

# Chapter 4

Criminal investigation





# Criminal investigation

## Introduction

- 4.1 Since the first use of a fingerprint in a criminal investigation over a century ago, the forensic use of bioinformation has been invaluable in assisting in the detection and prosecution of crime. Many crimes may not have been solved, or successfully prosecuted, by any other means. Developments in science and technology are increasingly harnessed for the benefit of policing, and are used by prosecution authorities domestically and internationally, in investigations ranging from minor thefts to major terrorist attacks. In addition to the identifications made using the fingerprint database, the National DNA Database (NDNAD) Annual Report 2005–2006 states that between May 2001 and March 2006 there were 182,612 matches between crime scene samples and subject profiles, identifying 165,099 separate individuals who may have been associated with a crime scene. In 2005–06 alone, subject samples were matched with 49,247 crime scene samples. Although only a proportion of fingerprint identifications and DNA profile matches will have resulted in successful prosecutions, it cannot be doubted that many criminals have been, and will continue to be, caught and convicted through the use of forensic bioinformation.
- 4.2 In this chapter, we consider the ways in which bioinformation is collected and retained for use during criminal investigations. We draw attention to some of the criticisms over the means by which the bioinformation databases have grown, drawing particular attention to issues of consent, equal treatment, the position of minors and the administration of justice. It will be necessary to draw some clear distinctions between situations where the use and retention of DNA profiles or fingerprints does not raise serious ethical issues, but the use or retention of biological samples does raise such issues.

## The collection of bioinformation

### *Fingerprinting*

- 4.3 In England and Wales, the 1891 Penal Servitude Act first provided for the measuring, photographing and fingerprinting of convicted prisoners.<sup>1</sup> Those on remand could only be fingerprinted after a warrant permitting their fingerprints to be taken had been issued by a magistrate, and if they were not subsequently convicted of an offence, their fingerprints were to be destroyed.<sup>2</sup> The call for powers to fingerprint suspects before conviction was not responded to until the Criminal Justice Act of 1948. While concerns were expressed about the extension of powers, the act of taking fingerprints itself was deemed ‘unobjectionable’ with the now common adage ‘only the guilty need worry’, used in Parliamentary debate. The requirement to destroy fingerprint records if the person was acquitted remained until the Criminal Justice Act 1967 (which also extended fingerprinting to palms). Police were increasingly frustrated, however, by the continuing requirement to gain the authority of a magistrate to take fingerprints, which was not removed until 1984.
- 4.4 The enactment in England and Wales of the Police and Criminal Evidence Act (PACE) in 1984 finally granted the police power to take fingerprints without consent if there were reasonable grounds for suspecting the involvement of that person in a criminal offence, and fingerprints would tend to prove or disprove his or her involvement or facilitate the ascertainment of his or

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1. Regulations for the Measuring and Photography of Criminal Prisoners, SR & O 1896/762. This provision was continued by the Prison Act 1952 ss16 and 54(3).

2. Leigh LH (1985) *Police Powers in England and Wales*, 2<sup>nd</sup> Edition (London: Butterworths), p228.

her identity.<sup>3</sup> The Criminal Justice Act 2003 extended these powers to allow the taking of fingerprints without consent upon arrest for a recordable offence. Reasonable force can be used to take fingerprints after arrest, charge or conviction. In view of the high proportion of crime committed by young offenders, it was considered important to be able to compulsorily fingerprint suspects regardless of their age. Scottish police forces are also able to take fingerprints without consent on arrest. Moreover, the Police, Public Order and Criminal Justice (Scotland) Act 2006 brought Scotland into line with England and Wales by allowing police officers to take someone's fingerprints, in any place, on suspicion of a criminal offence and in order to verify identity (to facilitate mobile fingerprinting technology – see Box 4.1). It is an offence to refuse in such circumstances, but the police cannot retain such prints once identity has been confirmed.<sup>4</sup>

#### Box 4.1: Mobile fingerprinting – Project Lantern

Ten police forces have been testing mobile fingerprint readers in 'Project Lantern': Bedfordshire, Essex, Hertfordshire, Lancashire, North Wales, Northamptonshire, West Midlands and West Yorkshire, as well as British Transport Police and the Metropolitan Police. Project Lantern enables confirmation of driver details when police are carrying out a vehicle check, in collaboration with automatic number plate recognition (ANPR). When police in the pilot areas stop motorists and request verification of their identity, they can ask the motorist to volunteer for a fingerprint check to see if their prints are present on the police fingerprint database, IDENT1. If their fingerprints are located on the database then the police are able to confirm the identity of the individual and ascertain whether there are any outstanding warrants for their arrest, or other details, such as whether they are currently subject to a driving ban. The handheld devices take impressions from the two index fingers of the individual, which can then be checked against the fingerprint database (the crime scene database is not searched). These impressions are not stored, and simply assist the officer, by confirming identity, or by suggesting the driver has provided false details. If the motorist refuses to consent then the officer may find reasonable suspicion sufficient to permit the arrest of the individual, resulting in their fingerprints and DNA being taken at a police station.<sup>5</sup>

Mobile fingerprint devices have also been used in support of police operations at railway stations by transport police. In one operation, where individuals had been stopped and found with knives or other illegal items in their possession, their fingerprints were checked against the national database in an attempt to verify their identity and check whether there were outstanding police matters for which they were sought.

- 4.5 Fingerprints are now ordinarily obtained using 'LIVESCAN' consoles. The objectives behind the investment in this technology were primarily to: confirm a detainee's identity prior to release (the Metropolitan police have found since installing LIVESCAN, that four per cent of arrestees were providing false details); establish innocence as quickly as possible; link offences to individuals; and identify people with outstanding warrants for their arrest. Each month, more than 100,000 sets of fingerprints are checked upon arrest, and 80,000 marks found at scenes of crimes are searched against IDENT1 (the fingerprint database), with on average 6,000 identifications made (see paragraphs 4.24–4.27). This automated process has dramatically shortened the time taken to perform identifications and circumvents the need to rely upon an arrestee's honesty in giving details of their identity.
- 4.6 The collection of fingerprints from suspects without consent appears to be widely accepted. Fingerprint recognition systems are proliferating in civil society, to confirm identity, particularly at international borders, and for financial transactions and access control systems. Recent controversy has surrounded the establishment of fingerprint databases in some schools, where they have been introduced to school libraries and canteens. These databases have spread throughout the United Kingdom and elsewhere. This is now being examined by the Government.<sup>6</sup>

3. Authorisation can only be given for the purposes of identification if the person refuses to identify themselves or the officer has reasonable grounds to suspect that he is not who he claims to be: s61(4a). Consent must be given in writing at the police station or can be oral if given elsewhere (s61(2)).

4. S.82 of the 2006 Act.

5. For further information from the National Policing Improvement Agency on Project Lantern, see <http://www.npia.police.uk/en/5971.htm>, accessed on: 4 July 2007.

6. Jim Knight MP stated in the House of Commons on 29 January 2007 (Hansard, column 68W) that the Department of Education and Skills was consulting the Office of the Information Commissioner and the British Educational Communications and Technology Agency (Becta) about the use of biometric technologies in schools.

- 4.7 The limited use of mobile fingerprinting means that at present in the United Kingdom, citizens are not yet regularly fingerprinted at the roadside or elsewhere. This may change if the Home Office proposals of March 2007<sup>7</sup> were introduced. These include extending the power to take fingerprints and biological samples without consent immediately from those arrested for a (currently) non-recordable offence. This would mean that individuals would increasingly be fingerprinted and sampled in locations other than police custody suites, and for more minor offences.
- 4.8 Alongside the investment in DNA technology, the Government has invested approximately £10 million in IDENT1 since 2000. The increase in attendance of Scenes of Crimes Officers (SOCOs) at crime scenes, one of the central aims of the DNA Expansion Programme, has led to a five per cent increase in fingerprints being yielded from crime scenes (in contrast to a three per cent increase in biological sample yields). However, although fingerprints are more readily located at crime scenes, there is a greater 'attrition' rate, with fewer fingerprint yields resulting in a detection (only ten per cent of crime scenes yielding fingerprints result in a fingerprint detection, compared with 20 per cent for biological samples). These results have led to calls for further investment to improve fingerprint detection rates, which could be more cost-effective than further investment in DNA technology.<sup>8</sup>

