Madness in Numbers

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Genetics in the Madhouse: The Unknown History of Human Heredity
by Theodore Porter
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In *Genetics in the Madhouse*, Theodore Porter retraces the study of human heredity to its origins in the lunatic asylums of the eighteenth and nineteenth century. Preceding the discovery of DNA by more than a century, the field emerged far from the laboratory, "amid the moans, stench, and unruly despair of mostly hidden places, where data were recorded, combined, and grouped into tables and graphs."[1] Porter's account describes an evolving science—anything but a clearly demarcated discipline. It is a story with many actors: patients and their families, physicians, health officials and bureaucrats, politicians, and the directors of asylums, poorhouses, prisons, and special schools.

In attempting to unlock the secrets of human heredity, researchers developed new methods to quantify the knowledge they gathered, whether it was gleaned from institutions or reflected in traditional beliefs. In its infancy, this new "data-driven science *avant la lettre* [emphasis added]," as Porter describes it, was a messy and uneven business.[2] It was also almost entirely dependent on mundane, bureaucratic tools to amass, order, classify, and describe the traits of biological inheritance. Rather than consigning these rudimentary beginnings to background detail, Porter is keen to stress their lasting influence and the contributions of his cast of mostly forgotten characters. The research programs they defined, the human subjects they tracked down, and the personnel they selected and trained to gather, analyze, and circulate clinical data all played a role in the development of the twentieth-century science of human genetics.

Beginning in 1789 with the story of King George III's debilitating mental illness, Porter's account winds its way through an impressive array of archival sources throughout Great Britain, France, Norway, Germany, and the United States. Infused with deadpan humor and an abiding skepticism toward data-driven approaches, *Genetics in the Madhouse* is a defiantly revisionist history of human genetics. In recounting how the fog of mental illness was translated into evidence for human heredity, Porter demonstrates that the shift to quantification produced its own folly of numbers, both then and now.

The thirteen chapters of *Genetics in the Madhouse* are arranged in three parts, each of which is dedicated to one of three basic data and information technologies. In the opening section, a new science of human heredity begins to emerge from the adoption of systematic record keeping and the collation of asylum statistics. The development of admission forms played a key role. The existing procedures governing admissions, both within and among institutions, reflected long-established medical routines. In particular, the compilation of casebook histories predominantly focused on the causes of illness, its duration, and cures. In attempting to fathom the particulars of what had caused a breakdown, these procedures produced institutionally idiosyncratic accounts recorded in scattered paper trails. Since asylums were, for the most part, public institutions accountable to city or state governments, admission forms were also deployed as a bureaucratic tool. Porter recounts how asylum directors, working almost by instinct rather than any particular guidelines, totaled up entries from admission forms or created age intervals. No matter how they were compiled, these numbers carried considerable weight in shaping public health infrastructure. They provided the basis for arguments about how many institutions were needed to attend to the insane and how successfully such institutions were being run.

In the opening chapters, Porter provides a detailed account of asylum record keeping between 1789 and the 1850s in Europe and the United States. This was a period in which asylum doctors often lacked specialized training for dealing with mental disorders. Their efforts to discern the causes of madness and the details of its first occurrence were heavily reliant on the statements of family members. As a result, the surviving records list a wide range of causes. In men, these included misfortune, drink, and masturbation. By contrast, the onset of madness

in women was associated with unrequited love, jealousy, bad marriages, distress, worry, and grief. The records catalogue any number of complex and often saddening stories of economic deprivation and abuse. They also offer an unsettling insight into the hazards of life at the onset of industrialization.

Although the understanding of heredity and madness during this era was limited, asylum records, right from the outset, contained a great variety of causes attributed to family and heredity. While doctors often complained that statements provided by relatives were unreliable, they nonetheless recorded almost anything a family member suggested. The notion of inheritance that emerges from these records was little more than a "basic sense of tending to run in families."[3] Porter shows that this was not a concept rooted in medicine or statistics, but an accepted fact of everyday life—albeit one with crucial relevance in legal discourse concerning inheritance. Here Porter identifies a fateful dynamic. In their embrace of numbers, tables, and calculations, doctors stimulated efforts for further improvements that, in turn, yielded ever more tables and calculations. The "cosmopolitan spirit of the quantified lunatic asylum,"[4] as Porter puts it, subsequently took hold in countries such as Britain, France, Germany, and the US, spreading quickly from the 1840s onward.

In order to become meaningful tools in the search for hereditary madness, causes, as attributed by asylum doctors, required uniform categorization. This notion was at first controversial. Many doctors were opposed to creating narrow categories for the sake of producing numbers. They feared that such an enterprise would yield misleading results, since actual causes were so often accepted as uncertain and mysterious. For many of these early critics of statistical approaches, heredity was seen as a tendency or process far too complex and elusive reliably to be categorized. This viewpoint was prevalent in France, but less common in Germany, where doctors accepted the poor quality of the data, focusing instead on the benefits they saw in adopting statistical methods.

