Multiple views of DNA surveillance: the surveilled, the surveillants and the academics[1]

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1 Introduction

Current state concerns with security and controlling crime have led to an increasing number of governments investing in a variety of bio-information technology to manage the risks posed by criminal elements and terrorist groups. Chief amongst these technologies has been DNA profiling, frequently described as the gold standard for identifying individuals, and thus an important tool in crime prevention, detection and deterrence. The introduction of DNA profiling and databasing into the criminal justice system has assumed the role of a new 'language of truth' (Lynch, Cole, McNally & Jordan 2010). A growing number of countries across the globe are making efforts to develop computerised forensic DNA databases that will enable the authorities to compare profiles from crime scenes and subjects on an automated basis. This kind of 'bio-surveillance' has been satisfying the state's growing appetite for the storage and retrieval of personal information that can be used to identify and classify people.

The management of DNA profiles of 'genetic suspects' (Hindmarsh & Prainsack, 2010) serves the purposes of surveillance and control constructed under the scrutiny of contemporary societies. Different cultural representations and assessments of current and future scenarios created by forensic genetic databases circulate within present-day societies. Debating bio-surveillance is complex as it involves a wide range of ways to capture information about physical and biological traces

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the human body can leave that can ascertain whether a person has been in a particular place or in contact with other people or objects, which might include DNA and fingerprints (trace evidence), iris scans, photographs, or images on CCTV cameras. The most controversial aspects of DNA databases for forensic purposes are related with normative and ethical issues, leading to the question of usefulness versus costs and risks. DNA databases represent a strengthening of the powers of the state for the sake of the collective good – security and tranquillity. In many jurisdictions the establishment and successive expansion of centralised DNA databases for forensic and police uses have been largely based upon efforts and aspirations of key criminal justice and forensic science stakeholders to ensure that more offenders are prosecuted and deterred from re-offending. However, these objectives may imply restricting or limiting citizens' rights, freedoms and privileges. What sort of guarantees can ensure the protection of individual rights and freedoms that are expected in a democratic society – the right to privacy, physical and moral integrity, the right to non self-incrimination and the presumption of innocence?

Different positions reflecting the key ethical, legal, social and cultural implications of DNA databases are shaping patterns of governance and regulation of bio-information at both global and national levels. The stakeholders' arguments reflect both an enthusiasm for its potential benefits in terms of efficient criminal investigation, crime prevention and deterrence, as well as concerns and uncertainties surrounding the social and ethical implications of the uses of genetic information. For instance, some stakeholders, in the areas of politics, forensic sciences and the justice system, maintain that the creation and expansion of DNA databases will help to reduce the need for costly alternatives, such as the use of traditional investigative techniques (McCartney, 2004), and to prevent miscarriages of justice (Garrett, 2010), and that offenders may be deterred from further criminal activity because of the increased risk of detection (Beauregard & Bouchard, 2010). However, academic researchers, advisory bodies, and civil organisations have raised ethical and political considerations that maintain that the primary obligation of the state – the protection of the public from criminal activities – must be exercised with due respect for a number of ethical values, in particular liberty, autonomy, privacy, informed consent and equality (McCartney, Williams & Wilson, 2010).

While scholarly discourses tend to focus on the oppressive elements of DNA profiling and surveillance (see, for example, Cole, 2002; Lazer, 2004; Lynch & McCally, 2009; Lyon, 2007; McCartney, 2004,), political and public discourses usually highlight the benefits of forensic DNA technology in fighting and preventing crime (Hindmarsh & Prainsack, 2010; Williams & Johnson, 2008). In both scenarios, there is little empirical evidence to support their assumptions. For instance, it is yet to be proven that DNA databases for forensic and police purposes have the effect of preventing and deterring crime (Nuffield Council on Bioethics, 2007); and very few published research explores the use of forensic

identification evidence and its impacts on the various stages of the criminal justice process (Peterson, Sommers, Baskin & Johnson, 2010).

