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# GENETIC GENEALOGY: FROM SCOTTISH BARONETS TO SERIAL KILLERS

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I am the chairman of the Biometrics and Forensic Ethics Group. I should say at the very outset that any views expressed in this paper are my own. They should not be ascribed to be those of BFEG, its other members or, indeed, to the Home Office.<sup>2</sup> So, if I get things wrong in this paper, it is my fault alone. Before I go further, I should explain a little about BFEG and what it does.

## **What does BFEG do?**

The BFEG is an advisory, non-departmental public body, sponsored by the Home Office. It advises Home Office Minister on ethical issues arising in in the areas of biometrics, forensics, artificial Intelligence, and big data. Its role is needed because these are areas where science and technology are rapidly innovating. Those innovations often throw up new, gritty ethical issues; part of our role is to flag up issues and suggest solutions which the Home Office can factor in when considering to incorporate those innovations into areas like policing, security and immigration.

## **Who are we?**

Established in 2008 as the National DNA Database Ethics Group (NDNAD EG), the group was created to provide Home Office Ministers with independent ethical advice on the operation of the UK National DNA Database (NDNAD). In 2017 the Home Office extended the remit to cover all forensic identification techniques and the name was changed to the Biometrics and Forensics Ethics Group. The remit of the BFEG was further extended in 2019 to provide independent ethical review of the use of large data sets by the Home Office. Our membership includes leading experts from a broad range of areas including law, computer science, philosophy, ethics, and forensic science. Today our main stakeholders are Data and Identity Policy and other policy areas at the Home Office, the Forensic Information Database Service, the Biometrics and Surveillance Camera Commissioner and the Forensic Science Regulator. We also self-commission work.

## **DNA and genealogy**

Two recent cases. One in Scotland and one in the United States have thrown the crucial importance of DNA into sharp relief.

## **The Pringle of Stichill Baronetcy Case**

The first of these is the Pringle of Stichill Baronetcy case. On 5 January 1683 Charles II granted the Baronetcy of Stichill (“the Baronetcy”) to Robert Pringle of Stichill “and the male heirs of his body.” This case concerned a dispute as to whom the baronetcy should pass after the death of Sir Steuart Pringle of Stichill, the 9th Baronet. The two protagonists – the claimants in the case – were Sir Steuart’s (the 9th Baronet’s) son, Simon Robert Pringle (“Simon”) and Norman Murray Pringle (“Murray”) (the grandson of 8th baronet).

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Murray's claim relies upon DNA evidence obtained as part of "the Pringle Surname Project". This was founded by Murray to determine the chieftainship of the clan Pringle, and the late Sir Steuart provided his DNA for the project. The DNA evidence provided "very strong support" for the contention that the 8th baronet was grandfather to Murray but not the father of Sir Steuart. Simon did not dispute the DNA evidence but argued, amongst other things, that the DNA evidence should not be admitted on public policy grounds. Murray had not told Simon's father, Sir Steuart, that his DNA would be used to challenge his parentage or his right to his title and would not have consented had he known.

This was important. Unless the DNA evidence was excluded, there is an evidential presumption of paternity under both Scots and English law. Indeed, under Scots law, a title of honour vests "iure sanguinis" (i.e., by right of blood) in the heir specified in the grant.

The Privy Council concluded that the DNA evidence should not be excluded. They reasoned that Murray did not breach an obligation of confidentiality owed to Sir Steuart, or misuse Sir Steuart's DNA. In providing his DNA for the Pringle Surname Project, Sir Steuart must have been aware that if his DNA excluded him from a claim to be the clan chief, it might also form the basis of a challenge to his entitlement to the Baronetcy.

Even if Murray's use of Sir Steuart's DNA amounted to breaches of the statutory duties owed by data controllers under the Data Protection Act 1998, it would be a disproportionate response to exclude evidence of such probative quality from consideration.

### **The Golden State Killer**

Between 1974 and 1986 there were a spate of murders, burglaries and rapes in California. Despite taunting messages and a \$50,000 reward, the identity of criminal or criminals behind them could not be found. DNA was found on the crime scene and this revealed that a series of offences committed by the "Visalia Ransacker", "The Original Night Stalker", "The East Area Rapist" and latterly the "Golden State Killer" were being committed by a single offender. They had a one-man crime wave on their hands.

Maddeningly, whilst the police now had DNA, they were to find that it was not a match to any records held by them. "Close matches" to the "Golden State Killer" were later to be found by the FBI to his 3rd or 4th cousins on ancestry research databases. By using genetic genealogy, the killer's family tree was pieced together and, using this, the culprit was identified. In 2017, Joseph James DeAngelo, a former police officer, was given 12 life sentences for 13 murders, 51 rapes and 120 burglaries.

### **What is Genetic Genealogy?**

Genetic genealogy is the application of DNA analysis and traditional genealogy to infer relationships between individuals. A comparison of individuals is carried out using the commercial genealogy databases. Genetic Genealogy looks at thousands of points of DNA that vary between individuals. As a result, it is far more discriminating, and the DNA sequences of individuals can be compared to find more distant relatives. Traditional genealogy is then used to build the family tree and hone down the likely identity of the suspect.