### ***Taking biological samples***

- 4.9 When the police first began using 'DNA fingerprinting' (see paragraph 2.9), consent was required before biological samples could be taken. However, it became clear that this novel technique could be used more widely if powers were made available to take biological samples without consent. A succession of Acts of Parliament and amendments has eased restrictions on the police discretionary power to take biological samples. The Police and Criminal Evidence Act (PACE) 1984 specified limited police powers to compel criminal suspects to provide samples, differentiating between 'intimate' and 'non-intimate' samples. An intimate sample, which could be taken only with consent, was defined as a sample of blood, semen or any other tissue, fluid, urine, saliva or pubic hair, or a swab taken from a bodily orifice. However, where consent was refused, juries or courts were entitled to draw from this refusal any inferences they deemed appropriate, and to treat the refusal as supporting other prosecution evidence.
- 4.10 A non-intimate sample was defined as 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 bodily orifice, a footprint or a similar impression of any part of the body other than a part of the hand (fingerprints were treated separately). Non-intimate samples could only be taken without consent on the authority of an officer of at least superintendent rank who had reasonable grounds for suspecting the involvement of the individual in a serious arrestable offence (see Box 1.2) and who believed that the sample would tend to confirm or disprove this involvement.
- 4.11 The Criminal Justice and Public Order Act (1994) (CJPOA) extended police powers in two important ways: first, by enlarging their scope to obtain and retain samples and, secondly, by making specific provisions for the speculative searching of the profiles derived from such samples. In relation to the first, the Act redefined mouth samples as non-intimate and empowered the police to take them without consent; it also permitted non-intimate samples to be taken without consent from individuals arrested in connection with the investigation of any 'recordable offence' (as opposed to a 'serious offence' – see Box 1.2). This provision radically widened the 'pool' of criminal suspects from whom samples could be taken and, as a result, when the NDNAD 'went live' on 10 April 1995 it was quickly populated with a large number of

7. Contained in the consultation document *Modernising Police Powers: Review of the Police and Criminal Evidence Act*.

8. Home Office (2005) *DNA Expansion Programme 2000–2005: Reporting achievement* (Forensic Science and Pathology Unit).

DNA profiles.<sup>9</sup> However, the Act also specified that subject samples and profiles obtained from those suspects who had been sampled upon arrest but were subsequently not convicted of a recordable offence were to be removed from the NDNAD.

- 4.12 The two most significant pieces of legislation since the CJPOA have been the Criminal Justice & Police Act 2001 (CJPA) and the Criminal Justice Act 2003 (CJA). Each of these has further extended the retention regimes that underlie the growth of the NDNAD. The first permitted the indefinite retention and speculative searching of the samples and profiles of all individuals who had been charged with but not necessarily convicted of a recordable offence. The second Act granted powers to take and retain samples from individuals arrested but not necessarily subsequently charged or convicted in connection with a recordable offence. The retention and use of bioinformation from a category of persons who had been subject to police suspicion but whose guilt has not been determined through any judicial process marks an important shift in the relationship between such individuals and the state.
- 4.13 This means the one-time suspect who may never have been charged and who has no criminal record can now have their DNA profile permanently loaded onto the NDNAD and their biological sample stored. The number of such individuals is considerable: 300,000 are arrested each year in connection with a recordable offence but not subsequently charged. At the end of November 2005, there were 139,463 profiles on the NDNAD that related to individuals who were not subsequently charged or cautioned (this included 15,116 volunteers). At that time, this represented around 4.5 per cent of the total number of profiles on the NDNAD.<sup>10</sup>
- 4.14 The case of *Marper* signalled judicial approval of the exercise of police powers to take samples up to, and including, the Criminal Justice and Police Act 2001 (see Box 3.1). The House of Lords decided, in the words of Lord Steyn, that “the taking of fingerprints and [DNA] samples from persons suspected of having committed relevant offences is a reasonable and proportionate response to the scourge of serious crime”. The case originated before the Criminal Justice Act 2003 (which changed sampling and retention powers) and the Serious Organised Crime Act 2005 (which changed the police arrest powers – see Box 1.2) came into force. There have not since been any legal challenges to the new powers under the 2003 and 2005 legislation.
- 4.15 In its submission to our consultation, Liberty (the National Council for Civil Liberties) acknowledged that “there are many legitimate reasons why the police may need to take a suspect’s fingerprints or DNA during the course of a criminal investigation. This information could, for example help the police to determine whether a suspect was at a crime scene and/or to confirm a person’s identity.” However, Liberty also highlighted examples of where unnecessary distress or embarrassment was caused in the way samples were taken.
- 4.16 In taking samples, it is essential that proper ethical standards are observed. For example, samples should not be taken at a time or place that is likely to cause unnecessary inconvenience or distress to the person concerned; the least intrusive method of taking a sample (e.g. a mouth swab) should be used; and particular sensitivity should be shown to vulnerable people particularly minors and others without the capacity to consent.
- 4.17 Upon arrest for a recordable offence, it is necessary for the police to be able to establish accurately the identity of the individual and it may be essential for the police to obtain fingerprints or a DNA profile to investigate criminal activity that may have been carried out by the arrested individual. An individual arrested for a recordable offence can expect limits to be placed on their liberty and autonomy while the police conduct these necessary inquiries. **It is our view that the authority to take (for impending use in criminal investigation) fingerprints and**

9. In 1995/6, 39,712 subject profiles and 2,881 crime scene profiles were added to the NDNAD.

10. Andy Burnham MP, Hansard, 20 December 2005, column 2890W.

biological samples without consent from those who are arrested on suspicion of involvement in any recordable offence is proportionate to the aim of detecting and prosecuting crime. At the same time, we note that the distinction between recordable and non-recordable offences is to some extent arbitrary (e.g. failing to give advance notice of a procession is recordable, but obstruction of the highway is not). We recommend that the list of recordable offences for which fingerprints and biological samples can be taken from arrestees should be rationalised so as to exclude all minor, non-imprisonable offences.

- 4.18 The Home Office proposals released in March 2007 include the possibility of abolishing the criteria of 'recordable offence' and permitting the taking of fingerprints and biological samples from anyone arrested in order to "populate identification databases and remove unnecessary operational constraints on the extent to which police are able to use fingerprints etc. to prevent, detect and investigate crime". This is a very considerable extension of police powers and would again alter the nature of the population whose bioinformation is taken and held by the police. It may lead to legitimate questions over whether the NDNAD could still be accurately described as containing the DNA profiles of the "active criminal population"<sup>11</sup>, as it comes to encompass an ever larger proportion of the general population. The taking of bioinformation from individuals arrested for the most minor offences may be disproportionate in its effect on the legitimate privacy interests of such individuals, especially if there is no doubt about their identity. Ongoing oversight processes would be required if such proposals were implemented to ensure that arrests could never be made simply for the purpose of 'speculatively' obtaining bioinformation.
- 4.19 Although many people (including several Law Lords and some respondents to our consultation) argue that the fact of being lawfully arrested by the police on any occasion is an indicator of likely current and subsequent offending, others argue that arrests have to be properly understood. The assertion in the response from the Home Office to our consultation, that arrested persons 'differ' from non-arrested persons, runs directly counter to the statement of the then Home Office Minister Joan Ryan MP that: "As far as we are aware, there is no definitive data available on whether persons arrested but not proceeded with are more likely to offend than the population at large."<sup>12</sup> The National DNA Annual Report 2005/06 states that there have been 200,300 subject profiles on the NDNAD that were retained under the powers of the Criminal Justice and Police Act 2001, which allowed for retention where a suspect was not subsequently convicted of a recordable offence. From these subject profiles, approximately 6,290 individuals have been linked with crime scene samples from some 14,000 offences. Since the Criminal Justice Act 2003 permitted retention of subject samples from those arrested and not proceeded against, there have been matches of profiles retained on this basis with scenes of over 3,000 offences including 37 murders, 16 attempted murders and 90 rapes.<sup>13</sup>
- 4.20 These statistics are used to justify the retention of subject samples from those arrested but not convicted. However, these statistics give no indication of the significance of the DNA in the police investigation (did the police already have the suspect whose DNA matched to a crime scene in custody or was the DNA match a lead to an unknown suspect?); whether the 'matches' led to any subsequent arrest or conviction; or if the DNA match was used in the investigation or any court proceedings. Further, these statistics may conflict with those given in recent Parliamentary answers (see paragraphs 4.47–4.50). If there is no further, more detailed evidence that retaining the bioinformation of arrestees will achieve improvements in crime control, the

11. This was the stated aim of the Government when announcing in Parliament its investment in the DNA Expansion Programme in April 2000. It has been repeated in several subsequent government statements, and contained in the DNA Expansion Report 2005. It remains Strategic Objective No. 2 in the National DNA Database Annual Report of 2005–2006.

12. Joan Ryan, House of Commons, Hansard, 8 October 2006, column 491W.

13. National DNA Database (2007) *The National DNA Database Annual Report 2005–2006*, p36; John Reid MP, House of Commons, Hansard, 14 December 2006, column 1315W (figures confirmed by the Home Office).

interference with individuals' liberty cannot be justified.

