain —*moral traces*".  

In addition given the developing nature of DNA technology, the benefit of a ‘reflective’ approach is its capacity to grow and evolve with the technology, thus ensuring that its benefits can continually be realised within a discursive framework designed to continually protect those individuals targeted by the process. The concluding section will briefly recap a number of the findings postulated during this thesis, focusing on the three key concepts examined: collection, retention and governance.

### 8.1. Collection

Fundamental for the efficacy of DNA profiling in the criminal process is the ability of the police (or another relevant body) to gather a comparator DNA sample. In short, such a sample can be obtained by three methodologies: compulsion, consent and/or surreptitiously, with each creating diverse challenges respectively.

In the area of compulsion, differences exist between jurisdictions in relation to the type of individual who may be subject to sampling (ranging from those convicted of a specific offence (such as murder or rape) to those arrested for a minor offence); the necessary authorisation necessary to obtain the sample (ranging from a judicial warrant to internal police approval when consent is not forthcoming); and finally how such a sample may be obtained (whether through a blood sample or a buccal swab).

It is submitted that the practice of the state of compelling an individual to provide a DNA sample is (when conducted appropriately) a legitimate endeavour. The justification for this stems from the evidential significance attached to the garnered DNA sample. This thesis is promoting a sampling regime predicated upon the concept of the two step test, namely an individual should have to be reasonably suspected of committing the offence and importantly,

---


1526 As elucidated in chapter three, the collection of DNA can be subdivided into two main areas, namely the collection of a crime scene DNA sample and the collection of a comparator DNA sample. All international jurisdictions utilising DNA during a criminal investigation allow and are predominately under an obligation to collect DNA (as relevant evidence) from a crime scene; thus this concluding section will focus on the more controversial issue of collecting comparator DNA samples. See Interpol, *DNA Handbook on DNA data exchange and Practice* (December 2009), 53. Available at: [http://www.interpol.int/Public/Forensic/dna/handbook.asp](http://www.interpol.int/Public/Forensic/dna/handbook.asp).
the DNA sample should be relevant to the investigation. It is submitted that such an approach provides an adequate level of justification for the compulsory taking of a DNA sample from an individual.

However, it is recognised that such an approach creates both due process and human rights concerns. Beginning with the former, to provide a "buffer" against the arbitrary use of such a procedure it is submitted that the two step test should be subject to judicial (or independent oversight). In relation to the latter, it is imperative that any sampling regime which enables the state to compel an individual to provide a sample must formulate effective safeguards to ensure the human rights concerns of those targeted by the process are adequately protected. Safeguards should include training for all those involved in the sampling process, clear guidelines stipulating the various aspects of the sampling process (such as the level of force which can be utilised to gather the sample), development of codes of best practice, external oversight to verify compliance and regular review of the sampling process so as to ensure that the codes of practice remain adequate for the protection of those subject to sampling.

It is recognised that there may be circumstances when it may be necessary (based on pragmatism and evidential significance) for the police to collect a sample from an individual not subject to formal investigation (i.e. a volunteer). However, it is submitted that the traditional police practice of "asking" individuals to submit a DNA sample should be prohibited. As an alternative, volunteer sampling should be located within a legislative framework. Given the sensitive information contained within an individual's DNA sample, it is argued that such an approach enables strict safeguards to be developed so as to minimise and protect the human rights and due process concerns of those requested to provide a sample. To protect against the potential abuse of this provision, it is submitted that a volunteer’s refusal to provide a sample should not be allowed to justify the arrest of an individual as a suspect (in the absence of further relevant evidence).

The operation of a mass screen is a particularly delicate issue. It presents fundamental questions for the relationship between the individual and the state, essentially allowing the state to forgo the traditional concept of "individualised" suspicion for "group suspicion" in the hope of "stumbling upon" a useful line of enquiry (through a DNA match). The "fishing expedition" or "needle in the hay stack" justifications for such a practice are tenuous. Thus it

1527 Volunteer sampling is grounded on pragmatic grounds (i.e, it may be necessary to exclude the DNA sample of a witness or victim from a crime scene sample).
is imperative that such screens, when applied, are subject to rigid guidelines within a legislative framework. It should incorporate the following criteria: it should only be utilised as a practice of ‘last resort’; authorisation should be vested in judicial approval or an independent oversight body; a narrowly defined pool of targets (area/age/physical description) should be clearly identified, including a policy for those unwilling to participate in the sampling (it is submitted that an individual refusing to submit a sample during a mass screen could be compelled to do so pursuant to a court order when there are relevant reasons to do so); finally, there should be continual review of the practice to ensure its continued legitimacy, followed by a post review assessment to assess its utility.

