



Circuits of Surveillance*

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Abstract

This paper examines the increasing police use of DNA profiling and databasing as a developing instrumentality of modern state surveillance. It briefly notes previously published work on a variety of surveillance technologies and their role in the governance of social action and social order. It then argues that there are important differences amongst the ways in which several such technologies construct and use identificatory artefacts, their orientations to human subjectivity, and their role in the governmentality of citizens and others. The paper then describes the novel and powerful form of bio-surveillance offered by DNA profiling and illustrates this by reference to an ongoing empirical study of the police uses of the UK National DNA Database for the investigation of crime. It is argued that DNA profiling and databasing enable the construction of a 'closed circuit' of surveillance of a defined population.

Introduction

The multiplicity of ways in which modern forms of government seek and use knowledge about their citizens has engendered a considerable body of research and debate. Following the seminal work of Foucault, generic - and differing - accounts of this multiplex have been provided by writers like Ericson and Haggerty (1997), Garland (2001), Rose (1999, 2000), Lyon (1991 & 2001) and Lyon and Zureik (1996). In addition, a series of more detailed enquires have examined the adoption and adaptation by modern states of a series of scientific and technological supports for corroborating the identities of present subjects and inferring the identities of absent ones. These have included studies of: 'machineries of identification' (e.g. Caplan and Torpey, 2001); the regulation of movement within and between nation states (e.g. Torpey, 1998, 2000); the growth of the use of 'forensic sciences' in support of criminal investigations (e.g. Eco and Sebeok, 1983, Valier, 1998 & 2001, and Spufford and Uglow, 1996); and the trajectories of a

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number of specific forensic technologies (e.g. Cole, 2001, Lambourne, 1984, Sengoopta, 2003).

In the final decade of the last century, students of state and industrial surveillance focused particular attention on the technologically assisted visual surveillance of public and quasi-public spaces (especially in urban environments) and on the computer facilitated surveillance of local, national and trans-national verbal and commercial exchanges. The uses of these forms of surveillance have been supported by the creation of complex 'information infrastructures' (Lyon 2001: 54) which extend the positive and panoptic powers of a range of public and private organisations. The practices and effects of these technologies have been especially well described in a series of UK empirical studies (see especially Norris and Armstrong, 1999, Norris et al., 1996, Ditton et al., 1999).

Since the events of September 11th 2001, state and commercial investment in the development, testing and validation of new and updated surveillance technologies has considerably increased. In particular, the US 'Department of Homeland Security' has been given a large budget for the development and implementation of biometric identifiers with a range of potential uses. Its 'Total Information Awareness' programme has recently been renamed 'Terrorist Information Awareness', presumably to reduce its provocative connotations. In the UK, a recent consultation paper on 'Entitlement Cards and Identity Fraud' (Home Office, 2002) has proposed the use of iris patterns as a suitable unique identifier able to bolt the personal identity of citizens to a portable, authoritative and information rich document capable of reliably corroborating the unique identity of any particular claimant to state resources. At the same time, more and more public and private organisations are requiring their staff and users to carry with them 'proofs of identity' which control access to some or all of the organisations spaces and resources, 'proofs' which often contain 'appropriate' biometric identifier to validate the connection between the 'proof' and the body of the individual who offers it.

In this paper we consider some of the conceptual features and practical outcomes of this recent trajectory by focusing attention on the unique character of a new form of 'bio-surveillance' with properties that make use of the most recent knowledge of the nature of human bodily individuality. This new form of bio-surveillance is derived from recently developed techniques of molecular biology which have made possible the isolation and analysis of human genetic material that makes possible the 'DNA profiling' (originally DNA 'fingerprinting') of individuals.

A brief background to DNA profiling

DNA profiling has quickly been adopted by law enforcement agencies across the UK and has displaced an earlier reliance on blood groups for the identification and differentiation of individuals. Between 1900 and the early 1980's, the 'class identification' of individuals was based on ABO blood groups, according to which human blood cells fell into four inherited 'antigenic' groups: A, B, AB and O. Subsequently, additional red blood systems were discovered along with other polymorphic markers based on serum proteins and enzymes. A number of these were often used for criminal identification, corroboration or elimination, but recent years have seen a marked shift from the analysis and use of the protein products of DNA (in blood, semen

and other bodily fluids) to confirm or disconfirm involvement in a crime to the analysis and use of nuclear DNA itself.