- 4.21 The implementation of the March 2007 proposals would require further justification. It is difficult to know how effective this measure will be in improving detection rates. Indeed, it is contentious to suggest that adding subject samples in respect of minor offenders, including those whose arrest results in no further action, will reap significant benefit in terms of subsequent crime detection and prosecution. Those arrestees are likely to include disproportionate numbers of children or youths or individuals from ethnic minorities, so exacerbating the current disproportionate representation of youths and ethnic minorities already on the NDNAD. Justifications based upon a possible 'deterrent effect' – that potential offenders may refrain from offending in light of the knowledge that their DNA profile was on the NDNAD – are very difficult to support and remain hypothetical (see paragraph 4.40).
- 4.22 This extension of arrest and sampling powers would be far less effective than other measures that could be taken, for example, by retrieving more crime scene samples, and may also be less effective than other changes to policing practice or interventions aimed at social factors impacting upon crime. For example, measures such as a greater focus upon proactive or community policing, or investment in drug treatment centres, could equally result in improved detection rates, or reductions in crime. The Home Office proposals (March 2007) are not backed by sound empirical evidence that their implementation would be a proportionate response to criminal activity (see paragraphs 3.27–3.28).
- 4.23 An arrest permits lawful detention for particular purposes, and alters the legal rights of the arrestee, changing their status from free to unfree. It is thus rightly subject to restrictions and some oversight: an arrest must be made under lawful authority, and discretion must be reasonably exercised. Yet it is the case that police may arrest in circumstances where it may be open to question whether it was 'necessary' and arrest powers may be exercised in a discriminatory way. In some instances, arrests may be predicated upon scant or erroneous information, or prompted by improper considerations. In such instances, it is difficult to justify taking bioinformation from arrestees without their consent for the purposes of potentially solving other crimes (either previously committed or to be committed in the future). This situation can be clearly distinguished from those where an individual has been arrested and then charged with a recordable offence, because the charging process (with the involvement of a Crown Prosecution lawyer) ensures that there is sufficient evidence of unlawful behaviour to justify the taking of bioinformation without consent. This individual will then be lawfully subject to infringements upon their liberty while the criminal process takes its course (for example, by being placed on bail or being required to respond to a court summons). Additionally, policing priorities and practices may lead to the disproportionate arrest of certain populations, such as children and youths, members of ethnic minorities, or vulnerable populations such as the homeless or mentally ill. In light of these concerns, **it is our view that the authority of the police to take and store both fingerprints and biological samples from all arrestees without their consent, regardless of the reason for the arrest, is disproportionate to the aims of identifying a person and of confirming whether or not a person was at a crime scene. Suspicion of involvement in a minor (at present 'non-recordable') offence does not justify the taking of bioinformation from individuals without their consent. Where fingerprints are taken electronically in order to verify an identity, they should be compared only with stored subject records and destroyed once such a check has been completed.**

### Uses of bioinformation in criminal investigation

- 4.24 Each time a fingerprint, a mark or biological sample from a crime scene or a subject DNA profile is loaded onto a bioinformation database, there is the potential for links to be established in four different ways:

- a new set of fingerprints/DNA subject profile of an arrestee may match a pre-existing latent crime scene fingerprint/DNA profile (suggesting that this individual may have been linked to that crime scene at some time);
- a new crime scene fingerprint/profile may match an already recorded individual fingerprint/profile (suggesting an individual who has previously been arrested or volunteered a fingerprint/sample may have also been linked to this new crime scene at some time);
- there may be a match between a new and previously loaded crime scene fingerprint/profile (suggesting that the same individual – as yet unidentified – has been linked to both crime scenes at some time); or
- there may be a match between a new fingerprint/profile and a stored fingerprint/profile (suggesting, for DNA, that two people have the same profile<sup>14</sup> or that the same individual has been sampled twice, see paragraph 1.22).

In each case, if the database produces a 'match' between a new profile and a pre-existing record, it is reported to the police force. This could come from within its own fingerprint bureau, or from a forensic DNA analysis provider. This 'intelligence' will then be used to inform ongoing investigations, instigate new ones, or supplement existing information about criminal activity.

4.25 It is claimed that the forensic use of DNA in routine criminal investigations has facilitated important changes in policing in general, and has improved rates of detection in particular. Some argue that this technology has not merely enhanced existing police investigations, but has begun to replace "the slow, tedious and expensive traditional investigative methods of police interviews".<sup>15</sup> Whilst this may overstate the case, DNA profiling has provided a powerful resource for 'intelligence-led' policing, which proactively targets individuals to either prevent them from committing criminal acts, or to quickly detain them following their offending. The role of science and technology has been pivotal to the implementation of intelligence-led policing, and since 2000 the adoption by the Association of Chief Police Officers (ACPO) of the National Intelligence Model (NIM) makes science and technology central to successful investigations.<sup>16</sup>

### ***The impact upon crime detection***

4.26 In paragraph 1.18 we reported that from February 2006 to January 2007, the average number of fingerprint 'identifications' using IDENT1 was 6,324 per month. These are known as 'scene of crime' identifications and refer to the following searches:

- Finger Mark against Tenprints: marks taken from a scene of crime are checked against the national tenprint record database held on IDENT1;
- Tenprint against Marks: the fingerprints taken from an individual are run against the unidentified marks from scenes of crime (SoC) database for potential matches;
- Palm Mark against Palm Print: palm print marks from a scene of crime are checked against the database of palm prints;
- Tenprint against Tenprint: primarily used to establish if people have provided the correct details of identity;
- Mark to Mark: used when a known identity attributed to a mark is searched to check potential connections to other marks.

14. This would be the case for identical twins.

15. Watson N (1999) The analysis of body fluids, in *Crime Scene to Court: The essentials of forensic science*, White P (Editor) (Cambridge: The Royal Society of Chemistry), p325.

16. The DNA Expansion Programme provided £241 million between April 2000 and March 2005, funding the increased collection of DNA and upgrading of the technology involved.

When one of these searches is performed using IDENT1, the top 15 results meeting the minimum accuracy threshold are shown. These 'matches' are then checked manually by a fingerprint specialist. If a fingerprint specialist can confirm a match from one of the IDENT1 results, the fingerprint specialist will then make what is referred to as an 'identification' (and an identification will be recorded for IDENT1 statistical records). However, this is just a preliminary verification and confirmation requires further checks from senior fingerprint specialists.

4.27 Many of these initial identifications will go on to be verified to the point where they can be used to arrest a suspect or for evidential purposes in court, while some identifications could be with a suspect, a victim or another individual with a legitimate explanation for the presence of their fingerprints at a crime scene. Statistics are not collected centrally to indicate what proportion of initial identifications go on to be of use in an investigation or prosecution. Estimates state that approximately ten per cent of fingerprints found at a crime scene will lead to a successful detection (see Box 4.2).<sup>17</sup>

#### Box 4.2: Policing terminology

- **'Fingerprint identification'**: (see paragraph 4.26) the initial verification by a fingerprint specialist of a match produced by IDENT1 between a fingerprint or palm print with either a crime scene print, or a set of tenprints already present on IDENT1.
- **'DNA match'**: this can be a '*crime to subject*' match, i.e. the name of a suspect being provided to the police in respect of a recovered crime scene profile, or a '*crime to crime*' match, where two profiles from different crime scene samples match, suggesting the same perpetrator.
- **'Detection'**: before a crime is classed as detected there must have been:
  - (1) a crime that has been recorded;
  - (2) a suspect identified and made aware that the offence will be detected against them; and
  - (3) sufficient evidence to charge the suspect with the crime.

There are two types of 'detection': sanction and non-sanction. A 'sanction detection' is where a suspect has been charged and has received a caution, penalty or punishment, or had the case taken into consideration by a court. These detections count as an 'offence brought to justice', for which the police have targets set by the Government. A 'non-sanction detection' means that although there was sufficient evidence for charging a suspect, no further action has been taken in respect of that offence. There are a variety of reasons that may lead to no further action being taken in respect of a recorded crime.<sup>18</sup>
- **'DNA detection'**: These are detected crimes in which a DNA match report was available. This may include cases where no one was convicted of an offence in connection with a crime (a non-sanction detection) but a DNA match report was still available. Such detections will not be included in the 'offences brought to justice' statistics.

4.28 The utility of the NDNAD has been evidenced by data indicating that the chance of a new crime scene profile matching an existing subject profile on the NDNAD is 52 per cent (it is 68 per cent for the Scottish Database).<sup>19</sup> The detection rate when DNA evidence is available is significantly higher, at 40 per cent, than the overall crime detection rate, which stands at 26 per cent.<sup>20</sup> Detection rates of cases with DNA are improved further for certain crimes, for example in domestic burglary the detection rate rises from 16 per cent to 41 per cent when DNA is recovered from the scene.

4.29 However, government assertions of the significance of DNA in the investigation of serious crimes such as murder, manslaughter and rape are difficult to assess, as statistics for these crimes are not collected "as [these] detections are achieved through integrated criminal investigation and not by forensic science alone".<sup>21</sup> There are additional factors:

17. Home Office (2005) *DNA Expansion Programme 2000–2005: Reporting achievement* (Forensic Science and Pathology Unit).

18. For example, if: the offender dies, is taken ill and is unlikely to recover or is too mentally disturbed; the complainant or an essential witness is dead, or refuses, or is permanently unable, or if a juvenile is not permitted, to give evidence; a crime has been committed by a child under 10; the police or Crown Prosecution Service decide no useful purpose would be served by proceeding.

19. National DNA Database (2007) *The National DNA Database Annual Report 2005–2006*.

20. Home Office (2005) *DNA Expansion Programme 2000–2005: Reporting Achievement* (Forensic Science and Pathology Unit), p16.