Finally, it is submitted that the practice of surreptitious sampling should be strictly located within the legislative framework. The practice of enabling the coercive arm of the state to secretly collect and/or deceive individuals to collect their DNA samples is an ethically questionable practice. While those in favour will cite the potential benefits (and recent success stories), it is submitted that this ‘end justifying the means logic’ is not wholly persuasive. Given the sensitive material contained within an individual’s DNA sample, it is vital that we clearly outline the parameters under which the state can collect and gain access to an individual’s genome: therefore, if the police require the DNA of an individual for a criminal investigation, it is suggested that the justification for its collection (if the threshold for reasonable suspicion has not been met) should be adjudicated by a judicial authority (or an established independent oversight committee).

Thus in summary, the collection of comparator DNA samples should be grounded in clear justifications (such as the two step test), adequate safeguards (such as the establishment of comprehensive codes of practice, procedures and protocols focused on ensuring the protection of those targeted by the process) and independent oversight (which endeavours to confirm the performance and adherence of the relevant stakeholders to the legislative and related requirements). Given the developing nature of DNA technology, the ‘reflective’ regulatory framework is postulated as providing an amenable framework for collection. The goal of the framework is to facilitate the potential of DNA technology (thus allowing all three methods of collection to be utilised), however, it would ground their use by ensuring that adequate safeguards and protocols were established to ensure those subject to sampling are adequately protected). Moreover, the ‘reflective’ approach, underpinned by continuous civic
engagement, will enable the relevant safeguards and potential uses of DNA technology to develop in tandem as the science, technology, and police practices continue to evolve.

8.2. Retention

The retention of comparator samples is a highly contentious issue.\textsuperscript{1528} In contrast to allowing the state to collect DNA samples for the purposes of investigating a specific offence (grounded in an evidential significance justification), the practice of the state retaining an individual's DNA after it has served its purpose (i.e. identifying or failing to \textit{match} an individual to a crime scene sample) is deeply problematic. This \textit{housed} population of DNA information allows the state to utilise this information or \textit{intelligence} in future investigations without having to return to the relevant individuals for another sample. The issue can be divided into three areas: ethics, human rights, and due process issues.

From an ethical perspective the practice of the state retaining the genetic information of its citizenry (or part thereof) creates significant questions for society. For example, as knowledge of the human genome continues to evolve, society may need to revisit the acceptability or desirability for this practice to continue in the future.\textsuperscript{1529} From a human rights perspective, the retention of this genetic information creates significant issues around the concept of privacy, with particular concern surrounding the retention of cellular samples as they contain an individual's \textit{blueprint for life}.\textsuperscript{1530} However, the distinction between a DNA sample and DNA profile is often unhelpful during this debate. For example, those in favour of retention will predominately argue that a DNA profile contains only a \textit{snap-shot} of an individual's DNA sample; thus it creates analogous concerns with the retention of other biometric identifiers such as fingerprints, focusing on the issue that it is only useful for the purposes of identification. Herein lies the distortion, as the content of the information should be deemed irrelevant when we begin to examine this issue. We should begin by assessing whether the state should be allowed to retain information from certain categories of individuals. If we answer this question in the affirmative, we should then assess which categories of individuals should be subject to retention; only then should we begin to assess the content of the information involved. In relation to the DNA sample issue, it was argued in

\textsuperscript{1528} Again this issue can be divided into crime scene and comparator samples. It is submitted that the retention of crime scene samples is not overly controversial, thus the chapter will focus upon comparator samples.

\textsuperscript{1529} There is a growing body of literature around the concept of genetics and rights. See for example, Jasonoff S (ed), \textit{Reframing Rights: Bio-constitutionalism in the Genetic Age} (MIT Press 2011).

\textsuperscript{1530} Manuel VM, —StatDNA database and Data bank expansion laws: Is it time for California to expand its DNA data base law to include all convicted felons?” (2003-2004) 31 W St UL Rev 339.
this thesis that given the embryonic nature of DNA technology, prudence may suggest that
the retention of the DNA sample in tandem with its DNA profile may be the best course of
action. In such a scenario focus should centre on creating rigid safeguards or ‘notches’ that
could adequately protect the retained information.  

While adequate safeguards can ‘contain’ the ethical and privacy concerns surrounding DNA
retention, this cannot be said for due process concerns, namely the presumption of innocence.
This thesis has argued that the unjustified retention of an individual’s DNA in a state
repository (regardless of a DNA sample or DNA profile) is problematic. The concern is that
individuals (particularly those who have been arrested but not subject to a conviction) are
increasingly having their DNA collected and subsequently retained for prolonged periods in
the state repository. In contrast to the evidential significance underpinning collection,
retention is overtly postulated on a less persuasive ‘intelligence gathering’ premise.

From a criminal investigation perspective it is understandable that the desire to create a
database (and make it as large as possible) is an alluring prospect. Common sense dictates
that in theory the greater the size of the database, the greater the odds of achieving a match
from a DNA profile obtained from a random criminal scene. For example, in theory a
universal DNA database, which housed the entire population would (leaving aside
contamination and adventitious match issues) result in a ‘match’ every time the police
conducted a speculative search of an unknown crime scene sample. However, the size of the
DNA database and the category of individuals included is a complicated issue, while in
theory a ‘larger’ database may benefit criminal investigation it cannot be considered
exclusively from a consequentialist perspective, thus it is vital to consider the concomitant
tradeoffs that may occur as a result of ‘widening the [retention] net’.

