Discussion Outcomes

ESRC Research 'Seminar series on genetics, technology, security and justice. Crossing, contesting and comparing boundaries'

Seminar 2: Comparing stakeholder discourses about genetic technologies

Wed, 16 March 2016, 12:00-18:00. Room CG218, Department of Chemistry, Durham University, Lower Mountjoy, South Road, Durham DH1 3LE

The talks by six speakers raised a series of themes and issues concerning the use and governance of forensic genetics in criminal justice systems both within the UK and elsewhere. A diverse audience engaged in related discussions. The audience brought together representatives of UK government and non-governmental organizations, police, forensic science providers and academia (forensic and social sciences), with participants coming from the UK, Republic of Ireland and elsewhere in Europe.

A number of themes emerged that indicate key questions concerning current knowledge and practice around genetics and crime. The following possibilities for further research should be considered in the context of forensic technologies being embedded within heterogeneous communities of interest groups and stakeholders.

Discussion outcomes

1. Standardization: The presentations and subsequent discussions highlighted the multi-dimensional aspects of standardizing forensic genetic technologies. Standardizing a forensic genetic method does not just involve agreeing technological requirements. It is also a distinctly social and situated process involving a consideration of the spatial reach of forensic practice. It may also involve the negotiation of agreed notions of individual competency which may in turn encompass a significant cognitive element.

   While standardization of forensic genetics presents challenges within a single jurisdiction, further issues may arise if the international dimensions are considered. A discussion of social and ethical issues highlighted an array of relevant jurisdictional differences including: legislation governing the sampling and retention of forensic DNA on databases, police practices, human rights norms and historical factors.

   a. How can quality be achieved collaboratively between forensic practitioners, police, courts, academia and other stakeholders?
   b. Can international ethical norms and standards be inferred for forensic DNA databases?

2. Evidential interpretation: The interpretation of forensic DNA samples may be influenced by inferences about the degree of contamination or uncertainties concerning other phenomena such as the persistence of DNA at a crime scene or its transfer between individuals and/or spaces. Interpreting the significance of a DNA match may also occur in the context of other evidence recovered during the course of an investigation.

a. What are acceptable boundaries of interpretation? How low or poor-quality can a DNA profile be effectively interpreted – is there a point where we should this is not good enough? What challenges do mixed DNA profiles pose for interpretation?
b. What are the advantages and limitations respectively of qualitative practitioner opinions and computer software (probabilistic algorithms) when interpreting evidence?
c. What research is required to better understand transfer and persistence effects of DNA, and how might this affect the interpretation of forensic genetic evidence?

3. Fragmentation of forensic work and the uncertain future status of forensic expertise: In recent decades UK forensic science provision has seen some significant changes. The Forensic Science Service (FSS) once the UK's largest forensic science provider, was closed in 2012. A number of forensic science providers remain, with in-house police laboratories also potentially undertaking casework. Concerns remain about the fragmentation of forensic casework among multiple forensic science providers, and the possibility that budgetary constraints may reduce the amount and variety of evidence recovered from crime scenes.

    a. Does fragmentation hinder effective evidential recovery and interpretation?
    b. Does fragmentation risk de-skilling forensic practice?

4. Managing forensic innovation: Implementing new forensic genetic technologies, such as DNA phenotyping or 'RapiDNA' systems, may involve negotiating a series of issues. These may include issues around training, education, accreditation, the nature of reporting data, agreement on processes with providers and costs, ethics and legal awareness. Other complicating factors potentially include processes for evaluating new technology, budgeting, regulatory standards, and making decisions about whether it is appropriate to share data with other nation-states.

    a. What are the challenges to introducing new innovations into forensic casework?
    b. What is the relationship between 'upstream' scientific research, and how might such knowledge be used to inform forensic innovation?
    c. How might the social and ethical dimensions of forensically-relevant scientific research be anticipated and understood?
    d. Is it possible to draw analogies between forensics and medicine in terms of translating scientific knowledge into operational innovations? Does that help to illuminate understanding of the challenges to forensic innovation?

5. Evidence vs intelligence: In certain operational circumstances, such as counter-terrorism, forensic science may help yield intelligence about a potential suspect, which in turn may assist investigators with collecting further evidence to be presented in a case. Should the same standards apply to forensic methods used to generate

intelligence rather than evidence? How straightforward is it to draw a distinction between intelligence and evidence?