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Reaping the whirlwind of Nazi eugenics

Even twin studies aren't reliable when it comes to heritability (Image: Maia Flore/Agence VU)

*In the 1960s, eugenics was reinvented as behaviour genetics, but soon went back off the rails. Aaron Panofsky's*Misbehaving Science *explores what happened*

ARE some fields of scientific exploration so incendiary they should be fenced off and labelled "Keep out"?

I'm inclined to think not, both from a commitment to intellectual freedom and for the practical reason that if you put up such notices, trespassers are guaranteed. Still, if any area of research might warrant prohibition it is eugenics – the branch of human genetics used to justify repugnant Nazi ideology and, before that, the enforced sterilisation of "degenerates" around the world.

Yet eugenics was not cordoned off. A mere two decades after the second world war, it was reinvented as behaviour genetics. The story of what happened next is both gripping and salutary – and it is told with wonderful insight by sociologist Aaron Panofsky from the Institute of Society and Genetics at the University of California, Los Angeles.

It is testament to human resilience and optimism that behaviour genetics was born into an atmosphere of academic excitement. Seen as an antidote to behaviourism – the idea that behaviour can be scientifically understood without recourse to anything beyond the observable – the pioneers believed that by turning the spotlight on heredity they could achieve their dream of "unlocking the secrets of human nature and solving social ills like crime, homelessness, and madness", as Panofsky puts it.

What's more, they were convinced they could do this without reviving the menacing spectre of eugenics, or its diabolical cousins, racism, social Darwinism and biological determinism. One volume of essays establishing the field reads: "The concept of race is likely to remain of small general interest for behavioral science [because research in this area is] procedurally difficult, politically dangerous, and personally repugnant." Behaviour geneticists were determined their discoveries would not be misused for social or political ends. As Theodosius Dobzhansky, a hugely respected population geneticist and founder of the field, often said: "Differences aren't deficits."

> **"Research into race is procedurally difficult, politically dangerous, and personally repugnant"**

In hindsight it seems naive. But with an emphasis on academic inclusion and a remit to think broadly and creatively, the discipline flourished. This golden age lasted just a decade. Then came the fall.

In 1969, psychologist Arthur Jensen at the University of California, Berkeley, published an infamous article: "How much can we boost IQ and scholastic achievement?" It drew heavily on behaviour genetics to argue that the IQ gap between black and white populations had genetic causes and, as a result, educators could do little to reduce it. Commentators were up in arms. Panofsky describes it as "perhaps the most widely covered academic controversy ever". And it was the public reaction, as much as Jensen's preposterous assertions, that changed the course of behaviour genetics.

With the entire discipline under attack, the field fragmented, and those who were left closed ranks. This had disastrous knock-on effects. "It became difficult for behavior geneticists to distinguish constructive criticism from destructive attacks, and this made them less willing to engage each other critically," writes Panofksy.

The founding principles of social responsibility suffered, usurped by a responsibility to the discipline itself and to scientific freedom. And controversy bred controversy as the prospect of achieving notoriety attracted new talent. In short, the field became weak and poorly integrated, with low status, limited funding, and publicity the main currency of academic reward. This, according to Panofsky, is why it is afflicted with "persistent, ungovernable controversy" – his definition of "misbehaving science".

It all seemed inevitable. Sooner or later, behaviour genetics would come up with something contentious – a gene "linked to" aggression or homosexuality, to name two examples that came later – a media frenzy would ensue, and the scientists would fight their corner. Misbehaviour was in its nature.

But, after Jensen, behaviour genetics changed in another way, which was more unexpected and, to my mind, more unforgivable. Panofsky recounts how, as the bunker mentality set in and some practitioners defected, channels of enquiry narrowed until research came to focus almost exclusively on the slippery concept of heritability.

Take a population of, say, tomato plants, and a trait, say, height. That trait will vary among members of the population, and the proportion of variance due to genes, rather than environment, is the heritability.

Behaviour geneticists came to see finding high heritability as a justification for their work. But heredity changes depending on the environment. Grow those tomatoes in a regulated greenhouse and almost all the difference in their height will be thanks to their genes; grow them on a sloping, partly shaded field and the effect of heritability is lower.

Nature and nurture are not distinct, and the complexity of their interactions is increasingly apparent in this genomic age. Heritability can't even be reliably estimated in humans using twin and adoption studies, the method of choice for behaviour geneticists.

All this undermines the supposition that heritability tells us about the cause of a behaviour. In fact, heritability is almost entirely meaningless. Forget "misbehaving science", for me the tragedy of behaviour genetics is that it has become bad science.

Misbehaving Science: Controversy and the development of behavior genetics
Aaron Panofsky

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