---

1532 While it is often argued that the ‘bigger the database the better’, it may not be so straightforward. While a universal DNA database would undoubtedly create an exponential increase in the number of DNA matches per crime scene, the problem is that every DNA match would have to be investigated. Therefore the police would be under pressure to cope with the increase in investigative leads while the forensic laboratories, which are currently under pressure, would be overrun with DNA samples. Therefore one could suggest that the establishment of a universal DNA database could conceivably result in a law of diminishing returns because of the sheer size and impact of such a DNA database. Kaye DH and Smith ME ‘DNA Databases for Law Enforcement: The coverage question and the case for a population wide database’ in Lazer D (ed), DNA and the Criminal Justice System: The Technology of Justice (MIT Press 2004), 269.
It is important to emphasise that despite the concerns surrounding DNA retention, as a practice it has been recognised as a legitimate tool for criminal investigation and crime prevention. However, the diverging approach internationally to DNA retention illustrates the range of choices that are available. Briefly, the three primary choices involve: no retention, limited retention or comprehensive retention. The trend among international jurisdictions has been to adopt the ‘middle-ground’ approach of limited retention. For example, such an approach was promoted in Marper as being amenable under Article 8 of the ECHR. However, a difficulty with this ‘limited’ approach is that the current justifications for such an approach are lacking and underdeveloped. Moreover, the dearth of robust justifications has contributed to the phenomenon of ‘function creep’ and expansion that has been inherent in international DNA retention policies thus far.

In summary, prolonged and unjustified DNA retention is a socially repugnant practice. Unfortunately current international retention policies (including Ireland) are increasingly establishing such regimes. While casting the DNA retention ‘net’ as wide as possible may produce spectacular results on occasion, it is submitted that the ‘innocent have nothing to hide’ rhetoric that is often postulated by those in favour of this practice is not persuasive. Intrusion by the state must be justified, a justification which is not satisfied by the ‘chance’ that a retained DNA profile may match a future crime scene. As Justice McGuinness has eloquently stated ‘There has been sufficient miscarriages of justice in the history of crime in this and in other jurisdictions to indicate a belief that –the innocent have nothing to fear’ is not necessarily the whole answer.

As an alternative to the current approach it is submitted that the adoption of a ‘reflective’ approach to DNA retention provides a more suitable means of providing adequate justifications. Such an approach would prohibit systematic retention (based on conviction or offence categorisation). Instead it would attempt to locate clear justifications for prolonged retention (such as recidivism rates, independent research, offence type (from the perspective

---

1534 The Court agrees with the Government that the retention of fingerprint and DNA information pursues the legitimate purpose of the detection, and therefore, prevention of crime.’ S & Marper v UK (Applications nos 30562/04 and 30566/04); (2008) 48 EHRR 50, para. 100.
that a particular offence may often result in a discarded DNA sample being located, for example a sexual offence) and other relevant factors that may be pertinent to a particular case). Importantly, such an approach would be grounded upon a review and appeals process which would result in regular reviews being conducted to assess and verify the legitimacy of the continued retention of such a sample, while also allowing an appeal process that could challenge the perceived legitimacy of such a practice. Thus as Murphy observed a *narrowly composed, scrupulously maintained database* allows the state the opportunity to present a reasoned case for the retention of an individual’s genetic information, while an adequate appeals procedure and governance regime allows an independent/judicial body to examine the continued retention and safeguards surrounding an individual’s DNA. ¹⁵³⁸

Ironically the recent ECHR decision in *Marper* to limit the retention of DNA profiles on a database may perhaps result in police authorities turning to controversial police tactics and an increasing array of novel DNA techniques to utilise DNA evidence. Tactics such as DNA mass screens, surreptitious sampling, phenotype sampling and familial searching are a selection of the options being increasingly utilised by police. Of particularly concern is the growing prevalence of *back end* DNA databasing, such as familial DNA profiling. In essence the use of *back end* DNA profiling allows the police in the absence of any lead to *dig around* in an individual’s DNA searching for any useful lines of inquiry. It is submitted that all practices utilising DNA during the criminal process should be subject to strict regulation and oversight within a comprehensive framework, including novel DNA techniques such as familial and phenotype searching.

The *reflective* framework provides an ideal mechanism to encompass novel and developing DNA techniques. For example, the organic nature of the approach would endeavour to adapt and evolve with the technology ensuring that those in favour of the technique (such as the police) will be afforded the opportunity to present a case to why such a technique or procedure should be utilised. However, importantly, the framework would also afford stakeholders (such as human rights advocates and ethical groups) to raise and outline the concerns involved in allowing the application of the technique. Thus this *measured* approach allows the use of a procedure if adequate justifications for its application can be proffered but ensures that safeguards and codes of conduct are automatically amended to ensure those targeted by the process are continually protected.

