



CHAPTER 8

Conclusion

Abstract This chapter succinctly summarizes the contents presented in the book, highlighting the main arguments. In particular, we revisit the various modalities and roles of forensic genetics in the governance of crime in contemporary societies. Additionally, we reflect upon paths for the future of research in the field of the social studies of forensic genetics.

Keywords Forensic genetics • Governance of crime • Future investigation

BOOK SUMMARY

The main goal of this book is to propose a sociological approach to the role and place of forensic genetics in the governance of crime in contemporary societies. The presented themes are a reaction to the generalized enthusiasm generated around the potential of DNA technologies. We have attempted to explore in depth the complexity inherent in this social phenomenon.

Each chapter highlights a singular dimension of how forensic genetics are used in the governance of crime. As a whole, the different dimensions being analysed point to fundamental reconfigurations in social relationships, as well as to the ethical and legal implications of the use of DNA technologies in criminal justice systems. Among other aspects, the use of DNA technologies has implications for the way societies attribute meaning

and classify and conceive the human body, the genetic links between individuals and groups and the physical appearance of individuals and populations. It also has a profound impact on the practices of several professional groups, from forensic geneticists, to police forces, criminal investigators, diverse stakeholders and the citizens. Finally, the use of DNA technologies in the criminal justice system has diverse and deep implications in the way institutions and public policies manage expectations for the governance of crime, namely in terms of police and judicial cooperation initiatives whereby DNA data and information are exchanged to support transnational criminal investigations.

The considerations developed in this book begin by illustrating the role of sociology in the study of the micro/macro and subjective/objective dimensions of the social processes and dynamic generated by the presence of DNA technologies in the criminal justice systems (Chap. 2). Such dimensions provide context, norms and values to the social actions of heterogeneous actors, namely: laboratory technicians, forensic genetics researchers, police forces, judges, prosecutors, attorneys, jurors, professional organizations, supervising entities, non-governmental entities, politicians, criminals, victims and citizens in general. Based upon this polysemic framing, we describe the emergence and consolidation of social studies for forensic genetics. In particular, we explore the scientific and legal controversies that have marked the creation, stabilization and consolidation of the protocols, quality patterns, expert communities and legislation focused on the use of DNA technologies in the criminal justice system. Such an analysis is followed by a summary description of the way several research methods and techniques (document analysis, interviews, surveys, observation, focus groups, among others) have been used in this field of study, while also providing a multifaceted image of this phenomenon.

Subsequently, to contextualize the broader scenarios that transcend the application of forensic genetics in the justice system, we engage in a critical debate about the biological explanations of criminal behaviour. Throughout Chap. 3, we emphasize how it proved to be particularly relevant to trace the field's history, from biological determinism—outlining its severe implications for individuals classified as “born criminals”—until the most recent biogenetic explanations. The current development of epigenetics and neurobiology frame the new discussions about nature versus nurture, fostering new ways to act upon certain social groups considered as risky, even in the absence of any deviant or criminal behaviour.

The next two chapters of the book frame and describe the way DNA technologies have been used in courts and in the field of criminal investigation. In Chap. 4, we highlight the idiosyncrasies of the various epistemic cultures involved in the chain of custody through which DNA circulates from the crime scene to the courts of law. The risks associated with the high expectations placed upon DNA potential to solve criminal cases are explored in detail. We also analyse the role of media in the dissemination of notions of DNA as an “infallible” technology. Another theme that merits our attention is the creation and expansion of criminal databases containing thousands of DNA profiles, where we also note the ethical and human rights issues stemming from this phenomenon. Finally, Chap. 5 also provides the reader with a brief discussion about Big Data in the context of the growing collection of data in the present information society, more particularly by reflection upon how Big Data can potentially support criminal investigations due to its ability to predict and anticipate risks.

Taking as the starting point the consolidation and expansion of forensic genetics in the governance of crime, in terms of both impact and reach, the last chapters of the book are dedicated to debating the way DNA technologies have proliferated in contemporary societies while finding new frameworks for application on the justice system. One example of those configurations is linked to the growing interoperability between forensic DNA databases, which is the topic of discussion in Chap. 6.

The interoperability of forensic DNA databases is illustrated by the creation of the Prüm system, which aims to control and surveil irregular mobilities within the European Union by exchanging data transnationally. In this regard, we outline how the transnational exchange of DNA data emerged as a project whose goal was aimed towards overcoming the social and political disparities in the European Union. Nevertheless, it is clear that such a goal of overcoming disparities through technological standardization is nowadays paired with the consolidation of a system of wider social sorting that highlights several geopolitical tensions.

Chapter 7 focuses on the expansion of the use of forensic genetic technologies by discussing the current development of emergent DNA technologies that make it possible to generate intelligence to search for criminal suspects. We explore the implications of the use of particular technologies like familial searching and forensic DNA phenotyping. Such technologies aim to help criminal investigations to place their attention on specific suspect groups, thereby moving forensic genetics from individual identification towards the collectivization of suspicion. In addition, these emerging

technologies also showcase the co-evolving relation between science, justice and the market. As a result, the governance of data has become the focal point of debates, coexisting and reconfiguring older debates focused upon topics such as genetic privacy, ownership of personal data and data usage consent.