As part of a wider discussion in bureaucratic and public health circles about the efficiency of asylums, the notion of hereditary madness became a powerful argument to explain poor institutional cure rates. Moreover, efforts to understand hereditary causes offered the promise of a means to block the onset of madness at its source. Beginning in 1838 with John Thurnam's inquiries at the Retreat, an asylum near York, family investigations emerged as a basic research technique. Thurnam's work was widely adopted as a model. Researchers began examining population statistics and census data to investigate the incidence of hereditary madness on a collective level. This research was also used to make an argument for controlling its reproduction, a line of thought later taken up by eugenicists.

In 1844, Jules Baillarger, the director of the *Maison de Santé* in Ivry-sur-Seine, published a template for uniform data entry. Porter's historical account enters its second phase in the late 1850s, coinciding with the widespread adoption of this innovation. Baillarger's proposal to homogenize asylum statistics was intended to form the basis for a collaborative research program within the centralized French medical administration. Baillarger's overriding goal was to generate tables that would reveal hereditary patterns along gender lines, determining the ratios by which mental illness was passed from mothers to daughters and from fathers to sons. The broad classifications used by Baillarger triggered an international debate over the validity of such sweeping and uniform standards. In France, speculation about the causes of insanity had traditionally been considered the domain of philosophers. Baillarger's statistical categories for mental illness were highly contested.

In the end, it was warfare rather than philosophical debates that brought the arguments to a close. After France's defeat in 1871, Germany joined the wider effort to standardize asylum statistics along with census results. The subsequent Prussian census was the first to not only integrate asylum data on hereditary insanity, but also to consolidate asylum patient census data in a central state registry, housed in the census bureau.

The pedigree table was another important innovation. It was first introduced in 1859 by Ludvig Dahl in an effort to trace the hereditary traits of madness within the families of a small Norwegian community. The emergence and widespread adoption of this technique marks the beginning of the third phase in Porter's account, covering the period between 1890 and 1930.

Pedigree tables merged approaches long used in asylums with novel statistical methods developed to explore hereditary correlations. As a result, questions in relation to heredity came to be explored in joint projects by doctors, biologists, and statisticians. The turn of the century saw the emergence of figures such as Francis Galton, Karl Pearson, Charles Davenport, Wilhelm Weinberg, Ernst Rüdin, Lionel Penrose, and Wilhelm Schallmayer. Some later became prominent in the eugenics movement.

One of Porter's main achievements in *Genetics in the Madhouse* is to demonstrate how the datafication of madness in nineteenth-century asylums played an important role in shaping genetic research during the 1930s and the decades that followed. Between roughly 1890 and 1910, biologists and statisticians became familiar with and built on work that had been taking place for many years in mental institutions. From here, Porter follows two main strands of heredity research, Mendelism and empirical prediction. In the absence of a modern understanding of the gene, Mendelian explanations ultimately proved disappointing. Quantitative analysis, especially in Britain and Germany, focused on hereditary trait statis-

tics with somewhat more success. In an era of mandatory public schooling, feeblemindedness became an urgent social and medical problem. An ever-expanding range of experts involved in the battle against mental defects boosted eugenics, long existing under various names, into a movement "nourished by data flowing in ever wider channels."[5]

In Porter's account, research on human heredity was entwined with social concerns throughout the twentieth century. Asylum medicine, university courses, regulatory practices, and state commissions all reflected widely held beliefs about hereditary mental defects: "A brave new world of rationalized armies, factories, and imperial colonies," Porter observes, "seemed to demand strong, efficient citizens, to be guided now by science."[6] For those considered unfit to comply with this ideal, a loosely organized international network of asylum doctors, psychologists, criminologists, and biologists searched for eugenic solutions to what they saw as persistent problems of heritable insanity and feeblemindedness.

The final chapter of *Genetics in the Madhouse* examines how German programs of human heredity research and intervention accommodated Nazi politics and objectives. Porter emphasizes that the influence of German efforts to ground empirical prognosis in psychiatric, educational, and criminological data was widely felt. Indeed, German studies formed the basis for American, British, and Scandinavian genetic research and counseling programs in the period leading up to the Second World War. It was only later during the postwar era that such connections, now deemed untenable, were finally severed.

Porter's account emphasizes continuities in the methods and techniques employed in the study of human heredity from the earliest work undertaken in nineteenth-century asylums through to current genetic research. Elsewhere in *Genetics in the Madhouse*, Porter offers a well-founded and detailed critique of data-driven approaches to science. Many of the figures featured in the book shared the concerns expressed by Porter about the pitfalls of trusting numbers and the assumptions baked into them. These dissenting voices form a disconcerting subtext to the story, expressing justifiable anxiety about some of the quantitative methods that have been developed to manage and predict hereditary risk.

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1. Theodore Porter, *Genetics in the Madhouse: The Unknown History of Human Heredity* (Princeton: Princeton University Press, 2018), 2.
2. Porter, *Genetics in the Madhouse*, 16.
3. Porter, *Genetics in the Madhouse*, 29.
4. Porter, *Genetics in the Madhouse*, 15.
5. Porter, *Genetics in the Madhouse*, 218.
6. Porter, *Genetics in the Madhouse*, 218.

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