8.3. Governance

While we can all celebrate the use of DNA technology to bring perpetrators to justice, given the sensitivity of the material involved (access to an individual’s genome), it is vital that the methods of collection, retention and use are clearly and coherently outlined in an all-encompassing 'regulatory' framework.

Central to the success or failure of any policing regime is the concept of governance. 'Good governance' in the area of DNA profiling and criminal process is still in the nascent stages of its development. Thus this thesis has avoided adopting an overly prescriptive approach to governance; it has instead proffered that two overarching principles which will be essential in securing and maintaining public confidence and trust in this technology, namely integrity and public discourse.1539

Within the concept of integrity, it will be vital to ensure both the integrity of the information involved and the integrity of the system involved. The integrity of the information can be secured by ensuring that adequate safeguards (such as codes of best practice and secure storage mechanisms) are established. In relation to the system, it will be imperative that any procedures or policies in this area should be underpinned by transparency and the appropriate checks and balances (preferably by an independent oversight body). A benefit of the 'reflective' approach is that it enables the protections to evolve with the developments in the science, technology and police practices thus aspiring to organically protect those targeted by the process. Thus as Murphy neatly observes, governance of 'sophisticated technological methods of investigation call for sophisticated means of coordination and control'.1540

It is essential that a regime involving the collection, retention and use of DNA profiling within the criminal process is combined with an active and ongoing public debate. Given the sensitive information involved, public trust is vital for the longevity and continued legitimacy of any DNA regime. It is important that the public is not only fully informed on any government policy that involves the use of this technology but also that the public is allowed,

1539 The social context is important to consider as Cole observes 'identification methods do not flourish and become widely accepted solely on technical grounds. The acceptance of a new identifier as useful and reliable occurs within a particular social, cultural, and historical context'. See Cole SA, Suspect Identities: A History of Fingerprinting and Criminal Identification (Harvard University Press 2001), 293.
encouraged and facilitated in actively engaging in the dialogue surrounding the current and future use of this technology.

Importantly though such a debate must take place within context. While it is impossible to predict the future with a degree of certainty it is submitted that the world in which we now reside has become so intertwined with technology that it is difficult to perceive a world in which we would begin to reduce our reliance upon it. Thus it is important not to consider the DNA debate in isolation but within the current parameters of society’s modern technological milieu. Within this environment it is likely that advances in science and technology will continue to unravel the inner workings of the human genome. Improvements in genetic science will continue to uncover a myriad of information about individuals, inter alia, susceptibility to disease, and predisposition to particular traits and familial relationships. The potential benefits of these scientific discoveries though create concomitant potential costs, particularly within private industry around the issues of access and how such developments should be utilised. Thus the need to create adequate protections and frameworks to prevent the abuse of our genetic information will become increasingly important.1541

A danger within modern society is that as technology increases and the use of genetic technology continues to permeate our everyday lives our perception of genetic technology may become normalised. As Marx observes once DNA analysis comes to be seen as a familiar and benign crime control tactic, the way will be paved for more controversial uses.1542 Similarly the UK Human Genetics Commission notes it is clear that the language of genetics is becoming more familiar through its use in everyday contexts, for example, there is wider exposure to genetic information through the mainstream media, the public’s general understanding of the role of genes is improving and people’s expectations are becoming more realistic.1543 As a result of this growing familiarity both the Human Genetics Commission and the findings of a Citizens Inquiry in the UK recommend that a programme of public genetic education should be undertaken which should be aimed at the general public.

---

1541 Presently the use of genetic tests within the private sector is limited to specific use: for example, to diagnose a particular genetic condition or to verify a biological relationship. However, as the technology continues to develop and increasing DNA sequences become un-sequenced, the utility for genetic testing for employers and insurance companies will become increasingly desirable. For example the UK Human Genetics Commission reported in a 2005 report (Profiling the Newborn: a prospective gene technology) that private genetic profiling, to reveal an individual’s personal genetic information, would become commercially feasible within the next 20 years. See Human Genetics Commission, Profiling the Newborn: a prospective gene technology (2005).

1542 Marx G, ‘DNA Fingerprints may one day be our national ID card’ Wall Street Journal (20 April 1998).

1543 Human Genetics Commission, Nothing to Hide, Nothing to Fear’ Balancing individual rights and the public interest in the governance of the national DNA database (November, 2009), 87.
(with an emphasis on those involved in the criminal process, i.e. police, legal professionals, judiciary and jurors) on the implications, use and current misrepresentations of genetic technology.\textsuperscript{1544}

\textbf{8.4. Conclusion}

To conclude it is submitted that given the potential utility of DNA profiling for the criminal process combined with the technological society in which we now reside that it is unlikely that we will now stop utilising this technology. Thus we should now focus our efforts upon choosing a robust, organic, justified and socially acceptable approach for its application. This thesis offers an all encompassing ‘reflective’ regulatory framework as an appropriate choice.

