

## DNA database: analysis of offending figures

GeneWatch UK, November 2011

In September 2011, new data was released by the Home Office regarding the likelihood of future offending by persons who have been arrested for the first time.<sup>1</sup> These figures have been used by critics of the Protection of Freedoms Bill to claim that “every year, 23,000 people, who under Labour’s system would be on a DNA database will, under government plans go on to commit further offences” and that this will allow 23,000 people to become victims of crime in the future.<sup>2</sup> This claim is incorrect because it fails to take account of the limited role of the DNA database in solving crimes.

### Where do the figures come from?

The Home Office study is based on follow-up of all 84,256 people with no previous sanctions who were arrested during the period April to July 2006.<sup>3</sup> Data from the Police National Computer (PNC) allows estimates to be made of how many of these people receive a sanction (i.e. a conviction, caution, reprimand or final warning) for a future recordable offence. Because the outcomes of some cases are still pending, there is some uncertainty in the estimates of likelihood of future offending, which is shown as an upper and lower bound in the graphs in the report.

The Home Office Economics and Resource Analysis Group has then calculated tables showing the number of innocent individuals who will have their DNA profiles retained on the National DNA Database after a given policy has been implemented for a certain length of time, and the percentage of these people who will later have their profiles retained because they receive a sanction for a further recordable offence.<sup>4</sup>

The first of these tables (on page 6) estimates what would happen if all innocent people’s DNA profiles are retained, following collection on arrest. After six years, there would be 773,000 innocent people’s DNA profiles retained: 28% of these would belong to people who had been sanctioned for a further offence and therefore could expect to have their DNA “retained on proven” (8.3% of these sanctions would be for the more serious offences contained on the ‘Scottish List’). Averaged over the six years, this would mean that an estimated 36,000 people who had previously been arrested but not sanctioned are expected to be sanctioned for a recordable offence each year (10,700 of these for ‘Scottish List’ offences).

The second of these tables (on page 7) estimates that 194,000 innocent people will have their DNA profiles retained after 3 years if persons arrested for ‘Scottish List’ offences have their profiles retained on arrest. Of these, 20% would belong to people who had been sanctioned for a further offence and therefore could expect to have their DNA “retained on proven” (7.0% of these sanctions would be for the more serious offences contained on the ‘Scottish List’). Averaged over the three years, this would mean that an estimated 13,000 people in this category (i.e. persons who had been arrested for a single ‘Scottish List’ offence) who had previously been arrested but not sanctioned would be sanctioned for a recordable offence each year (4,500 of these for ‘Scottish List’ offences). Subtracting this 13,000 figure from 36,000 gives 23,000 people who are expected to offend each year who will not have their DNA profiles retained if the measures in the Protection of Freedoms Bill are adopted, compared to the measures in the Crime and Security Act (which allow retention

of all arrested persons' DNA profiles for six years).<sup>5</sup> In fact the number is likely to be somewhat higher than this, because the Bill allows retention on arrest for a qualifying offence only in specific circumstances, with retention on charge with a qualifying offence being automatic. On the other hand, the Bill also allows for some persons to have their DNA profiles retained for 5 years, rather than three, if approved by the Biometrics Commissioner, which will reduce the figure. The exact number of profiles retained temporarily will also depend on what counts as a 'qualifying offence' in the Bill and whether this is more or less extensive than the 'Scottish list' offences used in the calculations. Because of these uncertainties, the analysis that follows uses the higher total of 36,000 people a year that are expected to commit a further offence despite being found innocent on arrest for a first recordable offence, despite the fact that some of these profiles will be retained temporarily under the proposals in the Bill.

### **What do the figures mean?**

The figures do not mean that 23,000 crimes a year will not be solved if the proposals in the Bill are implemented. This is because very few of these people who are rearrested and then sanctioned for crimes will be involved in crimes that would have been solved only if their DNA profile had been kept on the database. The reasons for this are (i) DNA evidence is relevant to solving only a tiny minority of crimes; and (ii) most crimes solved using DNA involve a DNA match with a known suspect or with a stored crime scene DNA profile, not with a stored DNA profile from an individual.