21. Hazel Blears MP, House of Commons, Written Answers, 1 March 2006.

- First, the criminal investigation process is a complex one. Figure 4.1 indicates just some of the many reasons why cases fail to proceed through the criminal process to result in a conviction (this is known as ‘attrition’). The existence of a DNA match may reduce attrition, but there remain other significant influences on the crime detection rate.
- Second, many crimes do not have an obvious crime scene, and forensic examination is impossible or not required. In addition, as the Home Office states with regard to minor crimes, for example, “in many cases of minor interpersonal violence, DNA is relatively easily recovered but makes no material impact on the subsequent investigation as the identities of those involved are frequently not in question”.<sup>22</sup> Fewer than 20 per cent of crime scenes are forensically examined<sup>23</sup> and DNA profiles are successfully added onto the NDNAD from just one in twenty of these examined scenes.
- Third, there is wide variation between police forces in the proportion of crime scenes that are examined and the number of biological samples that are sent for analysis.

4.30 At the inception of DNA testing, the police and forensic providers distinguished between DNA testing for ‘intelligence’ (that which could direct police inquiries) and that which could constitute ‘evidence’ (proof that could be used in court against a defendant). Indeed,

**Figure 4.1: Attrition within the Criminal Justice Process**

Some typical problems impacting upon the number of offences brought to justice. An ‘offence brought to justice’ is counted as also including cautions, reprimands and fixed penalty notices as well as criminal convictions gained after a guilty plea or a trial.



22. Home Office (2005) *DNA Expansion Programme 2000–2005: Reporting achievement* (Forensic Science and Pathology Unit), p16.

23. National DNA Database (2006) *The National DNA Database Annual Report 2003-2004*, p16

throughout official literature, emphasis is put on the use of bioinformation as ‘intelligence’, that is in providing actionable information that is helpful in giving direction to police investigations. However, with the introduction by the Crown Prosecution Service of the ‘staged reporting’ process (see paragraphs 5.4–5.5) and the replacement of the original requirement for two DNA sampling tests (one for investigation, then another for ‘evidence’ if a suspect was charged) with the one ‘PACE’ sampling kit used for both purposes, it is now clear that a DNA sample can fall into either category. This then supports an argument for *all* DNA use to be subject to the same levels of scrutiny. In our view, the existence of ‘intelligence’ uses should not lead to a lowering of the highest evidential standards when collecting, processing and using biological materials, even for purposes that may not result immediately in a prosecution. As we discuss in Chapter 3 (see paragraphs 3.24–3.26), there are significant personal costs for citizens who are caught up in police investigations, who may well be entirely innocent, and any police ‘intelligence’ may later be relied upon in court and scrutinised as evidence.

- 4.31 The Police Standards Unit has been instrumental in a number of operations aiming to assist victims in unsolved cases; to finalise old or forgotten ‘cold’ cases; and to use scientific developments to secure more convictions. All ‘cold cases’ reviewed as part of operations (such as Operation Sapphire, which re-opened 300 unsolved sexual assaults from the 1980s and 1990s, leading to eleven convictions for rape), were selected from unsolved cases with available crime scene samples. Some of these cases were 10 to 15 years old and may have been put to one side because best efforts to solve them at the time had been to no avail. The development of the latest DNA techniques had permitted the ‘re-invigoration’ of these cases.
- 4.32 Operation Advance, which commenced in 2004, upgraded DNA crime scene samples from unsolved cold cases, in order to attempt to use newer DNA profiling technologies to be able to compare them with profiles on the NDNAD. A sample of 215 crime scene samples were selected, of which 112 were upgraded to SGM+. Of these, one in four subsequently led to a match on the NDNAD, a significant increase. Operation Advance has so far resulted in 22 convictions. A further operation, Advance II, involved very early cases using ‘QUAD’ which was a DNA profiling technique used in 1994/5. A total of 66 cases were identified as being suitable for further analysis, resulting in 22 matches against the NDNAD, leading to three arrests. In addition to further matches, Operation Advance looks at criminal careers and uses DNA profiles to track offending patterns. The Operation is now starting further work on cases where the evidence consisted of ‘DNA mixtures’. ‘Familial searching’ techniques have also been used to find partial matches in two cases where matches on the NDNAD had been lacking (see paragraphs 6.6–6.11).
- 4.33 The usefulness of DNA in generally improving poor criminal detection rates, and helping to obtain convictions in previously unsolved cases, has been evidenced partly by the presentation of summary statistics and partly by reference to more anecdotal case studies. However, there is little systematic knowledge of the most effective methods of collecting, recording, processing and using forensic bioinformation. The available information shows a very complex picture. Not all fingerprint and DNA matches lead to a conviction, or even an arrest. Initial DNA match reports are often accompanied by caveats, with 49 per cent of NDNAD matches leading to a crime being detected (see Box 4.2). Moreover, in 42 per cent of cases where DNA evidence was available, the police *already* had the name of the suspect whose identity was suggested by the match report. In 2004–05, the Home Office reported a total of 19,873 ‘DNA detections’ (see Box 4.2), with DNA evidence proving to be of use in a small proportion (0.8%) of all crimes recorded. In many crimes, such as fraud or public order offences, even if DNA were available it would be of little significance.<sup>24</sup> The difficulties in interpreting the value of DNA matches and

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24. All figures taken from Home Office (2005) *DNA Expansion Programme 2000–2005: Reporting achievement* (Forensic Science and Pathology Unit), pp12–15.

their support of investigations are magnified by recent Home Office statistical confusion, with conflicting accounts being published and given to Parliament in response to questions about the NDNAD (see paragraphs 4.47–4.52).

- 4.34 In addition to the initial cost of the DNA profiling of the sample, the private companies that perform the DNA analysis charge approximately £4.50 for the first five years of storage of each biological sample, and slightly under £1.00 for each year thereafter. With the number of samples now standing at four million, this is a considerable drain on police budgets, and costs will increase as the NDNAD expands (not least because of energy costs involved in keeping an increasing number of biological samples frozen).
- 4.35 **In light of the discussion in this chapter of the usefulness of bioinformation in the investigation of crime, we recommend that:**
- **Expenditure for expert crime scene analysis should be given higher priority than the increased collection of subject samples. If the Government is right to assert that “the whole of the active suspect criminal population is now held on the NDNAD”, then further improvements in DNA detection rates rest heavily on expanding crime scene collection rates and ensuring that full use is made of the material collected.**
  - **There should be improved recording of police data on the uses of DNA matches and the production of better statistics to inform key stakeholders and the wider public. More effort should also be made to ascertain ‘best practice’ within policing to maximise the crime control potential of bioinformation. The collation of statistics would also assist with an exploration of the cost-effectiveness of the forensic use of bioinformation and may provide evidence as to whether infringements on the liberty, privacy and autonomy of individuals are justified.**
  - **To justify the interference with the liberty and autonomy of citizens, more detailed independent research on the contribution of bioinformation to criminal justice is required.**

### Retention of bioinformation

- 4.36 The retention of bioinformation is highly controversial. Fingerprints and DNA profiles are retained on their respective databases until the individual reaches 100 (or until they die in the case of IDENT1). The retention of fingerprints and DNA profiles raise similar issues, because these are useful only for identification and for matching with crime scene samples (but see paragraphs 2.15–2.21). The permanent retention of fingerprints is not normally considered problematic. However, the functioning of IDENT1 may raise concerns surrounding the ‘linkages’ with not just the Police National Computer (PNC), but other biometric and informational databases in the future (see Chapter 7). If such linkage were to be permitted (this would require changes in policy and law) then this ‘inter-operability’ may open up greater possibilities: for wrongful or inappropriate access; for intrusive research; or for misuse. The increased likelihood of identifiability might lead to greater risk of breaches of privacy, and for mistakes during inputting and transferring of data.
- 4.37 When DNA profiling was introduced, it was argued that the requirement to destroy records from those not convicted limited its potential. Further pressure on the Government to change the law arose from the joint failure of police and the Forensic Science Service (FSS) to ensure the removal of profiles from those who had never been convicted. In 2000, Her Majesty’s Inspectorate of Constabulary revealed that more than 50,000 samples and profiles were being held unlawfully, as the law had demanded their removal because the donor had not been subsequently convicted of an offence. Matches between subject profiles that should have been removed and newly entered crime scene profiles proved highly problematic for the courts, with palpably guilty persons appealing against their convictions on the basis of the use at trial of illegally retained evidence.

