

This response was submitted to the consultation held by the Nuffield Council on Bioethics on the Forensic use of bioinformation: ethical issues between November 2006 to January 2007. The views expressed are solely those of the respondent(s) and not those of the Council.

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List of questions

1. The interpretation of bioinformation

a. In your view, is the SGM Plus® system, which uses ten STR markers, sufficiently reliable for use in ascertaining the identity of suspects in criminal investigations and/or criminal trials?

I would need more information than is provided in the consultation brief to be satisfied as to the reliability of the SGM Plus system in ascertaining the identity of suspects in criminal investigations. It does appear that the technique provides sufficient reliability to be used as strong but not overwhelming evidence, particularly when caveats as to partial profiles or related individuals are taken into account. This does not mean that it should necessarily be the only evidence, but taken with other factors it may provide sufficient material to justify a conviction.

There seem to be three issues with the use of genetic markers:

□□It is not proven that this gives a unique match. Indeed the brief suggests the opposite –that the distribution of markers is random, making it entirely possible (albeit unlikely) that a pattern may be repeated even in unrelated individuals. The supporting information also indicates that samples from identical twins would themselves be identical, and that those from related individuals would be similar. Thus the accurate interpretation of results is as important as the results themselves.

□□It must be recognised that forensic scientists, just like any other human beings, will make mistakes both in the collection and in the analysis and interpretation of samples (perhaps particularly when there is public pressure to achieve results). This possibility of mistakes needs to be recognised when material is used in a court of law.

□□Although a sample of genetic material may correctly identify that an individual was present at a scene, it does not follow that they were present at the time the crime took place. This factor must also be taken into account in making use of genetic material.

What could go wrong? On the basis that it is at least as bad to convict the innocent as to release the guilty it is worth

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looking to see if there are scenarios where this could happen using SGM Plus. It is easy to find one that is not particularly far-fetched:

□□A sample from a crime scene is found to be a close match for an individual (either by chance or because the actual perpetrator was a close relative of the individual). The individual was alone at the time of the crime and so unable to provide any evidence of not being at the scene.

2. Sampling powers

a. From whom should the police be able to take fingerprints and DNA samples? At what stages in criminal investigations and for what purposes? Should the police be able to request further information from DNA analysts, such as physical characteristics or ethnic inferences?

The police should be able to take fingerprints and DNA samples from anyone reasonably thought to have been at the scene of a significant crime, where taking the sample is likely to help to identify the perpetrator (including eliminating innocent bystanders from the investigation). The definition of "significant" is difficult but important - it obviously should include violent crimes, probably theft, and probably injury or damage-causing traffic offences. It probably should not include offences which could be described as "victimless", for example speeding and other traffic offences where no accident occurred, minor offences such as dropping litter, or peaceful (but perhaps unlawful) demonstrations.

Where police are given powers to take fingerprints or DNA evidence from individuals then they should be able to do so as soon as it is clear that there is a reasonable likelihood of there being forensic evidence to match the samples against. See later questions for discussion of the retention of samples.

The police should be able to extract any information from DNA samples found at a crime scene that is likely to help to identify the DNA source. Not to allow this would be perverse, rather like not allowing eyewitnesses to describe the colour of a person seen running from a crime scene. However, where DNA samples have already been matched with an individual there is no justification for any further analysis of those samples.

b. Should police expenditure on bioinformation collection and analysis be given priority over other budgetary demands?

The police budget should be directed towards the spending most likely to provide results in terms of crime detection or prevention. This is bound to require spending on a variety of

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tools, techniques, and activities. There should not be a single track focus on bioinformation, because that will reduce capability where the bioinformation is inadequate or irrelevant. The effectiveness of bioinformation techniques in identifying individuals and placing them at a crime scene implies that it should take a significant proportion of spending. However, that spending should be focussed on the specific requirements of solving individual crimes, and should not be used for building up databases of information about the population at large (which, as discussed below, is an infringement of personal privacy that is unlikely to help with crime detection).

c. Do you consider the current criteria for the collection of bioinformation to be proportionate to the aims of preventing, investigating, detecting and prosecuting criminal offences? In particular: is the retention of bioinformation from those who are not convicted of an offence proportionate to the needs of law enforcement?