Using the higher figure of 36,000 persons a year estimated to be rearrested and sanctioned for a recordable offence following a first arrest with no sanction, it is possible to estimate how many of these crimes might have been solved using individuals' DNA profiles, were they to be retained on the National DNA Database.

The total number of detections for all recordable crimes in 2008/09 was 1,335,777.<sup>6</sup> DNA detections comprised 17,463 of these detections, i.e. 1.3%.<sup>7</sup> Therefore, of the 36,000 people a year sanctioned for a recordable offence, only 470 (1.3% of 36,000) will have involved a DNA detection. DNA detections are of three types: GeneWatch has previously estimated (based on limited data) that 42% involve a DNA match with a known suspect who has already been identified by other means; 46% involve a match between an arrested person's DNA profile and a stored crime scene DNA profile; and 12% involve a match between a new crime scene DNA profile and an individual's DNA profile stored on the DNA database.<sup>8</sup> This means of the 470 DNA detections, only 56 (12% of 470) are likely to have needed the individual's DNA profile to be stored. This amounts to about 28 convictions a year (including 8 for 'Scottish List' offences), because only about half of DNA detections lead to a conviction.<sup>9</sup> Of these estimated 28 convictions a year, the majority would be delayed not lost since any future arrest of the individual would lead to a match being made between their DNA profile and the relevant crime scene DNA profile (which would be stored indefinitely if it did not match an individual's profile when it was loaded onto the database).

It should be noted there are significant uncertainties in these figures because there is very limited data to calculate proportion of detections that require the DNA database; and because detections that arise through an unexpected 'cold hit' using the database may be less likely to lead to convictions due to the difficulties in obtaining corroborating evidence for use in court.<sup>10</sup>

The vast majority of DNA detections relate to volume crimes. In 2008/09 0.98% of DNA detections were for rape and 0.4% for homicide (murder plus manslaughter). This suggests that of the 28 estimated convictions 0.27 might be for rape (about one every 3 to 4 years) and 0.11 for homicide (about one every ten years). However, this would be an overestimate because the proportion of 'cold hits' in rape and murder cases is likely to be lower than for volume crimes, due to the fact that most murderers and rapists are known to their victims. This means that perpetrators of these types of crime are more likely to have their DNA taken as 'known suspects' rather than being identified using the DNA database. These figures are consistent with (but lower than) the previous estimates GeneWatch provided to the Home Affairs Committee in 2010. They are also consistent with the difficulties critics of the Bill appear to find in identifying relevant individual cases (see below).

The proposals in the Protection of Freedoms Bill mitigate against any of these rare cases going undetected in reality, by allowing retention for three to five years of DNA profiles taken from persons charged with (or, in some cases, arrested for) qualifying offences. Because the numbers provided are so small, statistical analysis cannot easily quantify the impacts of these proposals on crime detection rates. However, it is clear that they will reduce the chances of any negative impact on crime detection, particularly for serious cases.

### **Individual cases**

Numerous individual cases have been cited in support of retaining innocent individuals' DNA on the National DNA Database. However, closer inspection of these cases has repeatedly revealed that most would not be affected by proposals in the Bill.<sup>11</sup> Over the ten year period since legislation was introduced to retain innocent people's DNA profiles there have been no examples of murder cases cited in parliament or the press that would have remained unsolved had innocent people's DNA profiles been taken off the database.

For example, Steve Wright (convicted of the Ipswich murders) had a prior conviction for theft and his DNA profile was already on the database, he was also a known suspect who had been stopped twice by the police before the crime scene DNA profile was obtained, since his car had been identified.<sup>12,13,14</sup> Mark Dixie (convicted of murdering Sally Ann Bowman)<sup>15</sup> was identified when his DNA was taken following a fight in a bar, nine months after the murder.<sup>16</sup> The case therefore relied on the retention of the crime scene DNA profile, not Dixie's own DNA. Dixie also had previous convictions for crimes which took place before the Database was established.

Similarly, only crime scene DNA profiles need to be retained in order to exonerate innocent people and overturn miscarriages of justice: a wrongly convicted or suspected person can have their DNA taken from at any time, without the need for them to have their DNA profile stored on a database.