- 4.38 In 2001, Parliament removed the requirement to eliminate records, deciding that the retention and indefinite use of samples and profiles taken from those who were once *charged* with a recordable offence, even where they were never convicted, struck an acceptable balance between the interests of the criminal justice system and individual rights. The Criminal Justice Act 2003 extended retention of fingerprints and biological samples to all individuals *arrested* for recordable offences, regardless of whether they were subsequently charged. The Home Office proposals (March 2007), if introduced, would further extend this to all arrestees (regardless of offence), and would entail yet greater permanent retention of bioinformation from individuals who have never been charged with, or convicted of, an offence, and whose innocence must be presumed.
- 4.39 It is clear that the construction of bioinformation databases to retain large numbers of records and biological samples from individuals is central to efforts to increase crime detection rates (particularly in 'volume' crime). The presence of a DNA 'match' between a suspect and crime scene can dramatically accelerate an investigation and prosecution. Much expense and distress can be spared in reaching a verdict swiftly, particularly if fingerprint or DNA evidence can prompt a guilty plea to be entered by the suspect at an early stage. Bioinformation can also be useful in eliminating from an investigation citizens who falsely confess to crimes or who may come under suspicion but are innocent. The exclusion of innocent suspects from investigations at an earlier stage increases the chance of detecting more quickly the true perpetrator, and also prevents possible wrongful convictions.
- 4.40 In addition to such benefits, the Home Office also posits that the increased knowledge among offenders that they are likely to be caught may act as a powerful deterrent. Home Office policy relies on the supposition that samples taken for minor offences produce matches with more serious crimes (such examples feature prominently in publicity). Research is also cited that indicates that offenders 'progress' in their criminal careers, stressing that such careers can be 'cut short' by swift intervention of the criminal justice system, facilitated by the use of databases.<sup>25</sup> However, such 'career criminals' (if they were to be found on such databases), must form an increasingly small proportion of people on the NDNAD, with diminishing returns in terms of crimes detected (and careers stymied), relative to numbers of profiles held.
- 4.41 While the vital importance of greater retrieval and inclusion of crime scene samples is widely recognised, questions remain over the utility of continuing expansion of the NDNAD in terms of capturing individual profiles from ever greater categories of individuals (originally the convicted serious offender, to now, the one-off suspect of a minor offence and consenting volunteers). Whether all of those currently included are 'relevant' for detection purposes has yet to be convincingly evidenced (see paragraph 4.20). If the DNA Database is to assist in the detection of future crimes, why include individuals who are unlikely to offend in the future?
- 4.42 In any assessment of the retention of bioinformation, there are two critical questions. The first is what are the purposes of bioinformation and its retention on a database? Secondly, is there evidence to support the contention that the retention of samples from those never convicted (or charged) of an offence aids crime detection? In answering the first question, it is only by identifying objectives that we can gauge whether current procedures are justified. A DNA database of profiles is not necessary, for example, if the police wish to confirm whether a biological sample at a crime scene and the DNA of an already arrested suspect match because DNA can be obtained from the suspect and matched (or not) with the crime scene evidence. The database of profiles obtained from crime scene samples becomes useful in attempts to verify whether this person might also be

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25. See Leary R and Pease K (2003) DNA and the active criminal population *Crime Prevention and Community Safety* 5(1): 7–12; Townsley M, Smith C and Pease K (2005) Using DNA to Catch Offenders Quicker: Serious detections arising from Criminal Justice Samples Jill Dando Institute of Crime Science, available at: [http://www-staff.lboro.ac.uk/~ssgf/KP/2005\\_DNA\\_to\\_Catch\\_Offenders.pdf](http://www-staff.lboro.ac.uk/~ssgf/KP/2005_DNA_to_Catch_Offenders.pdf), accessed on: 5 July 2007.

implicated in a past crime. In addition, the inclusion of this suspect's profile on the NDNAD may provide an easy detection in any *future* crime that they might commit.

4.43 Forensic DNA profiling has been rightly celebrated, particularly in the United States, for its power to exonerate the innocent. Indeed, the matching of DNA profiles with crime scene samples may have saved many innocent people from coming under suspicion, or has ensured the swift termination of inquiries into an innocent suspect, and continues to do so. However, a database is of limited use in re-investigating or overturning wrongful convictions because a clear indication that an innocent individual has been arrested (and hence the risk of a wrongful conviction has been raised) will already be given when the convicted person's DNA profile is shown not to match the relevant crime scene sample. A database is therefore not needed for this purpose. Clearly, the retention of the crime scene profile (especially when it is a partial profile) on the NDNAD after there has been a conviction allows a disputed conviction to be revisited if a *future* subject profile from somebody other than the convicted defendant is found to be a match. Yet present practice is to remove all crime scene profiles once there has been a conviction relating to that crime. This deletion, carried out for administrative convenience, thereby prevents the possibility of any future matches with newly loaded samples from different individuals. This limits the potential for the NDNAD to assist with overturning wrongful convictions.

4.44 The retention of biological samples raises greater ethical concerns than the digitised DNA profiles, as well as practical issues, but at present many jurisdictions retain the biological samples on the same basis as they retain the DNA profiles. The Federal Bureau of Investigation (FBI) in the United States argues that there are compelling reasons to archive biological samples in addition to the digital DNA profiles, and destroying the biological samples would make it impossible to:

- regenerate the database if it were corrupted in some way;
- introduce new, more sophisticated analytical technologies that would require a re-typing of the original sample; and
- perform necessary quality assurance checks including return to re-type the biological sample to confirm the accuracy of existing profiling.<sup>26</sup>

4.45 Other European countries have not found it necessary to have such wide powers of retention as England and Wales. We have already described in paragraph 1.26 how Scotland has taken a different route, allowing indefinite retention only on conviction of an offence, and time-limited retention for people charged with (but not convicted of) sexual or violent offences. In all other cases, samples and information derived from them must be destroyed if the accused or arrestee is not convicted of an offence or otherwise subject to judicial disposal. The arrangements in some other European countries are set out in Box 4.3.

4.46 The United Kingdom Government makes similar claims to those of the FBI for the retention of both the biological sample and DNA profile and adds that:

- it would hinder the administration of justice if samples that should have been destroyed were in fact retained and their use subsequently challenged;
- the withdrawal of consent (of a volunteer) could be a precursor to criminal activity; and
- it is administratively convenient to keep the DNA data.<sup>27</sup>

However, the Human Genetics Commission argued in 2002 that these rationales for retention are not particularly compelling. The Commission, like the Irish Law Commission and the not-for-

26. Herkenham MD (2006) Retention of Offender DNA Samples Necessary to Ensure and Monitor Quality of Forensic DNA Efforts: Appropriate safeguards exist to protect the DNA samples from misuse *Journal of Law, Medicine & Ethics* 34(2): 380–4.

27. UK Government (2005) *Forensic Science on Trial: Government Response*, p6.

profit group GeneWatch UK, concluded that other means can be found to assure quality, and that further samples could be re-taken from offenders if necessary.<sup>28</sup>

4.47 The second critical question remains: is there sound evidence to support the supposition that the retention of samples from those never convicted (or charged) with an offence aids crime detection? Serious problems arise when trying to determine the significance of the number of 'matches' with profiles from the unconvicted (see paragraph 4.20).

#### Box 4.3: Collection and retention in other European countries<sup>29</sup>

The majority of European nations focus on collecting and retaining samples from certain types of serious offender. Many limit the types of offences for which the police can *obtain* non-consensual samples: for example, in Austria police may only collect DNA from certain suspects of 'severe' crimes (such as crimes against the person) and in Finland, Norway, the Netherlands, Hungary and Sweden sampling is limited to crimes that attract specific terms of imprisonment as a punishment (in Finland six months, Norway two years, Sweden two years, the Netherlands four years and Hungary five years). In Belgium, a suspect may be required to provide a biological sample when the crime under investigation attracts a term of imprisonment of five years or more and when biological material relevant to the investigation has been recovered from the crime scene. On the other hand, in the Baltic States of Estonia, Latvia and Lithuania, samples may be taken without consent from all those suspected of involvement in a crime.

Regimes governing the *retention* of profiles of convicted offenders vary greatly. Austria, Estonia and Finland retain such profiles indefinitely, or at least until after the death of the offender, whereas Sweden removes profiles ten years after the end of the sentence; Hungary 20 years after sentence expiry; and France 40 years after sentence or when the individual reaches the age of 80. Profile storage times vary in the Netherlands according to the seriousness of the crime (retention for 20 years if convicted of a crime with a potential sentence of between four and six years and retention of 30 years if convicted of a crime with a potential sentence longer than six years), whereas the Czech Republic requires three-year reviews after conviction. In Belgium, only DNA profiles from those convicted of some violent or sexual crimes can be indefinitely retained. German law requires that a suspect be deemed to be at risk of committing a recordable offence in the future before their profile can be entered on the national database.

*Sample retention* also varies. In the majority of countries, the fate of samples largely follows that of profiles, although there is not always specific legislative provision which specifies sample retention or destruction. However, in Belgium and Germany, all samples taken from individuals have to be destroyed after successful profiling, and in Switzerland all samples must be destroyed within three months of the entry of the relevant profile on the database. Proposed Italian legislation envisages the destruction of samples following successful profiling. Other than England and Wales, no European jurisdiction systematically retains the profiles or samples of individuals who have not been convicted of a crime, although some states require suspects or prosecuting authorities to request removal once proceedings are ended.

In January 2006, after a detailed report by the Law Reform Commission, the Irish Government proposed the establishment of a national DNA database. The Criminal Justice Bill 2007 is extending police powers to take and retain biological samples from more offenders and also those not convicted, while the Criminal Justice (Forensic Sampling and Evidence) Act 2007 sets out the operation and oversight of the Irish DNA Database. An 'Oversight Committee' will be established at the same time as the Database, which will review and report annually to the relevant minister on the operation of the Act.