Since the early 1980's, molecular biologists have identified three main types of genetic markers: those based on repeat sequences in DNA; those based on systems with sex-specific transmission; and those based on alternative sequences found at particular nucleotide sites in the genome. It is variants of the former type that have become the focus of forensic uses and have therefore provided the basis for DNA profiling and databasing. Studies in the mid-1980's (Gill et al., 1985, Jeffreys et al., 1985) established that forensic samples from potentially crime relevant objects could contain sufficient quantities and quality of DNA suitable for profiling. These objects include blood, semen, saliva, hair, dandruff, skin, vaginal and nasal secretions, sweat and urine.

The possibility of deriving DNA from the unintentionally 'abandoned property' of criminal suspects left at crime scene generated huge interest amongst investigators. The UK Forensic Science Service (FSS), along with other state and commercial organisations in the US and the UK, quickly instigated research programmes which focused on techniques for the production of DNA profiles from crime scenes capable of being reliably compared with profiles derived from samples taken directly from criminal suspects by the police. Further technological advances and judicial decisions served both to standardise the use, and ensure the acceptability of DNA profiling in a range of criminal jurisdictions, and also to lower the cost of their production by the use of high through-put robotic processing. These factors, along with appropriate legislative support, have made possible the rapid worldwide introduction and accumulation of DNA databases to support crime investigation as well as to facilitate the identification of disaster victims and otherwise unidentified dead bodies.

It is the argument of this paper that the establishment and expansion of the National DNA Database (NDNAD) by the 43 police forces of England and Wales constitutes a canonical instance of this new form of surveillance. Whilst the practical applications of the NDNAD bear some similarities to those of previous and existing governmental technologies, there are also subtle innovations in its substantive composition and operational use. The NDNAD does not provide a mechanism of surveillance like that imagined by Foucault's description of disciplinary observation, nor does it function through forms of governmentality which are imagined to produce self governing subjects. Rather, its affordances extend the strategies associated with disciplinary power to a new set of tactics aimed, not at surveilling a whole population nor at the production of a self-conscious subject (although the latter may be a recursive effect of its use), but instead at the effective capture and use of genetic information from a defined section of the community. The objective of such surveillance is to facilitate the genetic identification of individuals as potential suspects or eliminated innocents in current investigations and, in addition, to file and retain such identifiers in a searchable archive for use in future investigations. This aim is not new, but the method for its accomplishment is. As such it has important implications for how surveillance can and will work in the future.

Strategies and tactics of surveillance: from preconstructive to reconstructive identification

Foucault's work has already been widely applied to suggest how surveillance technologies work upon, and through, the social body – producing both the docility of disciplinary subjection (as outlined in Foucault, 1977) and self referential forms of conduct (as expressed in Foucault, 1988; 1990). However we find that these are not particularly useful ways to consider the new types of surveillance which employ genetic analysis. We suggest that these changes demonstrate a powerful new development in the forms of surveillance available to those tasked with the government of the conduct of contemporary subjects. In developing our own perspective we agree with Valier that there are important differences between the 'reconstructive perspective of criminal detection' (Valier 2001: 428) and the 'future oriented practices' (Valier 2001: 427) that drive contemporary forms of visual and transactional surveillance. However we also think that recent developments in forensic uses of molecular biology merit reconsideration of any distinction between 'reactive detection' and 'proactive surveillance'. It is part of the argument of this paper that this distinction overlooks the multidimensional character of the technical and organisational differences and overlaps amongst the various forms of detection and surveillance used by government and commercial agencies in contemporary society. The remainder of this section takes up this claim in more detail.

