Commentary to: Doing the individual and the collective in forensic genetics: governance, race and restitution

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Published online: 18 June 2020
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It is well known that genetics carries a double moral and ethical valence: on the one hand, it has been heralded as a way to advance humans' ability to fight disease, increase well-being, reduce criminality and enhance knowledge of the pre-historical past; on the other hand, alarm bells have been sounded in relation to dystopian futures characterised by ever-more intrusive surveillance and control, and the reinforcing of discriminations and exclusions of various kinds. Forensic genetics has been linked, via the identification of human remains, to restitution, reconciliation and justice in post-conflict situations; and, via the analysis of crime-scene DNA, to the increased apprehension of dangerous criminals. It has also been linked to the creation of databases that are ethically suspect in their racial bias, their handling of privacy and the way they provide tools for increased state and private surveillance and control, which can infringe human rights (Hindmarsh and Prainsack 2010; Krinsky and Sloan 2011; Lynch et al. 2008; Rosenblatt 2015; Schwartz-Marín and Cruz-Santiago 2016; Skinner 2012, 2013; Wagner 2008).

The relation between the individual and collective is one way to engage with this ambivalence. Human genetics uses specific bits of information drawn from samples of DNA taken from individual persons to infer collective patterns, such as 'populations', 'lineages' and 'associations' (e.g. between diseases and 'populations'). These collective constructs, as organising concepts, pre-exist DNA data as well as being inferred from them. The 'individual' usually starts out in the datafication process as a selected set of DNA markers or characteristics (which are a tiny fraction of the genome of the individual as social person), and it may then disappear into a set of statistical frequencies. Genetics uses the collective patterns inferred from the database to make interventions directed at individual social persons, via, for example, clinical practice, public health policies, DNA ancestry testing or DNA fingerprinting

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to catch a criminal or reunite a family with the remains of a loved one. Thus, a set of social persons known as, for example, African Americans, may donate samples from which a selected set of DNA markers are identified, from which a collective association is made between ‘heart disease’ and ‘African Americans’; this association is then used to predict that all people socially categorised as African American are predisposed to heart disease (Kahn 2013). But the move from individual as social person to individual as DNA profile to collective DNA pattern and back to individual as social person assumes a congruency between social category and genetic category, which may well not be reliable.

In other words, as many observers have pointed out, although the genetics-based interventions into social persons appear intensely individualising, as they highlight the uniqueness of a person’s DNA profile, in fact they always rely on some kind of collective construct or pattern. Prainsack (2015, p. 29) comments that “Despite operating with a ‘radical’ notion of individual difference, personalised medicine still resorts to old demographic and epidemiological categories, as well as giving rise to new, no less problematic group categories”. As just one example, the economics of the pharmaceutical industry means that having a treatment tailored to a unique DNA profile is not viable: drug companies—and clinicians—necessarily have to aim treatments at categories of people who share specific genetic traits.

Likewise, M’charek (2000) has shown how DNA identifications of suspects brought to the courtroom necessarily rely on the concept of a population. Because entire genomes are not compared, identifications are always made in terms of the probability that a given person matches a given sample and the probability is calculated with respect to a reference population to which the suspect is deemed to belong. The possibility of reckoning a probability requires a reference population. In some cases, the reference populations in question, although necessary in the lab, have become practically redundant for courtroom purposes, because recent techniques mean the odds of a match involve astronomically high and low numbers. For example, Kahn (2012) shows that identifications brought to US courtrooms still specify racialised reference populations, even if the difference between using ‘Caucasians’ and ‘African Americans’ as reference populations might be that the odds of the crime-scene sample having come from someone other than the defendant increase from 1 in 96 billion to 1 in 340 billion. Kahn argues that these racialised reference populations are still used because of the weight of “inertia” racial categories carry in US society. But the larger point is that a reference population of some kind is necessary. The individual and the collective are therefore always in a relation of mutual constitution.