In contrast, there have been several cases where police failure to collect DNA from a known suspect for a crime has resulted in failure to catch a serial offender who has gone on to attack additional victims.

Delroy Grant (the Night Stalker)<sup>17</sup> was convicted in 2011 of a long string of frightening sexual attacks on elderly people whilst burgling their London homes. Operation Minstead, set up to track him down, focused on his DNA profile for many years: this had been obtained from several linked crime scenes but was not on the DNA database. Police undertook mass screenings of DNA from black men with motorbikes in South London, causing loss of trust in black communities: it subsequently turned out that Grant did not use a motorbike. They also

used ancestral DNA techniques which wrongly predicted that the suspect came from the Windward Islands: he turned out to be from Jamaica. A police blunder in 1999 meant Grant was never interviewed in connection with a burglary thought to be linked to the attacks, despite his car number plate being spotted by a witness. Although police visited his house, he was out and they failed to return to question him or take his DNA. Grant was then wrongly eliminated from inquiries because the DNA from the crime scenes did not match another Delroy Grant, who did have a record on the DNA database. Grant was ultimately caught when the police abandoned their focus on DNA and instead flooded the area with large numbers of undercover officers.

Kirk Reid<sup>18</sup> was arrested for multiple sexual attacks in 2008: police believe he may have committed at least 71 offences. Multiple attacks in 2001 had been linked by the same DNA profile, which was not on the DNA database. Police missed opportunities to arrest Reid and take his DNA in 2002 and 2004 following tip offs by members of the public, leaving him free to reoffend for several years.

John Worboys<sup>19</sup> was a black-cab driver who remained at large to drug, rape and sexually assault at least 85 victims despite numerous women reporting attacks over many years. A 21-year old victim reported Worboys in July 2007 and he was identified by his cab number in CCTV footage but officers chose to believe his account, not hers. About seven more women were attacked by Worboys before his second arrest in February 2008.

Robert Napper<sup>20</sup> killed Rachel Nickell in front of her son on Wimbledon Common in July 1992. Napper's mother had tipped off police in 1989 that her son had confessed to raping a woman on Plumstead Common: he was not interviewed and no DNA sample was taken. He is thought to have been responsible for a string of violent sexual attacks on women. Napper was eliminated from the original Nickell inquiry for being too tall and Colin Stagg was charged instead. Soon afterwards Napper killed Samantha Bissett and her four-year-old daughter: he was later identified using his fingerprints.

These cases suggest that "widening the net" to retain innocent individuals' DNA profiles on the DNA database has been the wrong priority compared to taking DNA from known suspects for a crime.

*Note: The first version of this briefing incorrectly stated that Stagg was wrongly convicted: in fact his trial collapsed.*

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## References

<sup>1</sup> Available on: <http://www.homeoffice.gov.uk/about-us/freedom-of-information/released-information1/foi-archive-about-us/18310-DNA-retention-policy-stats/>

<sup>2</sup> David Hanson, MP. House of Commons Hansard, 10 October 2011, column 110.

<http://www.theyworkforyou.com/debates/?id=2011-10-10a.96.2&s=DNA#g109.1>

<sup>3</sup> DNA retention policy: Results of analysis relating to the protections of 'the Scottish model'. Home Office. September 2011. <http://www.homeoffice.gov.uk/about-us/freedom-of-information/released-information1/foi-archive-about-us/18310-DNA-retention-policy-stats/18310-DNA-retention-policy-stats?view=Binary>

<sup>4</sup> Extracts from a submission from the Home Office Economics and Resource Analysis Group to the Parliamentary Under-Secretary of State for Crime Prevention entitled, 'DNA retention – Analysis of arrest-to-conviction data', July 2010. <http://www.homeoffice.gov.uk/about-us/freedom-of->

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<sup>5</sup> This calculation is reported on the website FullFact at:

[http://fullfact.org/factchecks/DNA\\_retention\\_Freedoms\\_Bill\\_Yvette\\_Cooper-3035](http://fullfact.org/factchecks/DNA_retention_Freedoms_Bill_Yvette_Cooper-3035)

<sup>6</sup> Home Office (2009). Crime in England and Wales 2008/09.