The variety of techniques capable of enabling successful observation of criminal actions and agents can be grouped into two overall categories which we designate here as either 'preconstructive' or 'reconstructive' instrumentalities. Preconstructive surveillance gathers information about any members of a population of individuals whose bodily actions and appearances are observed and recorded by their operators in the course of their accomplishment. The canonical contemporary example of such a preconstructive instrument is the CCTV camera and the tapes that it records. Traditionally, it is these preconstructive mechanisms of surveillance that have been characterised as 'panoptic' in their operation. Foucault offered the model of the Panopticon to explicate the disciplinary trends of modern society and the intricate enmeshing of subjects in relations of surveillance. One characteristic of the panoptic operation of power is universal: 'visibility is a trap' (Foucault 1977: 200). Panoptic power may be somewhat fictitious - for Foucault it operates by inducing in subjects a mode of subjection which is built on the *potential* for permanent observation rather than the permanence itself - but such tactics of surveillance are nevertheless employed in contemporary society in a vast number of different ways. These tactics operate by introducing into the social world ways of recording the movements of bodies, both individual and collective, and the routine examination of these records for the identification of the bodies of the subjects captured by them.

An alternative instrumentality - reconstructive surveillance - seeks to capture information that will facilitate the identification of individuals whose bodily presence and actions were invisible to any direct observational technologies in the place and at the time that they happened. The defining aspect of these reconstructive technologies is that they are applied retrospectively. Persons and their actions are not 'watched' but are inferentially 'reconstructed' by expert practitioners in and through the course of criminal investigations. The canonical instance of such reconstructive instrumentality is provided by the variety of fingerprint powders used by crime scene examiners

and the fingerprint revealed through skilled application. Whilst Valier (2001: 42-3) argues that such detection practices largely serve to point up 'blind spots that fracture the uninterrupted visibility crucial to panopticism', we prefer to recognise that police investigations may make use of either or both of these types of surveillance in the attempt to identify suspects at whom further investigative action may be targeted.

It is clear that both types of instrumentalities of surveillance may be used to witness or reconstruct particular human actions and to identify specific human subjects. For example, a CCTV tape may record an action later categorised as 'an assault' while a fingerprint may reveal a 'point of entry' to a burgled house. Likewise, a person might be 'recognised' by an operator viewing the taped record, or 'identified' by their unique pattern of finger papillary ridges.

However, each of these two types of surveillance may be further differentiated by whether or not each variant within the types draw upon pre-existing archived information to support the achievement of recognitions and identifications in practice. There is an important distinction between an 'open system' of surveillance which operates without a set of records searchable by reference to those attributes that are directly captured by the technology in question, and a 'closed system' of surveillance which is supported by the availability of a relevant archive that can be searched by reference to such technologically relevant attributes.

The deployment of particular instances of both preconstructive and reconstructive surveillance technologies is shaped by the differences between these open or closed modalities. In its open manifestations, preconstructive surveillance comprises instruments of observation aimed at an undifferentiated subject population with the objective of rendering visible a range of potentially 'suspicious' activities. This is not surveillance directed at individual 'suspects' but, as Gary Marx (2002) has argued, a type of observation which is aimed at detecting the suspect behaviour of those whose identity is not known beforehand. The effectiveness of such surveillance, if it is to be meaningfully translated into individual detection, relies on its ability to provide a means of identifying either or both activities and individuals – what is being done and who is doing it.

Surveillance technologies can be employed to provide enhancement of visual or auditory power without the corresponding support of searchable identity archives. For example, CCTV cameras in public or quasi public spaces provide highly discriminating images of individuals in the course of actions, but operators of such systems are often still expected to be able to identify individuals through memory (sometimes aided by a gallery of images of the usual suspects) and interpret the intentions and the consequences of actions through the interrogation of ordinary appearances. Visibility may be a trap, but it is not a wholly effective one. Even where CCTV cameras capture the suspicious activity of individuals, unless law enforcement agents are deployed to the scene immediately the recorded information will not necessarily secure later detection. Subsequent identification may be possible (for example by disseminating recorded images through various media and inviting identifications from those who recognise individuals), but this becomes haphazard and expensive in a society in which individuals increasingly come to adopt disguises and use other devices for the reduction of their own visibility.

However, the potential for increasing the power of any surveillance technology lies in closing the gap between initial observation and subsequent identification. In other words, to close the circuit of surveillance so that identification follows from observation. This is true for both preconstructive and reconstructive instrumentalities: closure markedly increases the effectiveness of their deployment. For example when preconstructive systems are used to capture car number plates instead of facial and interactional appearances, computer records may be searched. Yet even here the determination of the identity of drivers and passengers of such vehicles remains problematic.