### **What is the position in the UK?**

The position in the UK is somewhat different. Since 2003, familial DNA has been used to detect crimes. Familial DNA uses only the DNA information in the DNA profiles that are held on the National DNA database. The UK's National DNA Database is the largest in the world. This method looks at just 17 areas of DNA that vary between individuals (and a sex marker). As the amount of DNA looked at is quite small only parent/child or siblings can be identified, and only if they are on the national database.

### **Where did the FBI find the DNA?**

The FBI found the key clues as to the killer's DNA using the commercial GEDmatch database. Currently around 26 million people have provided their DNA to the various testing companies who hold the genetic information in proprietary databases for their users for family research purposes. Most contributors are individuals of mainly northern European heritage, and many are North American residents. The main companies that provide 'direct-to-consumer' genetic testing to the public are 23andMe, AncestryDNA, MyHeritage and FamilyTreeDNA. Use of database by law enforcement is currently limited to the U.S. due to issues under the European General Data Protection Regulation.

### **The BFEG Report**

The BFEG was asked to look at whether there might be a possible role for genetic genealogy in the UK for identifying suspects in UK cases, whether it was feasible and what the implications of that might be. On 9th September 2020, BFEG published a report "Use of genetic genealogy techniques to assist with solving crimes." A copy of the report is available on the BFEG website.

### **What did the BFEG Report conclude?**

The Report recognised that the UK already has one of the most efficient DNA databases in the world and conventional methods will identify the bulk of perpetrators. Thus, had the same facts played out in the UK, the Golden State Killer would have been almost immediately caught using the UK's existing familial DNA resources. If a genetic genealogy approach is used, a proportion of the potential relatives will not be UK based and this could add significantly to the genealogical effort. The GEDmatch database, for example, is US-centric.

Choice of cases must be carefully managed. The systematic genetic genealogy will inevitably throw up other difficult, unexpected or unintended issues for which policy will need to be formulated going forward; one such example is the identification and prosecution of women who abandoned their new-born babies decades ago, based on analysis of the deceased baby's DNA, followed by a forensic genealogical approach. Currently the whole process of genetic genealogy is unregulated. This carries with it numerous governance, legal, and safeguarding issues.

### **What problems were identified in the BFEG report?**

The BFEG report considered that a number of serious ethical and practical issues are thrown up. Firstly, there are issues over chain of custody. Presently, the chain of custody of evidence is carefully controlled. Genetic genealogy at present involves passing

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samples of DNA outside law enforcement to commercial database providers. Once the evidence is outside the careful control of law enforcement, how can a court or a jury be confident that this is the same sample or indeed that the sample has not inadvertently been contaminated? Secondly, there were possible issues with the genealogists themselves. How could courts and juries be confident that they had the necessary skills to undertake the work? Indeed, with an unregulated profession, how could their conduct be policed? Thirdly, there was a need to avoid unnecessary invasion into an individual's privacy and data. This took BFEG onto its fourth point. This was the question of data security. There was a real risk of the inadvertent discovery in the course of genetic genealogy of highly sensitive medical and personal data. The Pringle of Stichill case provides just such an example. Fifthly, once the work had been done, consideration would need to be had as to the retention or destruction of samples and data.

### **So, a resounding “no” to genetic genealogy in the UK?**

Not quite. Shortly before I was to give this talk, the *Evening Standard* published an article “Killer in the Family Tree: DNA sites could be used to track down suspects.” Following the BFEG's report and recommendations, Scotland Yard revealed it was part of a new working group with a wide range of stakeholders which had been established to further explore the practical and ethical implications of genetic genealogy, and to assess the potential of this investigative technique for UK policing. Scotland Yard was quoted saying “No decisions have yet been taken, and we will make our findings known in due course.”

### **Is there a potential new role for Genealogists?**

Genealogist giving evidence before the courts is not new. It is certainly far too early to discount the possibility of an increased role of genealogists in law enforcement if genetic genealogy were adopted; Sir Hillary Bray may well have an added side-line as Sherlock Holmes. If that were to take place, what would be needed is a robust professional body to accredit genealogists. Law enforcement and the courts would need to have confidence in the skills of member genealogists. Such a professional body could not be a paper tiger. It would need to have powers to regulate its members' conduct to ensure that confidentiality, privacy and proper chain of control was maintained, and to have the teeth to ensure that any member who failed to do so was appropriately sanctioned. So, as regard to a new line of work for genealogists, for the time being, however, it is very much a matter of “watch this space”.

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<sup>2</sup> The Home Office is a department of the UK government equivalent to the Department of Internal Affairs. It is responsible for immigration, security and law and order; it is responsible for policing in England and Wales, fire and rescue services, visas and immigration and the security service (MI5) and policy on security-related issues such as drugs, counter terrorism and ID cards.