\textsuperscript{1544} Ibid. See also UK Citizens Inquiry (2008), 17–18 (recs 1 and 2), 25 (rec. 11) and 29 (recs 16 and 17).
Appendices
8.5. Appendix 1

<table>
<thead>
<tr>
<th>Bodily Fluid/Tissue</th>
<th>Location of DNA</th>
<th>Typical Items Examined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood</td>
<td>White blood cells (leukocytes) contain DNA; human red blood cells (erythrocytes) do not.</td>
<td>Clothing, weapons, scene stains and various items in cases where blood has been shed.</td>
</tr>
<tr>
<td>Semen</td>
<td>Spermatozoa, which are 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.</td>
<td>Orifice (oral, vaginal, rectal) and surface (skin) swabs from complainants in sexual assault cases, undergarments, clothing, bedding, condoms.</td>
</tr>
<tr>
<td>Saliva</td>
<td>Buccal cells lining the oral cavity.</td>
<td>Cigarette butts, used tissues, chewing gum, toothbrushes, stamps and envelope flaps, swabs of bite marks, beer bottles, balaclavas, scarves, eating and drinking utensils, dentures.</td>
</tr>
<tr>
<td>Vaginal Secretions</td>
<td>Cells lining the vaginal cavity.</td>
<td>Condoms, underclothing, penile swabs, insertion objects.</td>
</tr>
<tr>
<td>Skin</td>
<td>Sloughed off skin cells, dandruff.</td>
<td>Clothing, fingernail scrapings.</td>
</tr>
<tr>
<td>Hair Roots</td>
<td>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.</td>
<td>Pulled scalp, facial or pubic hairs.</td>
</tr>
<tr>
<td>Urine</td>
<td>Urine (usually a poor source</td>
<td>Clothing, bedding, neat</td>
</tr>
<tr>
<td>Bodily Fluid/Tissue</td>
<td>Location of DNA</td>
<td>Typical Items Examined</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------</td>
<td>------------------------</td>
</tr>
<tr>
<td></td>
<td>of DNA; it may contain relatively few epithelial cells.</td>
<td>(undiluted) urine samples submitted for drug testing.</td>
</tr>
<tr>
<td>Faeces</td>
<td>Faeces (a relatively poor source of DNA; it may contain some epithelial cells from the intestine and rectum).</td>
<td>Faeces, clothing, bedding.</td>
</tr>
<tr>
<td>Bones</td>
<td>Bone marrow</td>
<td>Skeletal remains.</td>
</tr>
<tr>
<td>Teeth</td>
<td>Tooth pulp</td>
<td>Skeletal remains.</td>
</tr>
<tr>
<td>Nasal Secretions</td>
<td>Epithelial cells lining the nasal and sinus cavities.</td>
<td>Tissues, paper towels, clothing.</td>
</tr>
<tr>
<td>Vomitus</td>
<td>Epithelial cells lining the oesophagus and mouth.</td>
<td>Vomitus, clothing, rugs.</td>
</tr>
<tr>
<td>Other</td>
<td>Cells from any tissues or organs.</td>
<td>Remains from mass disasters, biopsy or other hospital-related samples, contact lenses.</td>
</tr>
</tbody>
</table>
8.6. Appendix 2

Available STR kits

<table>
<thead>
<tr>
<th>Name</th>
<th>Source</th>
<th>Release Date</th>
<th>STR Loci Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>TH01, TPOX, CSFIPO monoplexes (silver stain)</td>
<td>Promega</td>
<td>Feb 1993</td>
<td>TH01, TPOX, CSFIPO</td>
</tr>
<tr>
<td>AmpF/STR Blue</td>
<td>Applied Biosystems</td>
<td>Oct 1996</td>
<td>D3S1358, VWA, FGA</td>
</tr>
<tr>
<td>AmpF/STR Green 1</td>
<td>Applied Biosystems</td>
<td>Jan 1997</td>
<td>Amelogenin, TH01, TPOX, CSFIPO</td>
</tr>
<tr>
<td>CTTv</td>
<td>Promega</td>
<td>Jan 1997</td>
<td>CSFIPO, TPOX, TH01, VWA</td>
</tr>
<tr>
<td>FFFL</td>
<td>Promega</td>
<td>Jan 1997</td>
<td>F13A1, FES/ESP, F13B, LPL</td>
</tr>
<tr>
<td>GammaSTR</td>
<td>Promega</td>
<td>Jan 1997</td>
<td>D16S593, D13S317, D7S820, D5S818</td>
</tr>
</tbody>
</table>
### Summary of ENFSI Report