In this chapter, we will identify the attitudes towards DNA surveillance expressed by a wide range of social actors in the Portuguese context: on the one hand, the perceptions of Portuguese prison inmates; on the other hand, the representations constructed by professionals working for the state in law, forensic genetics and policing, as well as the perspectives of academics working in the fields of law and psychology in this country. More specifically, we aim to embrace complexity and interrelatedness by exploring the many connections constructed by the various actors in mobilising DNA technology for crime prevention and deterrence. We will focus on how ideas are produced through a network of heterogeneous actors (Mopas, 2007) in which social actions are ordered and organised to reproduce the social order and accomplish certain objectives (Manning, 2002). Our analysis will provide insights into the various points of view surrounding the questions raised by the surveilled, the surveillants and academics on issues of inclusion/exclusion, privacy/security and reintegration/suspicion. Our intention is to promote public discussion in order to formulate new guidelines and reconfigure regulation of this 'novel' method of surveillance – DNA profiling and databasing. Thus, we will focus on topics such as assessment of the value of DNA in deterring crime, and the social construction of stigma and the reconfiguration of individual rights and identities which are being forged by the collection, storage and management of genetic information.

2 The legal background

Following international trends regarding the use of genetics for criminal investigation purposes and strategies for the identification, prevention and deterrence of criminal activities, a DNA database was created in Portugal for criminal and civil identification purposes, in accordance with Act 5/2008 of 12 February. The process of inserting DNA profiles into the DNA database has already begun, but it is still very limited in size.[2] Portuguese legislation on the DNA database appears to be restrictive with regard to criteria for the inclusion and removal of profiles, potentially offering better protection for individual rights in comparison to other legal frameworks in Europe (Van Camp & Dierickx, 2007). In fact, Portuguese law only allows for the inclusion of profiles from convicted individuals sentenced to a term of imprisonment of three years or more, unlike other countries (such as, Spain, Sweden, Switzerland and the United Kingdom) where the DNA profiles of mere suspects are inserted into databases.

2. Portugese press news in June 2012 stated that only 600 profiles were included in the DNA database since its creation in 2008. Causes for the lower than expected growth were associated with the restrictive nature of the legislation and financial costs.

In addition, this legal instrument enables the profile of convicted criminals to be removed after judicial proceedings have ended or at the end of the maximum statutory limit for criminal proceedings stipulated in the Penal Code, a maximum of ten years after the sentence has been served (Article 26.1 of Act 5/2008). This contrasts with the legislation in some countries (Austria and the United Kingdom) which allows the profiles of convicted individuals to remain in the database indefinitely, and does not order the destruction of biological samples. Under a separate provision, Portuguese legislation seeks to ensure that each and every individual has the opportunity to resume life in society 'free' from any official record that might directly identify them as a previous offender, in accordance with a humanitarian tradition in the Portuguese penal system that dates back to the nineteenth century (Santos & Gomes, 2003).

In this study we wanted to explore how different groups evaluate the two main topics related to DNA databases: the possible deterrence effect on criminal activities and the fact that the storage of personal data – including DNA profiles – in a centralised database involves potential threats to a range of individual rights, namely the presumption of innocence, as it shifts attention towards *potential* offenders and re-offenders and thus reinforces an atmosphere of prospective policing (Williams & Johnson, 2008). A second topic that we considered challenging to assess, from the point of view of various social actors, was the potential for social rehabilitation and reintegration that the Portuguese forensic DNA database can actually offer, considering that Portuguese legislation has stipulated the removal of the profiles after a certain period of being loaded in the database, in order to insure the opportunity for ex-prisoners to be re-integrated into society with a clean trajectory cleared of any official record that could directly identify him or her as a perpetrator of past crime.

3 Methodology

The first step in gathering the various views on DNA surveillance was to understand the narratives of offenders, since we assumed that the possible deterrent effects that a forensic DNA database may, or may not, provide should also be considered from the prisoners' perspective (Duster, 2006; Prainsack, 2010). Hence a qualitative study based on 31 in-depth interviews with male prisoners in the north of Portugal was carried out between May and September 2009 to survey their perceptions of forensic technology, criminal investigation and surveillance (Machado, Cunha, Miranda & Santos, 2010). We interviewed male prisoners only because approximately 95% of all prisoners in Portugal were male at the

time we conducted our interviews.[3] We devised a theoretical sample, based on representativeness by diversity and exemplariness (Hamel, Dufour & Fortin, 1993), combined with convenience sampling by considering the individuals that would be more predisposed to participate in this study, according to the information gathered by the administration in each prison.