The indefinite retention of bioinformation for those not convicted of a crime is way beyond the needs of law enforcement. This is dealt with more fully under question 3a.

The police should not undertake large-scale "voluntary" testing. It effectively isn't voluntary - declining to be tested will be taken as an indication of having something to hide rather than a wish to maintain ones privacy. If a murder occurs in your street the police should not be approaching

you as a potential suspect for no better reason than general proximity. If there was reason to believe that you had been at the crime scene then that would be a different matter - even if you are not a suspect it would be reasonable to ask for bioinformation to eliminate you from traces at the scene (but not then to retain the information indefinitely).

d. Is it acceptable for bioinformation to be taken from minors and for their DNA profiles to be put on the NDNAD?

Since minors commit crimes there seems to be no strong reason why minors should be treated any differently from adults in the initial collection of samples. The exception to this is to do with the retention of the information, where minors should not be regarded as able to give informed consent. However, as discussed below, it is not appropriate to retain genetic material indefinitely for those not proved to be responsible for a crime.

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3. The management of the NDNAD

a. Is it proportionate for bioinformation from i) suspects and ii) volunteers to be kept on forensic databases indefinitely? Should criminal justice and elimination samples also be kept indefinitely? How should the discretion of Chief Constables to remove profiles and samples from the NDNAD be exercised and overseen?

There is no justification for the indefinite retention of bioinformation about innocent individuals, which means anyone not found guilty in a court of law. The removal and destruction of both profiles and samples for these individuals should be mandatory and not at the discretion of chief constables (who could not be expected to do other than to prefer retention).

The only samples that should be retained are those for people successfully prosecuted, and perhaps those who admit guilt and are given a formal caution. Even in those cases it may be appropriate (depending on the nature of the original offence) to remove the samples after a predetermined interval rather than retaining them indefinitely. For example it seems excessive to retain samples and profiles to the end of his life for an 18 year old convicted of burglary who then commits no further offence. It would be sensible to set time limits for the retention of samples and profiles related to the severity of the crime - for example 5 years after the completion of a prison sentence, probably longer for certain crimes of violence, perhaps longer for repeat offenders.

It may seem attractive to say that anyone formally charged with an offence should be liable to have bioinformation retained, on the basis that they have put themselves in the frame, even if the case has subsequently not been made. That is illogical - only the courts determine guilt, and if someone is innocent (that is to say has not been found guilty) then they should be treated as any other innocent party (even when the police "know" that they have the right person).

Obviously this applies equally to "volunteered" bioinformation, which should be removed (both sample and record) as soon as it has been established that there is no match to the crime scene, or when a match has been used to eliminate an innocent bystander.

Why worry about this? There are two reasons. One is that it is simply improper for the state to retain information about its citizens that it does not need for conducting legitimate state business. The second lies in the risk that information will later be used for purposes other than that for which it was initially gathered. A repressive state has as one of its key tools detailed information about its citizens. Without for

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a moment suggesting that today's British state is repressive we have no magic protection other than our own wariness. Other states have from time to time descended into total control of their population, part of it informed by zealous record-keeping. It is therefore essential that every defence is deployed, including preventing the state from holding information (of any kind, but certainly including bioinformation) that isn't essential to doing the job, and only for the duration for which it is essential for that job. Even leaving aside the risk of the state becoming repressive in a political sense there remains the risk of over-zealous law enforcement becoming oppressive. For example, as DNA analysis becomes cheaper and faster it would be quite possible to analyse the DNA on every dropped cigarette butt or piece of litter and use the information to identify the individual who dropped it and issue an on-the-spot fine. That would be no more than enforcing existing laws and regulations, but surely most would agree that it would be oppressive. Although law is black and white real life is not, and the citizen's bargain with the state needs to allow a degree of leeway. Unfortunately over-zealous officialdom is also part of life, and the citizen needs protection against this.

