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Theodore M. Porter

Genetics in the Madhouse: The Unknown History of Human Heredity

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As a public movement, eugenics – the breeding of supposedly better humans through science – began in the early twentieth century. But its roots are eminently Victorian. The term goes back to a book published in 1883 by the London polymath Francis Galton, who had introduced the idea in a pair of magazine articles in 1865. Galton in turn drew inspiration from his cousin Charles Darwin's *On the Origin of Species* (1859), and its opening chapter on how breeders improve domesticated plant and animal varieties by allowing only the best individuals to mate. For Darwin, such artful or "artificial" selection was an analogue for the main process responsible for new species in nature, thus called "natural selection." From the same starting point, Galton set off in a different direction. Given the amazing improvements that artificial selection can produce in crops and livestock, just imagine, he suggested, what it might achieve when applied to humans. "Men and women of the present day," he prophesied, "are, to those we might hope to bring into existence, what the pariah dogs of the streets of an Eastern town are to our own highly-bred varieties."

Beyond the writings of Galton and Darwin lie more diffuse origins for eugenics. Previous histories have traced it to everything from Plato to phrenology. *Genetics in the Madhouse*, by Theodore M. Porter, makes a deeply researched and deftly argued case for the insane asylum. "By 1859," Porter declares, "eugenics, in a broad sense, was old hat." Yes,

Galton did more than anyone to promote a positive vision for the selective breeding of humans, and to try to prove statistically, in the service of that vision, that "genius" was hereditary. But he was far from alone in taking mental inheritance seriously, in marshalling statistics to study it, and in connecting the dots to selective breeding. For medical men working at mid-century in asylums in Britain, Germany and elsewhere, Porter shows, it was a commonplace that the only way to halt the spread of insanity was to stop anyone with a hereditary predisposition to it from reproducing. They arrived at that view, on Porter's account, as late eighteenth-century optimism about the new asylums as places of treatment faded; as asylum records gradually came to include statistics on the causes of insanity (with hereditary causes featuring prominently from the start); and as the role of asylum doctor or "alienist" emerged, along with specialist journals where these new professionals kept abreast of the latest developments.

Until 1900, there was little overlap between the alienists' world and Galton's world. A fascinating exception touches on the theme of degeneration. In articles and books, a French asylum doctor, Bénédict Augustin Morel, argued that the human species was doomed to degenerate because heredity was intrinsically degenerative. Widely discussed, Morel's claims have come to seem emblematic of a gloomy anxiety that is reflected across late nineteenth-century arts, sciences, philosophy, and politics. Historical scholarship on degeneration paints a picture of a culture on the verge of a nervous breakdown. Before this background, it comes as a surprise to learn that a severe critique of Morel was published in a German asylum report in the mid-1860s. Included in the report was a statistical table showing that, contra Morel, mild nervous disorders only rarely advanced in the next generation to full insanity. Heredity, in other words, was the transmitter, not the source. Far from undermining stability, heredity underpinned it: a conclusion that, as a subsequent report

noted, harmonized well with Darwin's theory. Whether artificial or natural, selection works only because selected variations reliably reappear in offspring.

What changed after 1900? Most important, along with the rising profile of eugenics, were two arrivals. One was genetics, a new science of heredity sprung from enthusiasm for Gregor Mendel's rediscovered paper on experiments with hybrid peas. On Mendelian principles, what offspring inherit from their parents are unitary factors or, as they were soon known, genes. In peas, "Mendelism" explained seed colour as due to the inheritance of genes for either yellowness or greenness. A similar explanation seemed to hold for some human characters, such as eye colour. Could a gene be found for something as complex as insanity? What about mental deficiency – "feeblemindedness," in the language of the day? These questions energized the other post-1900 arrival, an American zoologist and adept of Galton's statistical biology, Charles Davenport. He rapidly embraced Mendelism and eugenics as if they were made for each other. Seeking collaborators in asylums and special schools, this "high priest of presumptive Mendelism," as Porter calls him, was thrilled to discover eager doctors with filing cabinets full of hereditary data ripe for analysis. Those data yielded patterns conforming to presumptive Mendelism only by the ad hoc lumping of disease categories. Davenport was clear: however complicated the reality, one should, for the sake of practical eugenics, be ready to simplify.