We obtained a diversified sample in terms of criminal record (type of crime and duration of the sentencing) and socio-demographic characterisation. At the time the interviews took place, the ages of the prisoners ranged between 21 and 54 years. 17 of them were between 25 and 35 years old. Most participants were single (n=22) and Portuguese (n=30). The education level of the interviewees varied between 4 years of schooling (n=6) and a higher education degree (n=1), but 22 had no more than 9 years of schooling. The professional occupation of most interviewees previous to incarceration was in the secondary sector of the economy, namely in civil construction and industry (n=21).

The prisoners interviewed were mostly primary offenders (n=24) and the crimes which led to their incarceration were: homicide (n=11); rape and/or sexual abuse of minors (n=8); theft (n=8); drug trafficking (n=4); driving without a licence (n=2); and fraud (n=1). The length of the sentences varied between under three years to 25 years. We must emphasise that 20 of the 31 interviewed inmates were given a sentence which was between five and 20 years in prison.

The prison inmates were asked about certain legal provisions concerning DNA databasing in Portugal, namely the criteria for profile inclusion and removal, and the potential of the DNA database to prevent and deter crime, and promote social reintegration. The tapes were transcribed verbatim and transcripts of the interviews were checked for transcription accuracy. Participants' oral consent to conduct and record the interviews was obtained after they were told that they could refuse to answer any question and that anonymity was guaranteed. The qualitative data were then systematically coded and aggregated around the abovementioned two core themes that will be explored in this article. The data was analysed by two researchers and, as the analysis evolved, themes were discussed with a third expert. In the case of conceptual difference, it was reflected upon and resolved by further joint debate.

In September 2010 a one-day 'think tank' was organised with the aim of discussing the main findings of the study conducted with prisoners. The main aim of this meeting was to provide a basis for a reflection that could, perhaps, inform the practices of the professionals involved in the establishment and operation of

3. According to official statistics provided by the Portuguese General Board of Prison Services, on 31 December 2009, 613 (5.5%) out of a total of 11,099 individuals serving prison sentences were female (DGSP, 2009).

the Portuguese DNA database.[4] We invited individuals working for the state in law, forensic genetics and policing, and academics in the fields of law and psychology to attend this discussion. The selection was made on the basis of the relevancy of their work to the establishment and operation of the Portuguese DNA database. Eight experts with the following institutional responsibilities participated in the meeting: a legal expert responsible for the establishment and operation of the law for the Portuguese DNA criminal investigation database; a forensic scientist in charge of managing the DNA database; a legal expert from the supervisory body which controls the activities associated with the DNA database; a member of the criminal investigation police; a forensic genetics laboratory technician; and three academics in the fields of law and psychology.

This meeting aimed to address three primary issues pertaining to the benefits, risks, uncertainties and effects of the use of DNA databasing for surveillance purposes and crime fighting: inclusion/exclusion, privacy/security and reintegration/suspicion. We sought to compare various views on DNA surveillance, as we expected that, from the outset, some would reflect a confident enthusiasm for its potential benefits and the increased efficiency it would bring to criminal investigation work, whilst others would emphasise a shared uneasiness and concern for the uses of this information in terms of citizen privacy, integrity and consent (for example, with regard to the collection of biological samples and the insertion or removal of DNA profiles from the database). The qualitative data were systematically coded and aggregated around the abovementioned core themes that will be explored in this article. The data was analysed by two researchers and, as the analysis evolved, themes were discussed with a third expert.

In short, we aimed to compare views on DNA surveillance expressed by academics, professionals working for the state, and prisoners. The meeting was therefore promoted, not so much with a view to simply presenting the findings of a study on prisoners' perceptions of DNA surveillance issues to an outside audience, but in order to extend the study to include the audience's perceptions as part of the research. This participatory design favoured a practical approach which took the situated nature of the impact of these systems fully into account, both in terms of those who regulate them and who are regulated by them.