Historically the development of reconstructive instrumentalities has been intimately connected to the availability of searchable identity archives capable of facilitating identification through previously obtained and held information. First introduced for the verification of the identification of apprehended persons, their gradual deployment in support of crime scene examinations required additional technical refinement and the training of expert personnel. Some of these have been condemned to failure (e.g. anthropometry) while others have been declared a success (e.g. fingerprints). All require standardised methods for the capture, processing, representation and reporting of visual, audio, digital or textual traces of the bodies and actions of individual persons. These methods are relied on by others to construct credible inferences about the personal identity, courses of action and social relationships that are the focus of interest. Such inferences may in turn be used to shape further investigations of varying temporal and social reach and/or to contribute to authoritative accounts for use in criminal prosecutions.

Visualising, Differentiating and Filing

Latour's (1986) assertion of the centrality of practices of 'visualisation' in all forms of scientific and technological enterprises encourages us to consider the 'broad array of research tools and practices for making natural objects visible; practices for uncovering hidden features; magnifying objects and enhancing analyzability; facilitating measurement and comparison; and making things publicly witnessable, intelligible and accountable' (Lynch 2001: 16289). Others have followed this lead in order to reveal the variety of ways in which the work of visualisation is shaped by and in turn shapes scientific practice in a number of different disciplinary and historical contexts (see for example: Lynch and Woolgar, 1990; Tufte 1990 and 1997; Valier 2001). In the case of biological material capable of yielding DNA, a range of instrumental, analytical and representational technologies are involved at each of the many stages of its discovery and investigative deployment by relevant expert forensic practitioners involved in the criminal justice process. Selected features of this process are described in the following paragraphs in order to give a sense of the technical and organisational heterogeneity and complexity of the kinds of visualisation practice that are included within it.

Consider for example the routine discovery of what is first available to the naked eye of a crime scene examiner as a reddish brown stain on the broken glass of the window of a burgled house. The accuracy of the initial intuition that this stain may be blood from a cut sustained by a person who entered the house through the broken window will first be assessed by the application of a suitable presumptive screening test. In the UK at the time of writing, this test is likely to the

Kastle-Meyer test which uses the acid-based indicator phenolphthalin, colourless in an alkaline solution but which is oxidised by peroxide in the presence of haemoglobin into phenolphthalein and so turns bright pink. Following this chromatic visualisation afforded by the presumptive test it is likely that the scene examiner will collect the blood and submit it to a laboratory for characterisation through DNA profiling. Following the extraction and amplification of DNA from the sample, the profile of the DNA will be determined by the use of fast automated genetic analyzers which offer new visualisations of the genetic material – this time as a series of peaks on a graph displayed on a computer monitor. Each peak represents the number of particular repeated tetrameters at a predetermined ‘locus’ or site on the human genome exhibited by this particular individual, and the complete set of such peaks represent the persons individual DNA profile. Subsequently these graphical representations are further revisualised as a set of numbers arrived at by comparing the results at each locus to internationally recognised reference systems that enumerate each possible variation. Finally it is this set of numbers that is used to characterise each individual profile held in a DNA database so that a collection of such profiles derived from different sources (e.g. a crime scene stain and an individual donor) may be compared with one another to determine whether or not they match.

Thus a forensic DNA database can be thought of as a filing cabinet for a collection of these visualizations of identity. Formally, the database functions rather as a photographic or a fingerprint archive does; that is by storing a signifier of identity which can be later recovered for the purpose of establishing a link between crime scenes or between a crime scene and an individual. The essential power of a DNA database rests on its usability as a closed system reconstructive instrument. It can be employed to make seemingly indefinite retrospective identifications because it draws on a large information archive to enable this. Whilst reconstructive modalities of surveillance are not new, the combination of this modality with a highly powerful and automated technological apparatus means that such databases function in a particularly novel way. The attraction of any DNA database or registry lies in its power to deliver an instance of reconstructive surveillance in which detection of an individual through the use of an archive is rendered ‘automatic’. Automatic here denotes the ‘engine’ of the archive, not the work which is done prior and subsequently to its use. DNA profiling, databasing, searching and matching were deliberately developed in order to provide evidence of the presence and identity of individuals using novel and exceptionally powerful technologies of molecular biology and also facilitated by sophisticated bio-informatic computer resources.