<table>
<thead>
<tr>
<th>Country</th>
<th>Crime Scene Samples (SOC)</th>
<th>CJ Profiles Criteria</th>
<th>Removal</th>
<th>CJ Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Yes</td>
<td>Convicted offenders Those suspected of serious offences</td>
<td>Convict – Indefinite Suspect – suspect must apply for removal; if acquitted</td>
<td>Sample retained</td>
</tr>
<tr>
<td>Belgium</td>
<td>Any stain can be entered if requested by a magistrate</td>
<td>Those convicted of specific offences No suspect database</td>
<td>Convict – 10 years after death of offender Suspect – N/A</td>
<td>Sample destroyed immediately once profile is obtained</td>
</tr>
<tr>
<td>Croatia</td>
<td>Stains from unexplained crime scenes only</td>
<td>All convicted offenders are included except misdemeanants. Comparative samples may be obtained from suspects but may only be loaded on to the database if charged with a crime</td>
<td>Convict – Profiles subject to 3 year review; removed after 80 years Suspect – N/A</td>
<td>No specific legislation in relation to sample retention</td>
</tr>
<tr>
<td>Czech Rep.</td>
<td>All unknown biological samples taken from a crime scene.</td>
<td>Samples taken from those convicted and arrested of specific enumerated offences: sexual offences, crimes against humanity, terrorism, robbery, deliberate violence, torture, possession of stolen goods, counterfeit money, money laundering, narcotic traffic, all crimes</td>
<td>Convict – 40 years after the end of sentence or when individual reaches age limit (80 years old) Suspect – profile removal must be asked by prosecutors or by the suspect when the storage of the profile is not useful anymore (charges dropped)</td>
<td>Sample retained for 40 years after sentence or until individual reaches 80. Suspect sample is returned to magistrate and retained as evidence</td>
</tr>
<tr>
<td>Country</td>
<td>Crime Scene Samples (SOC)</td>
<td>CJ Profiles Criteria</td>
<td>CJ Samples</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------</td>
<td>----------------------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>Legally, all stain profiles can be entered into the database. In practice, the minimum number of loci required is six and mixture profiles with more than two persons are not entered.</td>
<td>Samples taken from those convicted of specific enumerated offences: rape, sexual assault, statutory rape, child enticement, homicide, murder, manslaughter, aggravated assault/robbery/coercion/drug offences. Those arrested for offences with a prison term exceeding one year will have profile entered on the database.</td>
<td>Convict – one year after death of offender. Suspect – sample must be destroyed and profile removed one year from the time controller of the file is notified by prosecutor that there is no evidence of an offence, charges have been dismissed or judgment or sentence has been nullified. Sample destruction is tied to profile removal.</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>Enumerated offences only and analysis must be ordered by a judge. Enumerated offences include: all crimes against life (murder etc), terrorism, all offences against sexual integrity, offences against liberty (kidnap), all robbery and blackmail, assault and battery, burglary and vehicle theft, actionable fire, other crimes if they fit.</td>
<td>Both convicts and suspects must be deemed a danger to commit an enumerated offence in the future by the police. Enumerated offences include: all crimes against life (murder), terrorism, all offences against sexual integrity, all offences against liberty (kidnap), all robbery and blackmail, assault and battery, burglary and vehicle theft, actionable fire, other crimes if they fit the criteria of a serious crime.</td>
<td>Convict – datasets checked after 10 years for adults, 5 years for juveniles. Retention period extended if it is deemed individual is likely to reoffend. Indefinite retention for those convicted of serious offences such as murder/rape. Suspect – same as convict. Sample destroyed immediately once profile is obtained. Unless required for casework purposes.</td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>Crime Scene Samples (SOC)</td>
<td>CJ Profiles Criteria Entry</td>
<td>Removal</td>
<td>CJ Samples</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------</td>
<td>----------------------------</td>
<td>----------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>Yes</td>
<td>Convicted Offenders</td>
<td>Convict – upon death</td>
<td>Convict upon death; suspect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspects DNA is entered on</td>
<td>Suspect – upon acquittal</td>
<td>upon acquittal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the database when there</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>are serious indications</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>the person has carried</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>out the offence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td>Yes</td>
<td>Those convicted and</td>
<td>Convict – 20 year after</td>
<td>May retain sample, tied</td>
</tr>
<tr>
<td></td>
<td></td>
<td>suspected of a crime</td>
<td>expiry of sentence</td>
<td>profile requirements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>punishable by more than</td>
<td>Suspect – upon acquittal</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 years or enumerated</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>offences. No retroactive</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>entry of convicted</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>offenders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td></td>
<td>Those convicted and</td>
<td>Convict – indefinite</td>
<td>Will be retained for 3 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>suspected of relevant</td>
<td>Suspect – 10 years; 5 years</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>offences. Relevant</td>
<td>juveniles</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>offences predominately</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>consist of offences</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>exceeding 5 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Republic of Ireland</td>
<td>Yes (proposed by</td>
<td>For those convicted</td>
<td>Convict – sentences 4r to 6</td>
<td>Biological sample is stored as</td>
</tr>
<tr>
<td></td>
<td>legislation)</td>
<td>profile entry is based on</td>
<td>years, 20 years; sentences</td>
<td>long as profile is retained</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the potential length of</td>
<td>over 6 years, 30 years Suspect –</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>sentence over 4 years. The</td>
<td>only on conviction</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>sample must have been</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>taken during original</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>investigation. Suspect</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>entry is based on the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>potential length of</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>Yes but subject to time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>limit, 18 years. Must be</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>removed upon conviction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>Crime Scene Samples (SOC)</td>
<td>CJ Profiles Criteria</td>
<td>Removal</td>
<td>CJ Samples</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Norway</td>
<td></td>
<td>sentence over 4 years. The prosecutor or investigative judge must find that the test could lead to the resolution of the case</td>
<td>Convict – profiles must be removed within 2 years of offender's death or if case is reopened and the person is subsequently proven innocent</td>
<td>Sample must be destroyed when profile is entered into the database</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>Yes</td>
<td>Those suspected and convicted of recordable offences. A recordable offence is that which could result in a custodial sentence</td>
<td>Convict – no legal requirement for expungement. Profiles of those dead or over 100 years of age are removed as an administrative exercise. Suspect – same as convict</td>
<td>No legal requirement to destroy samples</td>
</tr>
<tr>
<td>Portugal</td>
<td>Yes</td>
<td>Those convicted of an offence carrying a sentence of more than 3 years. No suspect database</td>
<td>Convict – no retention Suspect – n/a</td>
<td>No retention</td>
</tr>
<tr>
<td>Poland</td>
<td>Yes</td>
<td>Profiles from persons listed in Article 74 and 192a of the Code of Criminal Proceedings includes elimination, suspect, accused and convicted but only upon order of court or territorially competent Police Authority</td>
<td>Retained as long as profile is retained</td>
<td>Retained as long as profile is retained</td>
</tr>
<tr>
<td>Scotland</td>
<td>Yes</td>
<td>Those arrested or convicted of a recordable offence</td>
<td>Convict – indefinite Suspect – 3 years serious offences; 2 further years on</td>
<td>Samples retained indefinitely</td>
</tr>
<tr>
<td>Country</td>
<td>Crime Scene Samples (SOC)</td>
<td>Entry</td>
<td>CJ Profiles Criteria</td>
<td>Removal</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Application to Sheriff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>Yes</td>
<td>Those arrested and suspected of particular offences</td>
<td></td>
<td>Once time for possible counter analysis has expired, samples will be destroyed with judicial authorisation</td>
</tr>
<tr>
<td>Sweden</td>
<td>Yes</td>
<td>Those convicted of offences carrying sentences of 2 years or more; All suspects</td>
<td>Convict – 10 years after sentence is served</td>
<td>Saved for 2 years</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Yes</td>
<td>Those convicted of offences carrying sentences of one year or more; Anyone suspected of a malfeasance or a crime</td>
<td>Convict – 30 years if the person is not convicted again. If the person is dead upon request. Twenty years after discharge or after fulfillment of therapeutic measures. Suspects – One year after acquittal or charges being dropped</td>
<td>All samples and attached DNA must be destroyed within 3 months of the profile being entered into the database and sample is no longer needed for comparison purposes</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Yes</td>
<td>All those convicted or arrested for a recordable offence</td>
<td>Convict – Indefinite retention Suspect – law allows for the indefinite retention of suspects profiles even if the suspect is released or acquitted</td>
<td>Law allows for retention of all legally obtained samples indefinitely</td>
</tr>
</tbody>
</table>
Reference Scheme