Davenport's solution – compromising in both senses – became standard procedure. "Again and again," Porter writes, "geneticists acknowledged the inadequacy of single-gene explanations in one breath and then proceeded in the next as if heredity could mean nothing else." Perfunctorily hedged talk of "genes for" insanity and feeblemindedness smoothed the path for eugenic policies, culminating in Nazi euthanasia and genocide. Determinist thinking and talking about genes remain a problem. That is one link between our present and the past chronicled so expertly in *Genetics in the Madhouse*. Another continuity concerns data. The

science of human heredity, Porter stresses, has always been reliant on big data. Records of diverse kinds, from patient histories to census forms to the pedigrees assembled by Davenport's volunteer army of eugenic fieldworkers, got acquired, stored, shared, occasionally standardized, and perpetually debated within an evolving moral and material infrastructure. These themes of determinism and data come together: for, then as much as now, the larger and less managed the pool of data, and the greater the sense of obligation to answer to the differences as well as the similarities, the lower the temptations of determinism.

In a story without heroes, the figure of the German physician Wilhelm Weinberg nevertheless emerges as a virtuous counterpart to Davenport. Biologists remember Weinberg for a pioneering bit of mathematical Mendelism called the "Hardy-Weinberg theorem," which shows that, in a large and randomly interbreeding population insulated from natural selection and other disturbing factors, gene frequencies stay the same down the generations. ("Hardy" was the Cambridge mathematician G. H. Hardy, who published the same result in the same year, 1908.) One lesson seemed to be that eugenic targeting of the "unfit" will often be ineffective, even on presumptive Mendelism, since for many traits, the vast majority of culprit genes will be carried invisibly in outwardly normal men and women. Weinberg backed eugenics – he was one of the founders of the German Society for Race Hygiene – but was never an advocate for compulsory sterilization. And his scrupulous fidelity to his data on heredity led him to frame Mendelian conclusions far too complexly ever to qualify as eugenic nostrums. Of course determinism still found a way in Germany. Porter tells us that, not long after the Nazis took power in 1933, colleagues of Weinberg put out a book introducing and explaining the new sterilization law. They began with Mendel's principles.

Where, on the spectrum between Davenport and Weinberg, should we place Galton? So entrenched is his reputation as begetter of the catastrophes of twentieth-century eugenics that the question may seem hardly worth asking. At University College London, to which

Galton gave funds as well as his personal archive, and where a lecture theatre still carries his name, a commission is currently meeting to decide the fate of what is now seen as an embarrassing legacy. Reading Porter's book prompts two rather different, though not contrary, thoughts.

One is that a balanced view of Galton and his admirers has to make room for all they did in building up the data side in that determinism-versus-data dynamic. The scientific attack on the presumptive Mendelism of Davenport and his American psychiatrist allies was, as Porter reminds us, led by the mathematician Karl Pearson and his students at the Galton Eugenics Laboratory at UCL. Their criticisms of Mendelian claims for single genes for feeblemindedness, insanity, racial distinctiveness and so on were, in the first instance, criticisms of shoddy analysis of shoddily acquired data. Nor was Galton's own work quite so straightforwardly determinist about heredity. The phrase "nature and nurture" has a Shakespearean precedent (in *The Tempest*); but it was Galton who made it part of everyday English. He promoted it to counteract the notion that he denied a conditioning role to contexts, developmental and environmental.

But perhaps – the other thought – we lose more than we win with any such retrospective judgements. Great Man History has long been out of favour, and rightly so. Bad Man History, laying the blame for major historical wrongs wholly on individuals, is no better. Galton's proposals eventually proved fertile in part because the ground became so well prepared, as Theodore Porter helps us to see more clearly than ever before. It was not Galton's arguments that made eugenics irresistible, on the Left and on the Right, but their tapping into wellsprings of support bubbling along in the culture independently of him. Had he never existed, there would still have been something very much like eugenics in the decades around 1900. Consciousness-raising about this history and our implication in it is indispensable, and the more powerful without scapegoating.

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