In studies of genetics and perhaps especially forensic genetics, the collective tends to be seen as linked to the ethically and politically negative side of the ambivalence of genetics. Note how Prainsack refers to group categories, both old and new, as “problematic”. At first glance, this is for obvious reasons, but I think the matter warrants a close look in two respects. First, is there a danger of assuming that the collective is automatically dangerous? The collective aspect often does work negatively, whether it emerges from a methodologically unwarranted extrapolation from individual cases, or operates through stereotyping individuals in terms of the supposed traits of the collective, or reinforces crude biologising notions of

racial difference, which could underwrite racism. But collective can be positive too, for example if an individual wants to be part of a Native American tribe and gain the perceived benefits, symbolic, emotional and material. Connections traced through DNA can also underwrite community, *Gemeinschaft* and political solidarity, which are familiar collective values that have positive ethical and political connotations—without themselves being unproblematic. It is therefore a good idea to specify clearly in what respects the collective is ethically and politically dangerous. Following from this, the second and more important aspect of the close look I am advocating involves attempting to assess the size and social impact of the risks. We may willingly accept that the collective entrains particular *potential* risks, but how big and widespread are they in practice?

The papers in this special issue identify potential risks in terms that, while clear, are also quite general. Cole (2018), Skinner (2018), and Hopman and M'charek (2020) demonstrate that diverse forensic processes and technologies, many of them involving DNA, but also hair and microbiome analysis, all reproduce racialised categories in potentially negative ways. Cole describes these racial categories as “crude and broad” and, in the cases he analyses, based on “less-than-fully transparent” claims and ascriptions of identity. Skinner suggests that, in mobilising race, new techniques in phenotype prediction “raise new questions” about the validity of their results; he also notes that generating suspicion around racialised populations creates disadvantage and stigmatisation for them. In their paper, Hopman and M'charek describe how various DNA phenotyping technologies produce racialised collectives in distinctive ways, each folded into a specific history of racial science and thought. For them, the production of (racialised) collectives in general is a “matter of concern” and they show how Dutch Green Party MPs feared that forensic DNA phenotyping (FDP) technologies were seen to involve the “danger of stigmatisation”. They also mention two cases (the 2013–2014 Brockton rapist case and the cold case of a 1981 Texas murder revisited in 2018) in which FDP results travelled to police stations and the media and shaped the investigation by producing images of faces that looked like they belonged to individual persons—one black, the other white in US terms—rather than being “statistically averaged rendition[s] of facial characteristics”.

Vailly and Bouagga (2019) argue that the French DNA database of offenders produces a collective category of ‘suspect’, which is problematic because it is too broad (it includes people who have only been arrested and those who have been acquitted), is disproportionate to any real or suspected offence (for example, protests in favour of citizenship rights) and may include wholly innocent family members and people whose only offence is having refused to provide a DNA sample. For García-Deister and Smith (2019), the key collective at stake is the nation-state, which claims sovereignty over dead bodies, seen as in need of identification so they can be repatriated to their home territories; in the process, the “tenacity” of this and other collective categories, including race, class and gender, is upheld and problematically facilitates “the reiteration of Other collectivities” such as “immigrant hordes” and “alien invaders”.

Tapaninen and Helén’s paper is somewhat of an exception to this explicit or implicit critique of the collective, perhaps because the main collectivity in their case

is ‘the family’, into which individuals are admitted or rejected for immigration and asylum purposes, depending on the extent to which Finnish Migri officials perceive them to be legitimate members of a given family (Tapaninen and Helén 2019). It is clear that exactly how ‘the family’ is invoked and deployed in forensic identifications is subject to contention. In this case, the concept of a kinship unit based on a European nuclear family, with associated notions of durability and intimacy, may count against kinship units or networks based on Somali practices. In other cases, family can be deployed in ways that create new categories of suspects, with potentially negative effects—familial searching, for example (as Vailly and Bouagga show)—or reveal unwanted and damaging kinship connections. But in Tapaninen and Helén’s paper the family appears as less ethically and politically dangerous than (racialised) populations of suspects or alien Others. Some people, who can’t prove a connection (genetic or otherwise) to the satisfaction of the authorities, may be excluded from the country—but others can be included on the basis of a DNA test, even if they lack paperwork, and indeed some may be allowed in even if they lack a genetic connection (e.g. have been fostered). In keeping with this, it bears noting that the authors declare that, previously hostile to the use of DNA testing in this context, they now are “inclined to concur [with officials and many families] that DNA testing may be the best option for many”.