This citation guide used was OSCOLA which was devised by the Faculty of Law at Oxford.

Available at: http://www.legalcitation.ie/page5/files/OSCOLA%20Ireland%202011.pdf
Bibliography

Books:


Garland D and Sparks R (eds.), *Criminology and Social Theory* (Oxford University Press 2000).


Wall WJ, *Genetics and DNA Technology: Legal Aspects* (Cavendish 2002).


**Articles/Book chapters:**


Avery O, MacLeod C, McCarthy M, –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.


Charkraborty R and Ge J, "Statistical Weight of a DNA Match in Cold Hit Cases” (2009) 11 Forensic Science Communications 3.


Daly YM, “Unconstitutionally Obtained Evidence in Ireland: Protectionism, Deterrence and the Winds of Change” (2009) 19(2) ICLJ 40.


Fennell C, "Beyond Reasonable Doubt: DNA Fingerprinting on Trial" (1990) 8 ILT 227.

Fennell C, "DNA Profiling: hidden agendas” (1991) 1(1) ICLJ 34.


Gross H, "The Concept of Privacy” (1967) 42 NYUL Rev 34.


McConville M, Sanders A and Leng R, "Descriptive or Critical Sociology: The Choice is Yours” (1997) 37(3) British Journal of Criminology 347.


Saunders A and Young R “From Suspect to Trial” in Maguire M, Morgan R and Reiner R The Oxford Handbook of Criminology (Oxford University Press 2007).


Taylor BL, –Storing DNA Samples of Non-convicted persons & the debate over DNA database expansion” (2003) 20 TM Cooley L Rev 509.


Williamson R and Duncan R, “DNA testing for all: There are two fair possibilities for forensic DNA testing: everyone or no one” (2002) 418 Nature 585.


Zedner L, "Terrorism, the ticking bomb and criminal justice values” (2008) 73 Criminal Justice Matters 18.