4.48 In December 2006, it was reported in Parliament that, since May 2001, 200,000 samples and profiles had been taken from charged but unconvicted individuals (but no figures were given for the arrested but uncharged).<sup>30</sup> The National DNA Database Annual Report 2005–2006 (published in May 2007) details an exercise carried out in November 2005 that showed that the number of individuals on the NDNAD who had not been charged or cautioned at the cessation of inquiries involving them was 139,463 (this figure included 15,116 volunteers).<sup>31</sup> The Home Secretary stated that as at 14 July 2006, 2.3 million persons on the NDNAD had a criminal record (of a total of 3.5 million).<sup>32</sup> Although some of the remaining 1.2 million may be 'replicates', or are awaiting trial, and almost 20,000 were the profiles of volunteers, it is still clear that the

28. Human Genetics Commission (2002) *Inside Information: Balancing interests in the use of personal genetic data* (London: Department of Health); Law Reform Commission (2005) *The Establishment of a DNA Database* (Dublin: Law Reform Commission); GeneWatch UK (2005) *The Police National DNA Database: Balancing crime detection, human rights and privacy* (Buxton: GeneWatch UK).

29. See Williams R and Johnson P (2005) *Forensic DNA Databasing: A European perspective, Interim report*, available at: <http://www.dur.ac.uk/sass/casr/projects/?mode=project&id=31>, accessed on: 5 July 2007, for a detailed report on the situation in other European nations.

30. John Reid MP, House of Commons, Hansard, 14 December 2006, column 1315W.

31. National DNA Database (2007) *The National DNA Database Annual Report 2005–2006*, p32.

32. John Reid MP, House of Commons, Hansard, 13 December 2006, column 1108W.

number of samples from individuals never convicted of an offence was considerably greater than had previously been reported. This revelation prompted a rash of media headlines, proclaiming that one third of the NDNAD profiles (over one million) were from 'innocent' people (i.e. not charged or not convicted). The Government informed Parliament that the results of a cross-searching exercise performed on the Police National Computer (PNC) on 14 July 2006 showed that at that date, 79.3 per cent of those on the NDNAD who also had an entry on the PNC<sup>33</sup> had a conviction or a caution (i.e. a criminal record). The remaining 20.7 per cent were: persons who had been arrested for a recordable offence where no further action was taken; persons who had been charged with a recordable offence where proceedings are ongoing; and persons under 18 who had a formal warning or reprimand recorded on the PNC.<sup>34</sup>

- 4.49 The NDNAD Annual Report 2005–2006 states that there are ongoing efforts to establish accurately how many records on the NDNAD relate to 'Criminal Justice arrestees' (individuals who had never been charged with an offence). The accuracy of such data is vital for assessing the benefits of retention of bioinformation from all of those arrested, especially where the benefit has to be weighed against the detriment to civil liberties and risks to privacy. If the number of matches declared as resulting from the profiles of 'innocent' individuals is measured as a proportion of over one million such profiles, this is far weaker support for retention of these profiles than if understood as a proportion of the 139,000 'innocent' profiles, i.e. those who were arrested but no further action was taken, that has also been reported.
- 4.50 Many respondents to our consultation assumed that the large-scale retention of bioinformation from those who had not been convicted of a recordable offence had had a positive impact upon crime and detection rates, but the reality is more complex. The joint response on behalf of the Association of Police Authorities, ACPO and the Home Office stated that the retention of bioinformation "may well represent a significant time and cost saving in future investigations and help in the prevention and detection of crime". Indeed, the NDNAD Annual Report 2005–2006 reported that:

"Of the 200,300 or so profiles on the NDNAD that have been retained under the CIPA 2001 and would previously had to have been removed, approximately 8,500 profiles from some 6,290 individuals have been linked with crime scene sample profiles from some 14,000 offences." (See also paragraph 4.19.)<sup>35</sup>

Matches made to previously unsolved offences would have been possible under the earlier legislation because they do not require the retention of profiles when individuals are not proceeded against or are acquitted.

- 4.51 GeneWatch, in its response to our consultation, questioned the quality of these and other recent Home Office statistics, suggesting that information about matches is not always supplemented by information about detections, and almost never by information about successful prosecutions. The organisation also points out that "...despite a significant increase in the number of individuals on the database, DNA detections have not increased over the past 3 years", having stabilised at about 20,000 each year. They argue that this is because "many more people now being added to the database are unlikely to commit the type of future crimes for which DNA evidence is relevant." It remains difficult to test this claim, as well as many other more positive claims for the effectiveness of the NDNAD in general terms, without better information than is currently available about the course of investigations and prosecutions where DNA has been recovered from crime scenes.

33. So excluding volunteers, who will not have an entry on the PNC.

34. Joan Ryan MP, House of Commons, Hansard, 19 June 2007, column 1772W.

35. National DNA Database (2007) *The National DNA Database Annual Report 2005–2006*, p36; John Reid MP, House of Commons, Hansard, 14 December 2006, column 1315W (figures confirmed by the Home Office).

4.52 It is clear from the preceding paragraphs that the evidence used in support of the retention regime in England and Wales is seriously limited and confusing. While steps are being taken to try to improve the reporting capabilities of the NDNAD, there is a clear need for more detailed enquiries to be made into the benefits of the NDNAD in actual criminal investigations. In particular, information is needed on how DNA matches may eventually translate (or not) into convictions in different situations, and for different offences. There is very limited evidence indeed that the retention regime of England and Wales is effective in significantly improving detection rates, above and beyond that which may be achieved by retaining only those profiles taken from individuals convicted of a recordable offence (as is the case in Scotland), or by simply searching against stored profiles, but not retaining the DNA profile indefinitely. The match rates between stored subject profiles and new crime scene profiles loaded onto the NDNAD in England and Wales, which is 52 per cent, can be contrasted with that of the Scottish DNA Database, which has a higher match rate of 68 per cent. This demonstrates clearly that the more limited retention policy in Scotland does not necessarily negatively impact upon its subsequent match rates (see paragraph 4.28).

### ***Retention of fingerprints, profiles and samples***

4.53 The retention of fingerprints or DNA profiles does not (at this time) permit the police access to more detailed information about an individual. A fingerprint cannot reveal anything about the personal characteristics of an individual, and current DNA profiles are limited, making it difficult for the profile to reveal further, or sensitive, information (see Chapter 2 for details). It is, however, entirely possible to sequence part or all of an individual's entire genome from their biological sample, and therefore, the retention of biological samples requires much greater critical attention, and justification. It is our view that electronic retention of fingerprints and DNA profiles is much less contentious than the retention of biological samples and incurs very little cost. However, there is, at present, a lack of convincing evidence that retention of profiles of those not charged with or convicted of an offence has had a significant impact on detection rates and hence it is difficult to argue that such retention can be justified. **Accordingly we recommend that independent research should be commissioned by the Home Office to assess the impact of retention. In the light of the findings of that research, an informed judgment could then be made.**

4.54 The current practice of indefinitely retaining biological subject samples from those not charged or convicted of an offence is expensive and is the focus of considerable public disquiet and mistrust about possible future uses to which the samples might be put. Our approach is guided by the principle of proportionality (paragraphs 3.27–3.28), bearing in mind the purpose of retaining the bioinformation on the one hand, and the absence of satisfactory empirical evidence to support the present practice in England, Wales and Northern Ireland on the other. **We recommend that the law in England, Wales and Northern Ireland should be brought into line with that in Scotland. Fingerprints, DNA profiles and subject biological samples should be retained indefinitely only for those convicted of a recordable offence. At present, the retention of profiles and samples can be justified as proportionate only for those who have been convicted. In all other cases, samples should be destroyed and the resulting profiles deleted from the NDNAD. This should be reviewed in the light of the findings of the further research that we have recommended.**

4.55 **The Scottish practice of allowing retention of samples and profiles, for three years, from those charged with serious violent or sexual offences, even if there is no conviction, should also be followed. Thereafter the samples and profiles should be destroyed unless a Chief Constable applies to a court for a two-year extension, showing reasonable grounds for the extension. (For specific recommendations about the retention of bioinformation from volunteers and minors see below.)**

4.56 It is reported that since 1995, 121,522 crime scene samples and profiles have been removed from the NDNAD, including 30,589 in 2005/06 alone. These are removed after a conviction has been secured in relation to that offence and a decision has been made that it will no longer be investigated. However, this practice is being re-considered by the NDNAD Strategy Board. Permanent retention of crime scene samples would permit not only the possible identification of further potential suspects who may have been involved in an offence, but also allow for the possibility of rectifying possible miscarriages of justice in the future. The fallibility of the criminal justice process, and forensic science, remains clearly demonstrated by cases such as that of Damilola Taylor.<sup>36</sup> **We therefore recommend that, because crime scene samples are unique and unrepeatably, they must be retained indefinitely.**

### Victims and volunteers

4.57 Individuals may be asked by the police to volunteer biological samples as part of a criminal investigation. Until 2001, biological samples voluntarily provided to the police could only be used for one-off comparisons against crime scene samples. If these failed to produce a match, samples and profiles were destroyed following the conclusion of an investigation. The inability of the police to retain samples given by volunteers gained media attention after an intelligence-led screen during the investigation of the murder of Louise Smith in 1996. That investigation saw the screening of over 4,500 volunteers. The screen failed to produce a suspect (although a local man was subsequently convicted) but 9,000 local people, led by Smith's parents, signed a petition requesting that the police retain the samples collected during this and future mass screens. In 1999, the Home Office recommended a 'separate voluntary database' which would not be continuously speculatively searched but could be used for elimination purposes. However, subsequent legislation simply allowed for the permanent inclusion on the NDNAD of voluntarily obtained samples.