<http://webarchive.nationalarchives.gov.uk/201110220105210/http://rds.homeoffice.gov.uk/rds/crimeew0809.html>

<sup>7</sup> National DNA Database Annual Report 2007-09. <http://www.npia.police.uk/en/docs/NDNAD07-09-LR.pdf>

<sup>8</sup> GeneWatch UK (2010) Submission to the Home Affairs Committee: the National DNA database. January 2010.

[http://www.genewatch.org/uploads/f03c6d66a9b354535738483c1c3d49e4/GWsub\\_Jan10.doc](http://www.genewatch.org/uploads/f03c6d66a9b354535738483c1c3d49e4/GWsub_Jan10.doc)

<sup>9</sup> The National DNA Database Annual Report 2002-03. (p26).

[http://www.forensic.gov.uk/forensic/news/press\\_releases/2003/NDNAD\\_Annual\\_Report\\_02-03.pdf](http://www.forensic.gov.uk/forensic/news/press_releases/2003/NDNAD_Annual_Report_02-03.pdf)

<sup>10</sup> Home Office circular 58 / 2004. Charges on Basis of Speculative Search Match on the National DNA Database. <http://www.homeoffice.gov.uk/about-us/corporate-publications-strategy/home-office-circulars/circulars-2004/058-2004/>

<sup>11</sup> For example, the case of KL, cited by the previous Government in the European Court in December 2008, and in the Home Office consultation “Keeping the Right People on the DNA Database” in 2009, supposedly involved a rapist identified as a result of having his DNA retained on arrest for a previous alleged minor offence. However, a letter from KL’s solicitor to the BBC, copied to GeneWatch, confirms that KL was first identified by the victim, not through his DNA (as is common in most rape cases). The case rested on an issue of disputed consent, which cannot be resolved using DNA.

<sup>12</sup> Steve Wright guilty of Suffolk murders. The Guardian. 21<sup>st</sup> February 2008.

<http://www.guardian.co.uk/uk/2008/feb/21/steve.wright.guilty>

<sup>13</sup> Fresco A (2008) Scientists’ elation at finding DNA that led to a murderer. The Times. 22<sup>nd</sup> February 2008. <http://www.timesonline.co.uk/tol/news/uk/crime/article3410814.ece>

<sup>14</sup> FSS (2007) Forensic Science Service Fact Sheet: Successful cases.

[http://www.prospect.org.uk/dl/pdf/23236\\_2715422172.pdf/as/2011-00328-Letter-Successful-FSS-cases-Version-10-03-2011.pdf](http://www.prospect.org.uk/dl/pdf/23236_2715422172.pdf/as/2011-00328-Letter-Successful-FSS-cases-Version-10-03-2011.pdf)

<sup>15</sup> FSS (2007) Forensic Science Service Fact Sheet: Successful cases.

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<sup>16</sup> Kelly J (2008) DNA database debate urged. BBC Online. <http://news.bbc.co.uk/1/hi/uk/7259494.stm>

<sup>17</sup> Night Stalker: police blunders delayed arrest of Delroy Grant. The Telegraph. 24<sup>th</sup> March 2011.

<http://www.telegraph.co.uk/news/uknews/crime/8397585/Night-Stalker-police-blunders-delayed-arrest-of-Delroy-Grant.html>

<sup>18</sup> Blunders kept sex attacker free. BBC Online. 26<sup>th</sup> March 2009.

<http://news.bbc.co.uk/1/hi/uk/7965809.stm>

<sup>19</sup> Police errors left rapist John Worboys free to strike – but no officers face sack. The Guardian. 20<sup>th</sup> January 2010. <http://www.guardian.co.uk/uk/2010/jan/20/police-ipcc-john-worboys-errors>

<sup>20</sup> Rachel’s killer caught by new DNA techniques. The Independent. 18<sup>th</sup> December 2008.

<http://www.independent.co.uk/news/uk/crime/rachels-killer-caught-by-new-dna-techniques-1203073.html>