DNA profiling is not targeted at bodies (although it relies on ‘traces’ left by the body) and does not seek to differentiate between individuals through direct observation of their activities. Nor do DNA databases work through the observation of the actions of known or unknown individuals as they happen. Rather, they allow investigators to capture past actions through the artefactualisation and informatisation of the residual presences of individuals at what are designated ‘crime scenes’. This is the manner in which all reconstructive technologies work: sometimes they rely on traces of the body (like fingerprints) or at other times they are traces of presence left in the memories of witnesses (which are then exploited to make identifications using photographic records). Yet, regardless of the techniques used, all reconstructive systems of identification function through making a connection between a crime scene and a stored record in an archive.

Like fingerprints, and other trace materials collected as forensic evidence, the potential for identification is afforded by the efficiency of available archival support but, unlike those archival systems, DNA databases have a speed, efficiency, automation, and accuracy which are unmatched in the history of policing. It is this potential for such databases to constitute a closed circuit of surveillance, that can deliver a permanent and continual method of bio-identification, which has attracted the strong financial and legislative support of several UK governments since the early 1990's.

Making the Archive: the UK Way

Prior to the introduction of the NDNAD, DNA profiling in the UK was largely confined to use in the investigation of serious crime. In 1994 the Criminal Justice and Public Order Act (which can be seen as the foundation legislation for the database) afforded the police the power to take DNA samples (in the form of 'non-intimate' mouth swabs) from those charged with any recordable offence. At that time the practical problems of doing this – the cost of collecting samples from crime scenes and the lack of personnel to do so, the cost of processing the samples, and the backlog at the FSS – meant that DNA profiling remained limited in its use. Yet, spectacular early successes of identifications and detections produced a high profile for the NDNAD. Whilst these cases remained largely confined to the investigation of murder and rape there were examples of the power of the NDNAD to detect serious offenders after their arrest for lesser crimes. For example, in 1998 the police arrested Keith Samuels for tendering stolen cheques and, in the course of their investigation, a DNA profile was generated and loaded on to the database. Samuels was linked to a series of rapes spanning 6 years and in 1999 he was convicted and received nine life sentences.

The story of Samuels' detection is an example of the central idea which has fuelled the development of the NDNAD as an instrument of reconstructive surveillance. The 'traces' which Samuels left at the scenes of each of his crimes had been collected, profiled, and retained by the police and added to the NDNAD. It is thus the archive, and not just DNA profiling, which allows this identificatory power. Without an archive the capabilities of reconstructive surveillance offered by genetic profiling, which could only be applied in an open manner on a case-by-case basis, are limited in scope. The archive closes the gap by linking the crime scene profile to the already databased offender profile. In the Samuels case the archive profile was generated after the crime scene stain was entered onto the database. Yet the technology offers a way of imagining a much more effective and systematic type of surveillance. For if Samuels' genetic profile had already been contained on the database prior to him committing rape, his detection would have been assured much earlier.

It is this vision, of a database which could assure automatic criminal detection, which has formed the basis for government support of this extensive archive. It is difficult to calculate the exact amount of government expenditure on the database but the 'DNA Expansion Programme' first announced in 1999 will have cost roughly two hundred million pounds by April 2004. The exact amount of funding is less important than the commitment to fund the database in this way. The

Expansion Programme has been aimed at both extending and intensifying the use of DNA: extension through funding the collection of DNA both from more suspects and more crime scenes; intensification through developing analytical technologies capable of sequencing smaller and more degraded samples. The government commitment to these two aims reflected a general ambition to expand the collection of DNA into the routine investigation of volume crime, an ambition that has now largely been realised.

Prior to the Expansion Programme, the use of genetic profiling by the police had already produced significant improvements in identification and detection rates. As early as July 1996, when the database had been running for less than one year, the FSS announced that 14,000 'hits' had been made (matches made between either DNA profiles taken from suspects and crime scene stains, or between crime scenes themselves) and unveiled plans to open a second database unit in London to cope with the large number of Criminal Justice and crime scene samples provided by the police for DNA sequencing and profile matching. Almost immediately, after it went live, the database promised spectacular results. Since then, the story of the database is one of consistent expansion. Yet this growth, which has produced a continual and dramatic rise in recorded hits made on the database (in July 2003, the FSS claimed that 'in a typical month matches are found linking suspects to 15 murders, 31 rapes and 770 motor vehicle crimes'), has demanded significant investment and planning.