Is there any penalty for not retaining bioinformation samples and records? Probably not. Although the idea of having a massive database to check against is superficially attractive the fact is that if for example the police take a sample of my DNA as part of their investigation into a murder in my street then they will in due course eliminate me from their investigations. So when there's a future (unconnected) murder somewhere else in the town, will it help them if my DNA profile is recorded? No - because I still won't be a murderer. All it would do is slow down the cross referencing by a few milliseconds.

What about the case of pattern matching? Suppose we have two murders in our town. The crime scenes suggest that they were committed by the same individual, but police were unable to identify (or more to the point to charge) a suspect after the first murder. As more information became available from the second murder would any advantage accrue from having a wide range of DNA profiles on the database? Only the minor administrative one of not having to resample potentially the same group of people (we're assuming the crimes occur some time apart - or the bioinformation of innocents might still be within its retention period). There are two cases - either a DNA match was made at the first scene or it was not. If it was, then the fact of the match is established (and would be a matter of legitimate record, at least until the crime has been solved). If the same profile is found at the second scene then the

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same match is established. If no match is achieved in the first scene then there would be no match to the same profile at the second scene - a wider population sample would be needed. If there was a new profile at the second scene the match to the volunteers for the first scene would be fortuitous, but in any case could be achieved by retesting them (if the crime scenes are sufficiently similar then those in the frame for testing in the first would be in the frame for the second). The possible need for retesting a few individuals is a small price to pay for the wider individual security achieved.

b. Is the ethical oversight of the NDNAD adequate? What, if any, research on NDNAD profiles or samples should be permitted? Who should be involved in the oversight of such databases and granting permission to use forensic DNA profiles or samples for research?

There appears to be very little ethical oversight of the NDNAD, which appears to be growing with little or no regard for ethics. The position would be more satisfactory if oversight was placed with a non-governmental group with a majority of members nominated by recognised human rights groups.

Research should not be permitted on samples or profiles collected for the purpose of investigating crimes, for two reasons. First, research should not be carried out using individuals' genetic information without their free and informed consent, and this will not be achieved if crime records are used (and many of those from whom samples are collected are unlikely to have sufficient understanding of genetics to enable informed consent). Second, the more people who are given access to the information the less it is possible to assure privacy.

c. Who should have access to information on the NDNAD and IDENT1 databases and how should bioinformation be protected from unauthorised uses and users? Should forensic databases ever be made available for non-criminal investigations, such as parental searches, or the identification of missing or deceased persons?

One further argument for not retaining bioinformation is that it is impossible fully to protect against unauthorised use when a large number of individuals have legitimate access. There is no point in pretending that corruption does not occur. If the information is stored then at some time it will be extracted by legitimate users for non-legitimate purposes. Compare for example the misuse of the data held on the DVLA database, for example to pass details of individuals to animal rights activists. For the same reason access should not be available other than for the purpose for which it was collected - criminal investigation. There is no reason why even a criminal's DNA profile should be shared with others.

This presupposes acceptance of the principle of not storing

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"non-criminal" profiles. If these were to be stored then the participants may wish to gain benefits - but being identified as a parent may not be what they had in mind!

d. What issues are raised by the transfer of bioinformation between agencies and countries? How should such transfers be facilitated and what safeguards should be in place for the storage and use of transferred data?

Once information is transferred to other countries it is entirely out of our control, regardless of any "safeguards" that might be agreed. So in general bioinformation should not be transferred abroad. Clearly there is some need associated with international criminal investigation, but that could be met by transferring sample information from crime scenes for checking against other countries' databases rather than by sharing the content of the databases. Only if a match was found might it be appropriate to transfer details of the individual –and then only if the crime was one which would be recognised as such in the UK.

4. Ethical issues

a. Is the use of DNA profiles in 'familial searching' inquiries proportionate to the needs of criminal investigations? Do you consider the use of familial searching may be an unwarranted invasion of family privacy?