POINTS FOR REFLECTION

This book shows how, by becoming a tool in service of justice, the application of DNA technologies entails the creation of new configurations able to connect identities, perspectives and risk notions (Lynch, Cole, McNally, & Jordan, 2008). From the standpoint of risk society theories (Beck, 1944; Giddens, 1990), the mechanisms for social control and management of public trust used by the State are significantly dependent on two vectors: on the one hand, the accumulation, computerization and handling of massive amounts of data about the citizens. In several fields of social life, we can see a proliferation of practices that validate the participation of citizens in technological processes of “identity securitization”. Such processes include biosurveillance mechanisms and identity verification/confirmation technologies that use DNA technologies. On the other hand, another vector of the social control mechanisms and management of public trust used by the State regards the technological and scientific innovations applicable to the criminal justice system.

The DNA technologies analysed in this book reveal precisely the acceleration of the reconfiguration of classic control mechanisms. According to several authors (see, e.g., Aas, 2004; Lyon, 2002, 2004; Tsianos & Kuster, 2016; Van der Ploeg, 2003), it is a matter of configuring knowledge about populations and their respective bodies into a language that can be translated and read by machines (Dodge & Kitchin, 2004). Such knowledge is also configured as transferable in information patterns that can be organized into movable “packages” by various social control agents, such as criminal investigation institutions.

This new “body ontology” can be seen in the debate about the role of forensic genetics in the governance of crime, according to a principle that upholds the right to privacy, which is closely connected to the configuration of the body’s information. We are seeing the emergence of a type of genetic privacy that is no longer linked to intrusion on the individual’s body, but to the State’s intrusion on the information “stored” on the

genetic code. A close look into such processes also highlights how the reproduction of inequality and social differentiation is growingly linked to technological control and strengthened by a culture focused on security. Within this context, a part of the population, whether by misfortune, their origin or their behaviour, are excluded as “non-citizens”, “failed citizens” or “anti-citizens” (Aas, 2011; Rose, 2000).

Thus, the control of populations using genetic technologies is a governance feature of contemporary societies, made possible by a type of surveillance that doesn’t necessarily look for people or behaviours assessed as deviant. Instead, it searches for preexisting exclusion parameters (in a risk containment logic) which are determined by identifiable patterns in the databases—what Roger Clarke (1988) called *dataveillance* (see also Lyon, 2001). The identification is not limited to the (potential) offender, but also encapsulates groups and identities which, due to their traits, become suspicious to the database. We are referring to “statistical suspects” (Cole & Lynch, 2006), considered as such for reasons tied to probability incidence and anchored on a discourse that is seemingly uninterested in the ethical/moral connotations of this categorization.

The context and social implications of the uses of genetic technologies in the criminal justice system provide the basis for addressing these technologies as an integral element of “surveillant assemblage” (Haggerty & Ericson, 2000). The “surveillant assemblage” represents a vast set of interconnected systems and surveillance practices, which is continuously in flux and devoid of a relevant and concrete hierarchy. This “genetic surveillance” therefore organizes a global transformation of State structures and societies around technological and monitoring devices. This way, new concepts of identity and body take shape, as well as a stronger form of citizens’ participation and engagement with the ethical and political implications of such technologies.

Consequently, society’s organization around increasing flows of information creates new conditions for emancipation by breaking down traditional power structures into a fluid dynamics. At the same time, we can see a reinforcement of the centrality and symbolic power of scientific knowledge, particularly in the field of bioscience. It serves as the foundation stone for new truth-producing regimes, which will simultaneously integrate political power and judicial initiatives in a way that is liable to reinforce the creation of social inequality.

TRACING NEW PATHS FOR THE FUTURE OF RESEARCH

As noted throughout this book, the use of forensic genetics in the governance of crime is a rapidly growing field, whether in terms of the scale of its activity or in the sophistication of the information that is collected, extracted, analysed, worked upon and used. Among the elements developing and changing at an accelerated rate, and which consequently deserve specific studies to explore in depth their social, ethical, legal and political implications, we highlight two phenomena: the geopolitics of DNA and the expansion of commercial information repositories mobilized for criminal investigation purposes.

DNA geopolitics regards the way the different uses and meanings given to DNA vary according to different national contexts. As this book indicates, the DNA databases with the largest size and sophistication are based on the richest, most technologically advanced countries. However, political forces linked to neoliberalism and security-focused ideologies have imposed on countries with less economic and scientific resources, as well as disparate models for regulation, legislation and organization, the obligation to implement forensic DNA databases. Therefore, it has become urgent to understand the different ways that political, social and economic power intervene in the use of forensic genetics for the governance of crime. To that effect, it's necessary to expand the analysis beyond the pioneering and/or more developed countries in terms of forensic genetics, understanding the way underdeveloped countries in the field of forensic genetics perceive DNA technologies' potential and risks.

Finally, the rapid expansion of commercial information repositories developed by private companies represents a sharp dilemma for those responsible for regulatory frameworks and ethical issues. One significant example is the "recreational databases" that try to infer, using DNA, the biogeographical ancestry and/or predisposition towards certain health conditions. In a context where social values and scientific legitimacy are (re)negotiated, recreational genetic databases show a tension between optimism regarding the techno-scientific potential to solve complex criminal cases and the public's distrust about the ethical limits of science and technology. Moreover, the use of such databases in the field of forensics underscores the emergence of new social arenas where police forces, scientists, private companies, the media and the general public actively interact. These social processes create new possibilities in forensic science that are based upon considerations that balance the benefits of identifying criminal

offenders and the undesirable collateral damage of threatening genetic privacy.

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