4. To pursue the aim of disseminating the findings obtained with the prisoners to the wider community of forensic scientists, criminal investigators, law operators, civil organisations and academics, we produced a report which is publicly available on the internet at http://dnadatabase.ces.uc.pt/

4 Views on profile inclusion and removal criteria

A universal database to counter stigmatisation

Many of the prisoners interviewed (n=12) supported the creation of a universal database covering the entire population, as a means of preventing the police from seeking out suspects on the basis of their profile as a previous offender. In general they discussed certain ethical questions raised by the creation of a DNA profile database covering the entire population, but concluded that the benefits outweighed the idea of repression and the threat to individual rights. This idea was in line with the perceptions of academics and professionals, although they did not expect prisoners to support a universal database, due to obvious concerns about the threats to individual rights in terms of physical and moral integrity, and privacy. This support for the establishment of a universal DNA database reflects the initial plan outlined by the Portuguese government in 2005 to create a genetic database for civil and criminal identification purposes containing the profiles of the entire population (Machado & Silva, 2010). However, while the prisoners and academics stressed the importance of the ethical issues related to the creation of a universal database, the professionals involved in criminal investigation work and forensic genetics highlighted financial and technical matters, such as an undesirable rise in costs associated with the creation of a universal database, especially in the context of the financial crisis.

The arguments presented by the surveilled, the surveillants and the academics are supported by studies on the discriminatory potential of DNA databases. On the one hand, the over-representation of certain ethnic groups in police databases has been systematically noted in literature on the subject (see, for example, Cole, 2002; Duster, 2006; Williams & Johnson, 2008), and also in genetic databases used for criminal investigation purposes (Nuffield Council on Bioethics, 2007). On the other hand, several commentators referred to the possibility that expanding the inclusion criteria for DNA databases may help mitigate the databases' discriminatory potential (Connor, 2003; Haddow, 2008; Kaye & Smith, 2004). These comments have fuelled the debate on the need to reconfigure the issue of the threat to individual rights potentially generated by expanding the inclusion criteria. It therefore appears necessary to continue discussing the matter, whilst ensuring that the debate is, as far as possible, open and accessible to all (Machado, Santos & Silva, 2011; Prainsack, 2010).

In the case of prisoners, it is important to note that the views they expressed on stigma and individual rights in relation to the DNA database are a reflection, to some extent, of the forms of collective stigmatisation that have emerged in crime control in Portugal in recent decades. This may have implications for the prisoners' perceptions of the police and the criminal justice system. These forms of stigmatisation have emerged particularly within the context of pro-active styles of law enforcement. They are by definition more prone to selectivity and bias than

reactive methods (Smith, 1997; Willbanks, 1987), and have tended to target specific social and ethnic categories. They have thus compounded the effects of social stratification on crime control (Cunha, 2005; Durão, 2011). Mass procedures were most visible in the patterns for controlling drug-related crime, but were by no means limited to this (Cunha, 2002). Police interventions have been increasingly directed towards specific poor urban territories that have become collective targets for surveillance.

Prisoners' perceptions of the potential effect of DNA technology in creating the stigma of delinquency have already been discussed in a previous study conducted in Austria (Prainsack & Kitzberger, 2009), with different results. These may be explained by the different histories of technology and governance in Austria and in Portugal. Whereas the Austrian forensic DNA database was established in 1997, and is one of the largest in Europe and even in the world (Prainsack, 2008), the Portuguese database is still very limited in size and criminal investigation work is still mainly carried out either on an individual case basis or by resorting to informal genetic databases held by the police (Machado & Prainsack, 2012). The results obtained in Austria indicated that prisoners thought that the DNA database not only added to, but deepened the somatic dimension associated with the stigma of being a convicted criminal (Prainsack & Kitzberger, 2009, p. 70). This may result from the actual experience of being included in the database, but may also be due to the fact that Austrian legislation does not allow for the removal of profiles, except in cases where a suspect is acquitted, if the suspect applies for removal. In Portugal the experience of the stigma associated with inclusion in a DNA database had a prospective character, and was based on the prison inmates' previous personal contact with the authorities' practices regarding known criminals, and their knowledge of how ex-convicts experience difficulties with social reintegration (Machado et al., 2010).