There is clearly a risk of substantial intrusion if DNA records are used for family matching. For this reason it would be inappropriate to use records of innocent individuals for this purpose. There is an argument that those who commit criminal offences sacrifice some of their rights to privacy, so it may be possible to make a case for familial searching amongst the records of convicted criminals. Under the proposals above DNA records for innocent individuals would not in any case be available for familial searching.

b. Certain groups, such as ethnic minorities and young males, are disproportionately represented on forensic databases. Is this potential for bias within these databases acceptable?

Of course there should be a bias in the bioinformation databases! They should predominantly (exclusively?) contain bioinformation about criminals. If it happens that one gender or racial or ethnic group is overrepresented in the crime figures then this should be reflected in the bioinformation databases. The bias would only be a problem if the databases were being used for research and were assumed to represent the population at large. This further supports the argument for not using the databases for research.

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c. Is it acceptable that volunteers (such as victims, witnesses, mass screen volunteers) also have their profiles retained on the NDNAD? Should consent be irrevocable for individuals who agree initially to the retention of samples voluntarily given to the police? Are the provisions for obtaining consent appropriate? Should volunteers be able to withdraw their consent at a later stage?

It is entirely wrong to retain information about volunteers on the NDNAD indefinitely (as discussed above). Even if it were allowed by consent (it shouldn't be, because people will feel pressured to give consent) then this consent should be capable of being revoked at any time. For one thing this would maintain pressure on the authorities to keep the databases secure and used only for their proper purposes, in order to maintain the consents. Second, people's circumstances change and their beliefs change. They should not be bound for ever by a decision that they made 5, 10, 20, 40 years ago.

d. Would the collection of DNA from everyone at birth be more equitable than collecting samples from only those who come into contact with the criminal justice system? Would the establishment of such a population-wide forensic database be proportionate to the needs of law enforcement? What are the arguments for and against an extension of the database?

The most equitable solution would be to ensure that no DNA information is retained other than for convicted criminals. The idea of collecting DNA from everyone at birth is attractive only for those who wish to create a police state. The large majority of people live their lives without committing any significant offence, and there is thus no genuine benefit in collecting DNA for them. The holding of a universal database conjures up a nightmare picture of a state in which every movement of its citizens can be controlled. Such action would be entirely disproportionate to the needs of the investigation of crime. As discussed above DNA samples should only be retained for criminals. No one needs to commit crime so the equity is in everyone having the same opportunity not to have their DNA samples retained.

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5. The evidential value of bioinformation

a. What should be done to ensure that police, legal professionals, witnesses and jury members have sufficient understanding of any forensic bioinformation relevant to their participation in the criminal justice system?

Police, legal professionals (including magistrates and judges) should receive training in the use of DNA and other bioinformation to ensure that they have a proper understanding of what can and cannot be achieved using it. Whenever a prosecution seeks to rely on bioinformation the prosecuting team should take steps to make sure that the reliability or otherwise of this evidence is fully understood by the jury (this should not be left solely to the defence). This must include an understanding of the possibility of errors and the possible similarity of samples from related individuals.

b. How much other evidence should be required before a defendant can be convicted in a case with a declared DNA match? Should a DNA match ever be taken to be sufficient to prove guilt in the absence of other evidence?

It is difficult to imagine a safe conviction being achieved solely on the basis of a declared DNA profile match. First, the match only proves presence at the scene at some time, not necessarily at the time of the crime. Nor does it prove commission of the crime (with the possible exception of rape). If the accused contests presence, and particularly if he or she is able to produce alternative evidence of presence elsewhere, then this casts doubt on the reliability of the DNA evidence. The implication would be that either a mistake was made in the analysis, or the DNA sample does not indicate a unique individual. Either way there appear to be considerable risks in using DNA alone as a means of achieving a conviction

6. Other issues

a. Are there any other issues, within our terms of reference, which we should consider?

It would be worth considering the handling of medical information derived from a DNA sample (for example relating to a hereditary disease) where that knowledge may have an impact on other family members. It may be appropriate to suppress the use of such material in court – but doing so may adversely affect the outcome of a trial. Ensuring suitable counselling was made available to family members might be an alternative approach.