4.58 Individuals requested by the police to volunteer samples – for elimination purposes, or during a mass screen – may consent to the use of their bioinformation in relation to the investigation of a specific offence, after the conclusion of which the fingerprint, profile and sample are all destroyed. Alternatively, they may now also consent to the permanent retention of their bioinformation. This latter consent is described (at least in the form provided to the individual) as irrevocable. Guidance to officers for taking volunteer samples is contained in PACE Codes of Practice, Code D. This states that the person should be informed of the reason for taking the sample, if appropriate the grounds on which the relevant authority to take the sample has been given, and that information derived from the sample may be subject to a speculative search on the NDNAD.

4.59 It has been reported that up to 40 per cent of people who voluntarily provide elimination samples also consent to having their sample stored permanently and their profile loaded onto the NDNAD where it will be used in speculative searches for the indefinite future.<sup>37</sup> If this is true, we believe such a level of consent might be lower if the consent were fully informed and properly considered. It more likely reflects the stressful experience of being involved in a crime and its investigation. No volunteer samples were loaded onto the NDNAD before 2004–05, yet during 2004–05, 12,095 samples were loaded, and a further 3,953 in 2005–06.<sup>38</sup>

4.60 The House of Commons Science and Technology Committee report of 2005, *Forensic Science on*

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36. Rawley A and Caddy B (2007) *Damilola Taylor: An independent review of forensic examination of evidence by the Forensic Science Service* (London: Home Office).

37. Joan Ryan MP, House of Commons, Hansard, 9 October 2006, column 492W.

38. Mr Sutcliffe MP, House of Commons, Hansard, 9 May 2006, column 209W.

*Trial*, stated that “We do not understand why consent should be irrevocable for individuals who are giving DNA samples on a voluntary basis”.<sup>39</sup> The Government response explained that:

“The rationale for not permitting a volunteer to withdraw their consent... is to avoid a return to the situation prior to the Criminal Justice Act 2001. Situations where consent had been given and then withdrawn, but for whatever reasons the profile remained on the database and was found to match that taken from a crime scene, could lead to arguments as to the admissibility of such evidence in any subsequent criminal proceedings. Withdrawal of consent could also be a precursor to future illegal activity.”<sup>40</sup>

This irrevocability is at odds with consent to retention in other contexts, such as medical research, and seems to have been included only for reasons of practical convenience to NDNAD users. As we note in paragraph 3.12, if an individual wishes to withdraw their consent, but is not permitted to do so, their consent can no longer be seen as a moral justification for what would otherwise be an invasion of their privacy.

4.61 The permanent retention of samples from victims, witnesses and those invited to volunteer samples was criticised by many respondents to our consultation. The lack of evidence on the efficacy of keeping volunteer samples, and the potential risks and impact upon privacy, lead to questions of necessity and proportionality, and the benefits of keeping such bioinformation ‘just in case’. There should also be special consideration when the consent is given by a minor, with an appropriate adult countersigning the consent form. There is a particularly strong case that the minor should be able to revoke the earlier consent upon reaching adulthood. Such considerations also pertain to mentally impaired adults.

4.62 **It is our view that consent given by a volunteer to retain their biological samples and resulting profile on the NDNAD must be revocable at any time and without any requirement to give a reason. This is a basic principle in all medical research and should equally apply to the voluntary component of the NDNAD, as it already does to the Scottish DNA Database. In view of the importance of this principle, we recommend that as a matter of policy, volunteers should not be asked to consent to the permanent storage of elimination biological samples and retention of DNA profiles derived from these samples beyond the conclusion of the relevant case.**

### Equal treatment: black ethnic minorities

4.63 Attention has focused on the over-representation of members of black ethnic groups (at least as far as can be inferred from the ‘ethnic appearance code’ that accompanies profile records; see Box 1.3 and paragraphs 6.12–6.17) and the number of young persons (under 18) without criminal records on bioinformation databases. As at November 2006, there were 98,707 black males aged 15–24 on the NDNAD. Approximately 75 per cent of the NDNAD is comprised of profiles from white European individuals. Seven per cent of profiles are from ‘Afro-Caribbean’ individuals, compared with the three per cent proportion of Afro-Caribbean in the general population. Latest figures on the proportion of profiles on the NDNAD versus representation in the community suggest that one third of young black males are on the NDNAD, as compared with one eighth of young white males. Particular attention has been drawn to the numbers of ‘non-white’ samples retained from individuals who have not been convicted of an offence. In London, 55 per cent of the total number of innocent people on the NDNAD are black or Asian, while 29 per cent of the London population are black or Asian.<sup>41</sup>

4.64 A variety of views were expressed by consultation respondents on the significance of the

39. House of Commons Science and Technology Select Committee (2005) *Forensic Science on Trial*, paragraph 75.

40. UK Government (2005) *Forensic Science on Trial: Government Response*, p7.

41. John Reid MP, 11 June 2007, Written Answers, column 894W.

number of individuals from black ethnic minority groups on bioinformation databases. It is acknowledged that the disproportion is a reflection of police arrest practices and there is dispute over the fairness of those practices and the significance of the resulting over-representation of black ethnic groups. Some argue that the issue cannot be addressed by considering bioinformation collections in isolation from other issues shaping police practices in making arrests, while others believe that their disproportionate representation on such databases may further undermine black ethnic minority confidence in the justice system and diminish their chances of fair and equal treatment. It seems likely that the proposed retention of profiles and samples from all arrestees will further exacerbate these skewed proportions (see paragraph 4.21). This raises issues about equal treatment, as outlined in paragraphs 3.14–3.16. As mentioned there, the NDNAD Strategy Board has commissioned an Equality Impact Assessment of police sampling and ‘all policies and procedures relating to the NDNAD’.

4.65 The Home Affairs Select Committee has recently expressed concern about the disproportionate numbers of young black males on the NDNAD. In its report *Young Black People and the Criminal Justice System* (June 2007), it is stated that:

“It appears that we are moving unwittingly towards a situation where the majority of the black population will have their data stored on the DNA database. A larger proportion of innocent young black people will be held on the database than for other ethnicities given the small number of arrests which lead to convictions and the high arrest rate of young black people relative to young people of other ethnicities... It means that young black people who have committed no crime are far more likely to be on the database than young white people. It also means that young white criminals who have never been arrested are more likely to get away with crimes because they are not on the database. It is hard to see how either outcome can be justified on grounds of equity or of public confidence in the criminal justice system.”<sup>42</sup>

The Report goes on to recommend further research: “to determine the implications of so many black males being present on the NDNAD”.<sup>43</sup>

4.66 **In our view, the disproportionate over-representation of black ethnic minorities on the NDNAD is a matter of considerable concern, even if this arises from policing practice in making arrests rather than a fault with the NDNAD. Such disparities increase the risk of stigmatisation attendant on being known to have a profile on the NDNAD and can potentially lead to further alienation of whole ethnic communities. We therefore welcome the commissioning of an equality impact assessment by the NDNAD. This assessment should reveal the extent to which it is the discretionary use of powers of arrest or the use of sampling powers that contributes to over-representation of black ethnic minorities. The NDNAD and police forces will then be under a positive obligation to take effective steps to address this over-representation.<sup>44</sup> As we pointed out in paragraph 3.16, the promotion of equality of opportunity entails active steps to remove any practices that unjustifiably cause disparities between different groups.**

## Children and young persons

4.67 While it is unsurprising that young people are over-represented on forensic databases in light of the peak age of offending, this has provoked criticism. Young people feature predominantly in

42. Home Affairs Select Committee (2006) *Young Black People and the Criminal Justice System*, paragraph 33.

43. *Ibid.*, paragraph 319.

44. Race Relations Act 1976, as amended, s.71 and Sched.1A, paragraphs 55–60.

arrest statistics, with 330,800 arrests of 10 to 17-year-olds made in 2004/05 (although this is not the total number of minors arrested as some will be arrested more than once during the year), resulting in 195,483 disposals (a penalty or other conclusion of the case).<sup>45</sup> In 44 per cent of these cases, the disposal was by a reprimand or final warning, given to juveniles to try to keep them out of the criminal justice system. The Home Office estimate that about four per cent of 10 to 17-year-olds are arrested per year: just under a quarter of a million, and yet around half of arrests of juveniles do not lead to any finding of guilt, or any further action being taken.<sup>46</sup> Such statistics are important when considering the impact of the proposed changes by the Home Office to permit sampling of all those arrested (see paragraph 4.7). This would clearly encompass many juveniles, many of whom were actively being kept out of the criminal process, or whose arrest did not lead to any criminal proceedings.