5 Non-removal of DNA profiles to protect individual rights

Portuguese law on the forensic DNA database stipulates the mandatory removal of DNA profiles from the database at the end of judicial proceedings or the end of the maximum statutory limit for criminal proceedings stipulated in the Penal Code. In making the framework and lifetime for DNA profiles equivalent to that of the criminal record, and cancelling the effects of both at the end of the same period of time, the law on the DNA profile database reflects the perspective of the legislators and regulators who planned it on the basis of a notion of stigma that they themselves projected onto the database, by associating it with the criminal record. In making this association, as if both types of data shared the same kind of stigmatising potential from the outset, they inadvertently conferred an equally negative connotation on the DNA database. It is as if a DNA profile in-

herently contains a criminal identification, rather than merely a personal identification or an individual biological identity.

The prisoners expressed quite a different perspective. Firstly, they identified a more 'neutral' connotation insofar as they did not tend to associate the function and purpose of the DNA profiles with those of criminal records, but instead with fingerprinting – or rather a 'super-fingerprint', in other words a kind of gold standard for individual identification (Lynch, 2003). Secondly, this group of convicted offenders reversed the regulators' arguments on stigma and stigmatising processes. As far as they are concerned, the stigma would precede the factual record anyway, as it would already be attached to people, or more precisely to 'classes' of people: in the view of the interviewees the suspects 'are always the same people'. According to the prisoners, the police can always plant DNA at a crime scene (Prainsack & Kitzberger, 2009; Machado & Prainsack, 2012) as concrete evidence of a previous stigma, but DNA has no stigmatising potential in itself. The stigma is produced by the authorities, and in this sense is independent of the biological marker, and comes into play prior to the collection, storage and management of biological identities. Consistent with this logic of seeing DNA identifiers as just one more element used in criminal investigation practices, the prisoners indicated that the removal of profiles could contribute towards ex-convicts being seen as 'eternal suspects'. The prison inmates considered that the kind of criminal investigation work carried out in Portugal was based much more on fingerprints held in police databases and analysis of the *modus operandi* of criminals rather than on the use of DNA profiling – which is actually true for forensic crime scene investigations all over the world (Schroeder & White, 2009). Hence, the prisoners' previous experiences of the criminal justice system had led to a particular redefinition of their rights and status, in which they viewed the removal of their DNA profiles from the forensic database not as a benefit, but rather as a lost opportunity to prove their innocence and to have a 'clean sheet', 'cleared' of any official record that could directly identify them as the perpetrators of past crimes.

Thus, the prisoners interviewed mainly favoured the non-removal of DNA profiles, with 20 arguing that DNA profiles should never be removed. The arguments for the non-removal of profiles were justified by the 'exonerating' potential of the database (n=6), the claim that the removal of profiles was a hindrance to criminal investigation (n=4), and the fact that removal would limit the possibility of identifying re-offenders (n=7). Profile non-removal could, from the prisoners' point of view, facilitate criminal investigation and also prevent the authorities from suspecting the 'wrong person', whilst proving the innocence of many others. This exonerating potential was perceived both in tangible terms (e.g. determining that it could not have been a certain person who committed a certain act) and in more general and abstract terms (its essentially individual nature would act as a guarantee against a presumption of guilt projected a priori onto collective categories of people).

The professionals shared the prisoners' concerns over the uncertainties associated with the sensitivity of evidence in the sense that this could contribute towards misconduct in investigations. However, the professionals rejected the inmates' idea of DNA being planted at crime scenes, stating that these images were merely 'ghosts' and 'myths' created by prisoners to discredit police work. According to the professionals and academics who participated in this study, two separate issues are involved in the debate on removal criteria: on one hand, the discourse surrounding the law and, on the other hand, the narratives on practices associated with the collection, management and interpretation of evidence. Thus, the discussion of removal criteria should be framed within a broader theme – the mechanisms for controlling and monitoring access to, and use of, the forensic DNA database.