The DNA Expansion Programme has driven the vast increase in the collection of DNA samples from an expanded amount of offenders (more than two million of these profiles are now contained on the database) and encouraged the routine sampling of a much wider range of crime scenes. Crime scene collection has been aided by the employment of more scene examiners and a vast increase in budget allocation for these personnel costs. The greater spending power of the police has provided a high increase in funding for the FSS which, in turn, has expanded its operation considerably and contributed to the development of faster and more sensitive processing capabilities. Alongside these developments, further legislative provision affords the police the power to retain the genetic profiles and samples of those arrested but never charged or convicted of any recordable offence.

Two intermeshed strategies therefore direct the expansion of genetic profiling by the police in the UK: the first is the extension of the collection of DNA samples from a wider pool of the population and from crime scenes; the second is the retention of those samples and profiles in a database. The aim, as previously stated, is to enable an instrument of reconstructive surveillance which can operate in a closed manner capable of delivering fast, accurate and permanent identification. It is therefore not surprising to find that the DNA Expansion Programme spawned a number of rhetorical statements which act as justifications for the intensification of this gaze of surveillance. Centrally this has been the idea of constructing a database comprising the entire 'active criminal population' with the aim of capturing all 'active criminals' in this closed system of surveillance so that, once placed in this archive, they are permanently subject to a continual - but seemingly 'unintrusive' - form of bio-visibility.

Closing the Circuit of Surveillance in the 21st Century

The aims and ambitions of the state to achieve closed forms of surveillance are not new. Nor are the ideas about the ‘types’ of subjects on which it is focused. We use the expression of the closed circuit of surveillance to draw attention to two idealisations that inform contemporary state and commercial organisations as they seek to develop and extend this new form of bio-surveillance over citizens and others: the resources and tactics whose routine deployment operationalizes this surveillance and the kinds of subjects that such surveillance effects. Although the tactics and applications of the NDNAD are contemporary they are being applied to problems informed by much older ideas and much older rhetorical figures. The historical desire to operationalize a closed circuit of surveillance over the recidivist criminal has found its contemporary form in the pool of repeat offenders who make up the ‘active criminal population’. The aim of the NDNAD is to capture this group of offenders within its closed circuit archive in order to assure future detection.

This aim itself is an old ambition. In 1869 Parliament enacted the Habitual Criminals Act which allowed for the keeping of a ‘Habitual Criminals Register’ (Higgs, 2001). The idea of the register is somewhat similar to the ideas which underpin the NDNAD: that is, that those who have committed or been suspected of committing a crime pose the threat of future offending. The failure of the criminal register in the nineteenth century, and the failure of many archival sources since, is that, as noted above, there is often a gap between the archive and its capacity to deliver identification. Fingerprint archives offer a biometric mechanism, deemed to rely on unique individual identifiers, which can match traces left at crime scenes with stored records. Yet, aside from the ongoing debate about the certainty of fingerprint identifications (beginning with Evett and Williams, 1989), the automation of fingerprint archives in the form of the UK National Automated Fingerprint Identification System remains essentially problematic and the process of matching crime scene fingermarks to the fingerprint records of individuals still relies on expert identifiers and their ‘opinion’.

The NDNAD promises to close the gap between archival information and criminal detection by engendering a form of bio-visibility which renders subjects identifiable and detectable. Yet this is not a surveillance aimed at the whole population but, rather, at specific types of people who, once having been associated with criminal activities, are added to the ‘list of suspects’ (as the FSS describe it). At present anyone can be included on this list of suspects once arrested for any recordable offence. Approximately 300,000 persons every year are arrested but not subsequently charged and are now included on the NDNAD. The inherent assumption which drives this proposal is obvious: it is the idea that those who come to the attention of the police do so with good reason and that the likelihood is that they will do so again. Yet this is never made explicit in government discourse where database expansion is justified on the vague notion that an ‘increased pool’ of suspects will aid detection. This is, of course, true in that any increase in the amount of individuals captured by the database will heighten match probability. The problem for the government comes in trying to justify why retaining the DNA profiles of those category of innocent people who have come to the attention of the police, as opposed to those innocent people who have not, is valuable for intelligence. Without the notion of the recidivist offender there would be no value in doing so.