In all these cases, the analytic task focuses on unveiling how a collective is constructed and/or invoked, often in hidden or taken-for-granted ways, and on the potential ethical and political risks attached to its presence. The analytic task of unveiling has a different quality when applied to, say, population genetics, where the collective dimension is much more obvious to begin with. By contrast, in forensic genetics, the unmasking is particularly necessary, because the collective routinely gets hidden behind the apparently individualising operations of forensic genetic technologies. For example, in cases such as family reunifications based on DNA matching, or the identification of an individual murderer or rapist, the background operation of the collective recedes into the ethical distance, overwhelmed by the ethical benefits of the individual identifications.

My point is that the analysis focuses on showing in detail *what* collective dimensions are created or invoked by the forensic process in question and *how* that happens in practice (in the lab, in the police and justice system, in the immigration offices). This attention to process is, of course, the bread and butter of STS and is highly productive and valuable. In contrast, the ethical and political dangers themselves, which result from the collective dimensions, are often mentioned only very briefly. It is noted in passing that whole categories (which may be racialised) are turned into suspect or stigmatised populations (Vailly/Bouagga, Skinner, Hopman/M’charek), or ‘othered’ as alien (García-Deister/Smith). Sometimes the dangers are taken as read in an often implicit argument that techniques that underwrite a biological basis for racialised difference clearly present an ethical and political problem (Cole and, less implicitly, Skinner and Hopman/M’charek). There is nothing wrong per se with this argument—I have spent a lot of time making it myself (Wade 2017).

However, a further step in all this—not one that could have been encompassed by the papers in this special issue and more a question for further research—would be to explore in more detail how and how much those ethical and political risks are

manifested in practice. It may seem obvious that the DNA-based forensic border-control technologies described by García-Deister and Smith, which try to locate dead individuals in national spaces and, in doing so, tend to evoke a collective in the shape of alien, invasive Others will underwrite punitive and nationalist immigration policies and practices.¹ But it would be valuable to trace in detail how and to what extent this happens. How much do these forensic practices feed back into everyday practices of sovereignty around immigration and how large is the effect they have?

Or in the case of the population of suspects that is created by the way the French DNA database is constructed—what and how big are the practical consequences of this in terms of putting individuals at risk in terms of being targeted unfairly? The refuseniks who will not give a DNA sample are criminalised as a result, and the consequences of this are easily imaginable in terms of employment opportunities (although it would be interesting to explore how large this effect is), but the consequences for those who have been included in the database as family members are less obvious in principle and would be interesting to know in practical terms. The same goes for the practical consequences of the fact that the supposedly non-coding genetic markers permitted under French law for constructing a DNA profile may actually be used to predict medical conditions and ‘ethnic’ origins.

Skinner explores how the UK’s national DNA database is being used in phenotype prediction and concludes that this technology is likely to ‘heighten the visibility of race in ways that mask the individual humanity of the people who are its subjects’. Hopman and M’charek make a similar argument about the FDP technologies being developed and used in Dutch and US research and forensic labs, but they go a step further and show how these technologies travel outside the lab into police practice in two specific cases.

These are important political and ethical dangers, to be sure, but it would be good to know more about the practical consequences of the use of FDP technologies in terms, for example, of the amount by which it increases the unfair targeting and arrest of black people—which was already an established pattern pre-DNA and indeed one that created racially biased databases in the first place. It is salutary to observe that, although Chow-White and Duster (2011) posed the question ‘Do health and forensic DNA databases increase racial disparities?’, their article was only able to suggest possibilities and risks rather than actually provide an answer in concrete (e.g. statistical) terms. More informative in this respect is Wallace (2011) who explains how massive over-representation of black people in the UK database—at a rate 4.5 times higher than the white population in 2008—can lead to them being disproportionately named as suspects in crimes (usually of burglaries and theft), which can then lead to intrusive investigations in which the suspect has to prove his/her innocence (not to mention the danger of miscarriages of justice). Wallace also argues that familial searching can lead to the unwanted revelation of unknown or secret biological links, which would

¹ Other forensic practices can involve caring and the creation of relational forms of citizenship (M’charek and Casartelli 2019).

disproportionately affect black families. However, while individual cases provide anecdotal evidence, no data are available to indicate the size of these effects.

In sum, I suggest that an important avenue for future research into the collective dimensions lurking behind apparently individualistic identification technologies is to explore in more depth the practical effects of these collective spectres, especially in terms of the size of their impact. It is an important step to unveil hidden processes, with the implied effect of debunking (cf. Latour 1993, pp. 36–43), it is a further step to reveal more fully the social impact of these individual–collective assemblages.

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