

Phenotyping – making the technology operational

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KTN and the Forensic Science Special Interest Group

- KTN is the UK's innovation network
- Our remit is to help support UK business and academia to help grow the UK economy
- The Forensic Science Special Interest Group was created following Bernard Silverman's review of Forensic Science R&D in 2011

Phenotyping report



Phenotyping
Making the technology operational

Forensic Science Special Interest Group
Dr Felicity Curry



[Tinyurl.com/phenotyping report](https://tinyurl.com/phenotyping-report)

Phenotyping report

- DNA phenotyping is the prediction of a phenotype using only genetic information
- In a forensic context, it is taken to be the prediction of physical characteristics, such as eye, hair or skin colour, ethnic appearance etc based on a DNA profile
- DNA phenotyping is a predictive tool
- The results of DNA phenotyping are currently inadmissible, being seen as more of an investigative aid

Phenotyping report

3 discussion areas:

- The technology
- The requirements
- The ethical and regulatory concerns

The technology

- There are several companies and researchers working in this field
- The potential of the technology is not in question
- Need to ensure that the perceptions of the technology and its capabilities match up
- Practical questions need to be answered to demonstrate its commercial viability – time, cost, maintaining competency, mixtures
- Discussing the requirements early in the development process could help progress the technology

The requirements

- Primarily used by police forces for major cases
- Used as a tool for intelligence to aid an investigation
- Already in use in the USA – the nature of this use causes concern
- Begin with a field trial on unsolved cases
- Could also test in missing persons and unidentified victims investigations, or a complimentary technique in DVI
- May be scope to cover national security applications

The ethical concerns

- Often viewed as being one of the most significant barriers to implementation
- Work required to ensure there is public confidence in the technique
- Need background datasets
- Data security is a key concern
- Transparency of the process is vital

Regulatory concerns

- Need a long-term view of where the technology is heading
- Act proactively to set standards and allow sufficient time for providers to achieve accreditation
- Involvement of the forensic community in this process is vital
- Different types of standard may be required

Where to go from here?

- One organisation needs to take the lead – but work closely with other stakeholder groups
- The SIG can help co-ordinate activities in this area and disseminate any outputs.



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