However, the NDNAD is not only a new technology applied to older concerns about criminality. Whilst the long standing ideal of the ‘criminal type’ underwrites the expansion of genetic surveillance, placing DNA profiling within a longer historical trajectory of methods designed to effect certain forms of social control, the specific deployment of DNA databasing is also tied to new state conceptions about crime and sociality. These are changing ideas about citizenship, about rights and responsibilities, and about the balance between the rights of the perpetrators and the victims of crime. The application of the NDNAD as a reconstructive surveillance instrument is rendered more understandable when we consider it in the context of these changing conceptions. Rose has argued that a new ‘game of power’, introduced in advanced liberal states as a ‘community-civility game’ (1999: 188), has contributed to the redefinition of the broadest questions about the social control of those deemed in need of governance by those authorized to govern. Rose suggests that there has been a reconfiguration of the practices that we most associate with disciplinary society – that is, a panoptic surveillance aimed at intervening in the social world to provide an effective treatment for defective behaviour; a ‘moral architecture’ as Lyon (1991) terms it – to a type of surveillance which is essentially concerned with the ‘management’ of those already deemed criminal. In this sense, the use of the NDNAD is not aimed at the ‘correction’ of offenders but at delimiting them from the wider population and managing them through assured detection. As Rose argues: ‘This makes power more effective – because changing individuals is difficult and ineffective – and it also makes power less obtrusive – thus diminishing its political and moral fallout’ (1999: 236).

If we think of the NDNAD in this way then it becomes a tactic which is employed within a broader repertoire of instruments aimed at managing the ‘risky conduct’ of individuals through a heightened means of identification and detection. We can therefore add to the contributing factors which have enabled the development of the database – scientific progress, legislative provision, and economic investment – a more fundamental shift in the conception of how we should manage the ‘criminal population’. The NDNAD represents the deployment of an actuarial technique designed to control a specific population by confining them, not within geographical space, but through the dispersed trap of enhanced detection. This should allay the fear of those concerned that the government is attempting to create a national DNA database by ‘back door methods’. It isn’t, because it has no reason to do so. The NDNAD is not universal in its ambitions for it operates through one fundamental division: that between ‘criminal suspects’ and ‘law abiding citizens’. The interesting thing to monitor is how individuals from one group are moved into another and where the line between the two is drawn now and in the future.

Conclusion

The attraction of DNA profiling for forensic application is found in its ability to vastly increase the power of reconstructive identification. The numerous and fast developments of the procedure have enabled the quantitative and qualitative expansion of its use by the state to support the detection of crime. The power of the technology for this purpose is to be found in a number of key features: DNA profiling has a discriminatory power to uniquely identify individuals which is unprecedented; its capacity to analyze smaller and smaller trace materials found at crime scenes,

sometimes long after an event, is continually expanding; and DNA profiles can be loaded onto a powerful computerized and automated system capable of enacting continual speculative searching of high numbers of retained profiles. These features have lead DNA to be regarded by some as an ‘omnipresent witness’ capable of providing incontestable and objective evidence of individual identification at any crime scene. While there may be reasons to contest this characterisation, this type of forensic technology has proved to be effective and cost effective in its support to criminal investigations. Accordingly, its use has been strongly supported both by political rhetoric and financial resources.

The development of DNA profiling and the implementation of increasingly comprehensive DNA profile databases are dependent on the objectification of fundamental features of the bodies of individual subjects. Yet this particular molecule is both ‘of the body’ and ‘is the body’; DNA cannot be eliminated from a body (as both fingerprints and iris patterns can), and it is the only biometric identifier which we all and always necessarily share. The NDNAD does not therefore ‘biologically tag’ individuals but exploits the molecular biology of the body to render each nucleated cell as a tag, as something which is permanently marked and which permanently marks us. The existence and deployment of this technology not only affords the objective identification of human subjects, it also affords new forms of subjective identification. It creates a new category of subjects, enables their continued and indefinite surveillance and its makes public the results of its application. It places a defined section of the community under permanent surveillance yet it watches no one. It captures individuals by the threat of permanent exposure and it achieves this, not through incarceration, but through dispersal. The database promises nothing short of a spectral intervention into criminal activity by forming the permanent shadow of an ever present witness.

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