Reports:


Genewatch (UK), Response to the Northern Ireland Department of Justice Consultation on Proposals for the Retention and Destruction of Fingerprints and DNA in Northern Ireland (June 2011). Available at: http://www.genewatch.org/uploads.


House of Lords Select Committee on Science and Technology *Human Genetic Databases: Challenges and Opportunities* (HL Paper 57, 2001).


Human Genetics Commission (UK), *Nothing to Hide, Nothing to Fear: Balancing individual rights and the public interest in the governance and use of the National DNA Database* (November 2009).


Scottish Government, *Consultation on the Acquisition and Retention of DNA and Fingerprint Data in Scotland* (February 2009).


**Speeches/press release:**


American Civil Liberties Union of Northern California, –ACLU Lawsuit Challenges California’s Mandatory DNA Collection at Arrest” (7 October 2009).


Newspaper/blog:


→Forensic Science Service to be wound up” BBC News (14 December 2010). Available at: http://www.bbc.co.uk/news/uk-11989225.

→Inquiry into HIV court blunder” BBC News (25 May 2004).

→New DNA sequences discovered” Drug Discovery & Development (21 April 2010).

→Witness told in court he has HIV” The Guardian (25 May 2004).


→Judge allows DNA evidence in Massereene trial” RTE News (1 December 2011).

→Legislation to pave way for DNA database” The Irish Examiner (19 June 2010).
Massereene judge to rule on Dr. Mark Perlin’s DNA evidence” BBC News (1 December 2011).

Mueller defends crime lab after questionable DNA Tests” USA Today (1 May 2003).


Republican guilty of Massereene barracks murders” The Independent (UK) (20 January 2012).

Silent Witness: Police find DNA link in murders of school pupil and Bunny girl” The Daily Mail (27 September 2007).


Brady T, Gardai get new powers to collect DNA from bodies” The Independent (21 December 2009).

Breslin J, McDowell seeks to ‘maximise‘ use of DNA database’ The Irish Examiner (16 November 2005).


Cusack J, DNA screening of men in hunt for blaze killer” Irish Independent (4 January 2009).


Fowler R, “DNA, the second revolution” *The Observer* (27 April 2003).


Highfield R, “How the science of DNA fingerprinting was born” *The Telegraph* (25 May 2010).


Kennedy EB, “Decoding of DNA may unlock the hidden medical histories of Irish lives” *The Irish Times* (2 September 2010).


Lally C, “Civilian staff set to end three-year dispute over €23 fingerprint system” *The Irish Times* (6 February 2012).


McKie R, “Axing of Forensic Science Service may lead to rise in miscarriages of justice, scientists warn” *The Observer* (12 February 2012).

McKie R, “Eureka moment that led to the discovery of DNA fingerprinting” *The Observer* (May, 24, 2009).


Morris N, “Mother claims son killed himself after DNA profile taken” *The Independent (UK)* (8 August 2010).


O’Connell D, “DNA database would pose threat to our civil liberties” The Irish Times (27 August 2003).

O’Keeffe C, “Gardai renew call for DNA database” The Irish Examiner (22 August 2011).

O’Riordan S, “Legislation set to enhance fraud bureau’s power” The Irish Examiner (14 April 2011).

O’Sullivan C, “Ireland could share fingerprint data with US” The Irish Examiner (08 February 2012).


Radowitz JV, “DNA discovery could make chocolate even more irresistible” The Irish Examiner (27 December 2010).

Rice H, “Man found hanging in cell after arrest for 1990 rape” Houston Chronicle (10 May 2010).


Travis A, “Police routinely arresting to get DNA, inquiry told” The Guardian (24 November 2009).


Williams C, “Appeals court upholds DNA testing of felony suspects” LA Times (24 February 2012).


Youssef M, “DNA database set to start in a year” The National (7 October 2009).

**Websites:**

Council for responsible genetics, http://www.councilforresponsiblegenetics.org/

David H. Kaye's Legal Writings on Forensic DNA: http://homepages.law.asu.edu/~kayed/


DNA Applications for Forensics and Field Research : http://genetics.nbii.gov/forensics.html

DNA Forensics News and Information about DNA Databases http://www.dnaforensics.com/

DNA Resource: http://www.dnaresource.com/


Eolaíocht Fhóiréinseach Éireann (EFÉ), http://www.forensicscience.ie/


Interpol DNA Profiling: [http://www.interpol.int/Public/Forensic/DNA/Default.asp](http://www.interpol.int/Public/Forensic/DNA/Default.asp)


Principles of Forensic DNA for Officers of the Court: [http://www.dna.gov/training/otc/](http://www.dna.gov/training/otc/)


The Denver DA’s Office and the Denver Police Department: [http://www.dna.gov/uses/solving-crimes/cold_cases/denver](http://www.dna.gov/uses/solving-crimes/cold_cases/denver)

UK Forensic Science Service: [www.forensic.gov.uk](http://www.forensic.gov.uk)
