Key ethical considerations of new forensic genetics technologies

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Overview

- Noble cause casuistry in forensic genetics
- Forensic *"thin ethics"* meets law enforcement's *"ethics is not our problem"* → how to ensure good ethical practice?
- RULE framework for valuation/validation of new forensic technologies

Noble Cause *Casuistry*

Inspired by “noble cause corruption” (Caldero et al. 2018) in law enforcement:

1. Argument: ‘good’ outcomes justify any practice
2. Argument: due process cannot stand in the way of (re)producing safety & security

Noble Cause *Casuistry*

1. Argument: because “conventional” forensic DNA profiling has been endorsed as ethical via legislative measures and in the media, all forensic genetics is equally ethical
2. Argument: the aim of “catching criminals” justifies using untested, even marginalising technologies
3. Argument: exceptional case work successes are extrapolated to the acceptability (even necessity) of wider adoption of emergent forensic genetics technologies

[Wienroth and McCartney 2023]

Exp 1: Golden State Killer

Example: forensic genetic genealogy helped with ID, cold case solved.

This has seemingly encouraged

- bad governance of customer data on some genealogy databases (e.g., using backdoor access tech to profiles not made accessible for law enforcement purposes) [The Intercept 2023]
- poor law enforcement practices (lying by police officers about reasons for requesting DNA sample) [NBC News 2020]

Exp 2: Phantom of Heilbronn

Example: biogeographic ancestry testing helped towards suspect ID

- scientific success but investigative failure (and further public marginalisation of Roma & Sinti communities) [Lipphardt 2020]
- wide use of forensic DNA phenotyping (visible traits) in the USA, but also: Canada's Edmonton police service apologized for "stigmatization ... of a racialized community" [Global News 2022]

New tech but ‘old ways’?

- Are laboratories ready to deal with *statistical / probabilistic* methods required for making sense of forensic DNA phenotyping?
- Are all service providers (private, corporate, academic, law enforcement) ready to discuss & address tech limitations as well as bad practice?
- Are law enforcement processes ready for reliably, usefully, and legitimately integrating new & emergent forensic genetics technologies?

“Thin” ethics

Arguably, NCC is also an outcome of “thin ethics”

- Following procedural ethics, disconnecting with ethics as integral to life.
  - Ethics as “hurdle” to jump at limited points in the use of data or technology.
- Also: privacy fallacy
  - data protection as sole issue of privacy,
  - erroneous *balance* of security & privacy
    - (but they are *symbiotic* [Evans 2021; Orrù et al. 2017])

Ethics as lived practice

Instead, (forensic, genetic, biometric) data & technology are elements of ***social practices*** (dependent on & imbued with values, context, agency).

- Micro: we take ethical decisions all the time, even if we are not aware of them (in FG, e.g., which training data sets to use, which databases to access, which values to emphasise in tech R&D and use, what/how to report, etc.) – reflect!
- Macro: Forensic genetics claims to contribute to societal goods (security, justice), so it must reflect on, discuss, & legitimise the values, contexts, agencies that drive it & its uses.

[Wienroth, Granja, Lipphardt, Amoako, McCartney 2021]

A forensic genetics ethos?

To overcome casuistry, forensic genetics needs to reflect on decision-making regularly, and it needs to address fundamental Qs:

1. the societal role of forensic genetics (good, bad, & ugly)
2. the commercialization of research & personal data, and of forensic service provision
3. the close relationship of forensic science with the policing of crime, borders, & civil society

[Wienroth, Amankwaa, McCartney 2022]

A forensic genetics ethos

- Clear professional & ethical guidelines
- Integrity of individuals (professional, transparent, sense of custodianship, aware of societal context)
- Good governance (enforceable self-governance [but good external governance is also vital])

[Wienroth & McCartney 2023]

Let's RULE

(Reliability, Utility, LEgitimacy)

Reliability

- Is underlying science sound?
- Unconscious biases?
- How reliable are data production, curation, use?
- User capacity to deal with data safely?

Utility

- What are the tech limitations?
- What are effective & successful uses, and to whom (science vs. investigation)?
- Potential social/societal impacts?
- Can it enhance an investigation?

Legitimacy

- Who makes decisions about tech? Are these transparent and inclusive?
- Should we invest in this tech at all? Is it necessary, proportionate to needs?
- Which context is this developed for & deployed in (health, forensic, surveillance)?
- What influences current arguments for or against this tech?
- What constitutes fair practice/use?
- What is needed to ensure good practice/use?

[Wienroth 2020; Wienroth (in preparation)]

Three lessons for Forensic Genetics

1. Overcome “thin” ethics in favour of ethics as “lived practice”.
    1. Regularly reflect on decision-making & impacts on producers & users.
    2. Anticipate (rather than respond to) challenges in use
    3. Openly discuss & legitimise values, contexts, & agencies that drive FG tech & their uses
2. Develop an ethos for an independent & resilient community of practice.
    1. Integrity, including professionalism (and resilience to political & policing pressures)
    2. Clear ethical & professional guidelines
    3. Good & enforceable governance
3. Think social – adopt the RULE approach for emerging technologies.
    1. Reliability
    2. Utility
    3. Legitimacy

Thank you.

For questions, comments, advice:

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