6 DNA profiles, criminal records and social reintegration

The law on the DNA profile database stipulates that DNA profiles be removed at the time of the definitive cancellation of the decisions cited in the criminal record (Article 26.1f of Act 5/2008). As mentioned before, the removal of profiles is intended to reinforce the principle of social reintegration. The removal of profiles, after a maximum period of 10 years after the sentence has been served, has sought to safeguard, from the point of view of the intentions of the legislator, the possibility that each and every individual may be reintegrated into society without any official record that might directly identify them as the author of a past crime (Moniz, 2009). One of the topics that emerged during the 'one-day think tank' debate concerned this particular legal provision. The prison inmates were also asked about their opinion on the equivalent storage time for criminal records and DNA profiles in the national forensic DNA database.

The clear distinction between, on the one hand, the characteristics, function and potential of DNA profiles for identifying perpetrators of crime and, on the other hand, those of the criminal record became more pronounced when seven of the 20 prisoners who opposed the removal of profiles indicated that the criminal record should, on the contrary, be erased (in order to improve job opportunities). Although some prisoners expressed fears about potential abusive practices by the authorities – such as planting evidence at crime scenes in order to incriminate individuals – they thought that the implications of storing DNA profiles permanently in databases were 'neutral', or as neutral as those of fingerprints, and different from those associated with criminal records.

The prisoners interviewed did not believe in the DNA database's potential for social reintegration (Machado et al., 2011), and this opinion appears to be combined with a low level of confidence in the role played by the justice system. This was connected to a general lack of belief in the system's ability to provide opportunities and conditions for social reintegration. The prisoners' expectations of social

reintegration were instead associated with issues related to being able to find a job after leaving prison and the type of social networks they would be able to find on the outside that would provide them with various kinds of support. In the opinion of the interviewees, social reintegration is 'impossible' or at least 'very difficult' due to the prevailing ex-convict stigma, which is an obstacle to finding a job and makes relationships with other people difficult (n=19). Some prisoners argued that the removal of information from their criminal record was more important in terms of social reintegration than the actual removal of the DNA profile from the forensic database (n=6).

For the surveilled, the surveillants and the academics, making DNA profiles equivalent to criminal records in terms of their purpose and criteria governing their regulation would be unjustified, particularly with regard to the equal subjection of both to the principle of social reintegration which informs the Portuguese penal system.

7 Perceptions of the value of DNA databases in deterring crime

Around the world, the creation of DNA databases for criminal investigation purposes has been presented by political decision-makers and forensic researchers as having the potential to prevent or deter crime. While the professionals and academics who participated in this study shared this perspective, the dominant opinion in the group of prisoners we interviewed was that the effect on crime prevention or deterrence was questionable or at best only minor. Fourteen prisoners claimed that it did not prevent crime, 7 prisoners said they believed that it may prevent crime and 5 prisoners said that it may or may not reduce crime. Certain reasons were given to justify these opinions, namely the prevalence of crimes perpetrated irrationally or on impulse (n= 9) or the fact that the interviewees believed that many criminals did not care about, or even consider, the possibility of being caught (n= 5).

In addition, some prison inmates claimed that the existence of a DNA database might even lead to an increase in 'professional crime', given that it favours premeditation or better organisation of criminal activities (n= 8), and may encourage criminals to take measures to avoid leaving traces at the crime scene (n= 13) and also lead to more violent crimes as a means of clearing traces from crime scenes (n= 1).

The crime deterrent effect of DNA databases has been proclaimed by some jurisdictions to justify the expansion of criteria for inclusion, namely to address the problem of volume crime. It has yet to be proved that the use of forensic DNA databases has a relevant impact on the prevention and deterrence of crime (Nuffield Council on Bioethics, 2007). Some authors have suggested that if DNA databases can have plausible deterrent effects, translated into decreased crime rates,

this effect has not been liable to be independently attributed to the creation and expansion of DNA databases (Bhati, 2010; Briody, 2004; Briody & Prenzler, 2005). Other studies even indicate that the lack of evidence for DNA databases' deterrent effects in the context of volume crime might be explained by offenders becoming more diligent in avoiding traces (Beauregard & Bouchard, 2010; Freckelton & Selby, 2002).

In addition, the system for criminal policy in Portugal favours prevention in terms of general reintegration and individual socialisation (Moniz, 2002). Although the subject of crime prevention and deterrence was not selected, or at least not directly, as a topic of analysis in a similar study carried out in Austria (Prainsack & Kitzberger, 2009), it may be argued that the results obtained from both groups – the prison inmates, professionals and academics – indicated that DNA databases are not perceived as having any particular value and usefulness in terms of preventing and deterring crime.