4.68 Recent campaigns have highlighted the inclusion on bioinformation databases of children and young persons.<sup>47</sup> Statistics such as those below have prompted critical media attention:

- a total of 512,901 samples have been loaded onto the NDNAD, since its inception, from individuals aged under 16 at the time of sampling;<sup>48</sup>
- in October 2005, 741,605 of the 3,466,792 subject sample profiles retained on the NDNAD at that time related to people who were under 18 when their sample was obtained;<sup>49</sup>
- approximately two per cent of the subject samples presently on the NDNAD are from individuals sampled when they were under 14;<sup>50</sup>
- in December 2005 it was estimated that about 24,000 of the records on the NDNAD related to persons who were under 18 when their samples were obtained and against whom no further action was taken.<sup>51</sup>

4.69 The pattern of arrests, where no further action was taken, is reflected by the numbers of minors on the NDNAD who had not been charged or convicted of any offence. On 1 December 2005, there were 24,168 persons under 18 on the NDNAD who had not been charged or cautioned for any offence.<sup>52</sup> As of 1 February 2006, 541 of those 24,168 profiles had been matched to DNA recovered from unresolved crime scenes.<sup>53</sup> A further 27,000 persons on the NDNAD who had not been charged or cautioned for any offence were under 18 years of age at the time they were arrested and had a DNA sample taken but had reached 18 by 1 December 2005.<sup>54</sup> An unknown additional number will have been acquitted by a court.<sup>55</sup>

4.70 It may be argued that retaining bioinformation from young people is contrary to Article 40 of the UN Convention on the Rights of the Child, in that the Convention requires special attention to be given to the treatment of children by legal systems, to protect them from

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45. Home Office (2005) *Arrests for Recorded Crime (Notifiable Offences) and the Operation of Certain Police Powers under PACE 21/05 England and Wales, 2004/05*, Table AB, p3, available at: <http://www.homeoffice.gov.uk/rds/pdfs05/hosb2105.pdf>, accessed on: 13 July 2007.

46. Home Office (2006) *Young People and Crime: Findings from the 2005 Offending, Crime and Justice Survey*, Table 4a, p48, available at: [www.homeoffice.gov.uk/rds/pdfs06/hosb1706.pdf](http://www.homeoffice.gov.uk/rds/pdfs06/hosb1706.pdf), accessed on: 13 July 2007.

47. For example, campaigns by 'ARCH' – Action on Rights for Children; GeneWatch UK; [www.leavethemkidsalone.com](http://www.leavethemkidsalone.com); and Privacy International.

48. House of Commons, Hansard, 10 May 2007, column 430W.

49. National DNA Database (2007) *The National DNA Database Annual Report 2005–2006*, p33.

50. *Ibid.*, p33.

51. *Ibid.*, p33.

52. National DNA Database (2007) *The National DNA Database Annual Report 2005–2006*, p33.

53. Joint response to our consultation on behalf of the Association of Police Authorities, the Association of Chief Police Officers and the Home Office.

54. Written answer to a Parliamentary question by Hazel Blears, 2 May 2006.

55. At the end of 2005, there were about 200,300 people who had been acquitted but had their DNA profiles retained on the NDNAD. An unknown number of these were under 18. National DNA Database (2007) *The National DNA Database Annual Report 2005–2006*, p32.

stigma, and that if they have offended, opportunities for rehabilitation to be maximised. The destruction of relevant criminal justice records and accompanying body samples could comprise one element in such a rehabilitative process. At the same time, the Home Office and ACPO argue that sampling young offenders is useful because of their greater likelihood to go on and have extended criminal careers. This is supported by research in the United Kingdom using data from the British Offenders Index, which shows that the most significant variable in predicting length of criminal career is a first conviction before the age of 14.<sup>56</sup>

- 4.71 In our view, the policy of permanently retaining the bioinformation of minors is particularly sensitive in the United Kingdom, where the age of criminal responsibility is low (at age ten years in England and Wales and eight in Scotland) compared with many other countries. There is a separate youth justice system, in recognition of the special protections that should be afforded to children and young persons. The European Convention on Human Rights recognises the special case of children in the criminal justice system. The Supreme Court of Canada, while acknowledging the strong public interest in crime detection, has held that it was contrary to principles of the youth justice system to treat juveniles in the same way as adults, and that juvenile immaturity was a factor which militated against inclusion on the database.<sup>57</sup> Parental consent for sampling would not, in our view, negate concerns surrounding the retention of samples and profiles of minors.
- 4.72 **When considering requests for the removal of profiles from the NDNAD and the destruction of biological samples taken from minors (including from adults who were minors when the DNA was taken), we recommend that there should be a presumption in favour of the removal of all records, fingerprints and DNA profiles, and the destruction of samples. In deciding whether or not the presumption has been rebutted, account should be taken of factors such as:**
- the seriousness of offence;
  - previous arrests;
  - the outcome of the arrest;
  - the likelihood of this individual re-offending;
  - the danger to the public; and
  - any other special circumstances.

### A population-wide database?

- 4.73 The Home Office has proposed that there should be an extension of police powers to take bioinformation without consent from individuals arrested in connection with non-recordable offences (see paragraph 4.21), but it appears unlikely that powers will extend to taking samples from individuals before the point of arrest in the near future. Nevertheless, there is recurrent public discussion of the potential for a comprehensive DNA database holding the profiles of all the population. The recent proposal that fingerprints be used as a biometric identifier on the planned United Kingdom Identity Register may pave the way for the later inclusion of DNA profiles on such a universal register. 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,

56. Francis B, Soothill K and Piquero A (2007) *Estimation issues and generational changes in modelling criminal career length Crime and Delinquency* 53: 84–105.

57. *R v RC* [2005] 3 SCR 99 (Supreme Court of Canada).

but not identical fingerprints, making fingerprints the more obvious choice for a population-wide database for instant identification checks, should one be introduced.

- 4.74 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 bioinformation database [...] would remove the taint of discriminatory selection, of some people being stigmatised because their bioinformation and not others was held [...]. There would remain some potential for bioinformation being put to sinister use but that potential would be reduced by being held by an independent repository.” Indeed, the creation of an independent body, instead of the police, to hold the NDNAD has been suggested as a solution to many of the concerns highlighted in this Report and independence of oversight, in particular, is a critical issue that should be addressed in any consideration of the NDNAD (see Chapter 7).
- 4.75 There was equally strong support among consultation respondents, however, for the view that such databases should only hold information on those who had been proved to have committed criminal acts. Notwithstanding the proposed inclusion of fingerprints on the Identity Register, the joint response to our consultation from the Association of Police Authorities, ACPO and the Home Office argued that “It would be difficult to justify taking DNA and fingerprints from the majority of the population who do not come into contact with the criminal justice system if only on grounds of cost”, adding that there were (unspecified) “additional ethical and practical issues”. Even the use of existing blood-spot cards (which hold a drop of blood taken from a heel prick in every newborn) to compile such a database would be extremely expensive.<sup>58</sup> It may also be expected that parental consent for these ‘Guthrie spots’ would diminish if their use was to be extended to inclusion in forensic databases, and such a proposal does not account for practical or logistical difficulties, including issues of tracing individuals decades after their birth.
- 4.76 Drawing on our discussions in Chapter 3, we note that it would be compatible with a rights-based approach to accept a certain degree of intrusion into the individual liberty and privacy of all if this were necessary in order to avoid unacceptable discrimination. However, rights advocates could also argue that a population-wide database raises questions about proportionality: the increased risk to civil liberties would be compensated by only a negligible increase in public safety. In addition, there are also broader concerns that such a development would significantly shift the relationship between the individual and the state insofar as it treats all individuals as potential offenders rather than as citizens of good will and benign intent.
- 4.77 There is little reason to believe that the establishment of a population-wide database would in itself prevent discrimination in policing practice (e.g. in arrests and in taking samples) against certain vulnerable groups. A more effective way of countering discrimination is through changes in policing practice towards these groups (see paragraphs 4.63–4.66 for specific recommendations). There would also be increased dangers from ‘function creep’ (paragraphs 6.19–6.21), given that a population database would be a much more attractive resource to a wide variety of organisations, agencies and corporations. The security of such

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<sup>58</sup>In any event, as an important general policy, NHS services should not be diverted to this sort of purpose. It may be argued that if people cannot trust Guthrie card information to be used solely for the health benefit of their child, they may start refusing to allow the sample to be taken. This would have both personal and public financial consequences for children requiring lifelong institutional care because phenylketonuria and other illnesses had not been diagnosed at an age at which they could have been treated.

a database would be vital as 'leakages' could have very serious implications. Concerns about logistics and the accuracy of the data would be magnified with a database covering over 60 million people. Linkages with other databases would also become far more complex (see Chapter 7), with a number of ramifications to be considered and perhaps protected against, including the implications of a treaty permitting EU-wide access.

- 4.78 Further, the NDNAD was created to be a forensic database, specifically concerned with collecting data from what the police describe as the 'active criminal population', for no other reason than forensic purposes (or identification of the dead). There would be a need for far more wide-ranging and intensive public debate if a database were to be established which would extend its remit beyond this group (although some argue that it has already extended beyond active criminals) or beyond forensic purposes. Even those who believe in social solidarity and community obligations may object to a population-wide database on the grounds that, although assisting crime control, it would be seen as a significant step towards an unacceptable 'surveillance society'.
- 4.79 **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 and the detection of crime, and its potential for reducing discriminatory practices.