8 Conclusion

This study produced unexpected and important results that should be considered in terms of the way DNA surveillance is implemented in a national and global context. We have argued here that there is a need for an insight into how surveillance works in concrete terms for a wide range of social actors: those who are surveilled (i.e. convicted individuals), the surveillants (i.e. the agents responsible for the regulation and daily management of forensic DNA databases) and the academics involved in criminology and legal studies. This could serve as a relevant perspective for surveillance studies insofar as it would represent a more practical approach, as well as greater sensitivity towards the impact of surveillance systems on the surveillants. It would thus contribute to a broader, deeper and more nuanced debate on the benefits, risks, uncertainties and effects of the use of DNA databasing for surveillance purposes and crime fighting.

We found similarities and also differences among the two groups whose narratives were analysed: the convicted offenders and the group of professionals working for the state in law, forensic genetics and policing on the one hand, and the perspectives of academics working in the fields of law and psychology, on the other hand.

Both groups shared the view that DNA surveillance does not have any particular value and usefulness in terms of preventing and deterring crime. The prison inmates even emphasised that DNA databases could make criminals more 'professional' or else were not a relevant factor in criminals' analysis of the risk of being caught (for a more detailed discussion, see Machado & Prainsack, 2012).

Views on the criteria for the insertion and removal of the DNA profiles in the national forensic DNA database were more complex, and nuanced by the different

actors' particular objectives and position within the social hierarchy. Three main topics emerged during the debate: the possibility of establishing a universal forensic DNA database with the aim of avoiding stigmatisation; the non-removal of DNA profiles in order to protect individual rights; and the questioning of social reintegration promised by the fact that Portuguese legislation has established equivalence between the storage time for criminal records and the DNA profiles held in the national forensic DNA database.

The differences between these two groups were mostly forged by their social status, in terms of access to institutional knowledge and power, in which the distance between the social elites and the prison inmates became quite visible (Prainsack, 2010). While the professionals and academics working in the area of law and genetics emphasised the legal constraints which are the basis of the need to remove DNA profiles, as established in Portuguese legislation, and which also prevent expansion of the criteria for the insertion of profiles (i.e. suspects, and all convicted offenders), in addition to financial and institutional constraints, the prison inmates claimed that a more intensive and extensive use of DNA technology could prove more just in a criminal justice system that is tainted and sometimes corrupted (Duster, 2006, p. 294). While the social elites reflected on social reintegration in broad, abstract terms, the convicted offenders referred to the stigma of being in prison as a mark for life.

Empirical data also suggested a new view on DNA surveillance expressed by those surveilled, namely analysing DNA profiles from the perspective of digital fingerprinting rather than criminal records, which was the dominant view of the surveillants and academics. Instead of a defensive and apprehensive attitude towards certain aspects which could eventually become more problematic, such as the non-removal of profiles, the surveilled tended to view them not as increasing and tightening up a system of control in which they would be the main target, but as a shield that would protect them from systematic and a priori suspicion. The prisoners felt that they were subjected to systematic and a priori suspicion by the human actors in the justice system – either because of their status as convicted criminals and the presumption of guilt that this generates, or because of the low social standing of most prisoners.

This chapter argues that it is necessary to develop an analysis of DNA surveillance that is able to capture the complexity and heterogeneity of its various effects on local, socially and culturally determined contexts. It is necessary to consolidate the tools that capture the hybrid and diverse nature of the effects that may be produced in different audiences, both law-abiding citizens and potential or convicted criminals. For instance, DNA's capacity to provide identification in an objective and secure manner appears to be a factor that may be used to strengthen public trust in the justice system and in criminal investigation agencies. But there remains the need for more comparative studies in order to achieve a better understanding of how prison populations, all of those who have been labelled by the justice system as criminals and individuals whose DNA profiles

might be included in forensic databases for criminal investigation purposes are reacting to the growing use of DNA technology in criminal investigation. Similarly, the kind of impact these databases may have on crime prevention and deterrence has yet to be fully understood (Machado & Prainsack, 2012).

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