

Book Review

Edited by Jordan Mansell

Dalton Conley and Jason Fletcher, *The Genome Factor: What the Social Genomics Revolution Reveals about Ourselves, Our History & the Future* (Princeton, NJ: Princeton University Press, 2017), 282 pages. ISBN: 9780691164748. Hardcover \$29.95.

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The Genome Factor is an excellent primer on how the latest genomic research methods and findings can be integrated into conventional social scientific approaches on a broad range of issues. The book also provides a very good overview of the implications of the genomics revolution for the general public with regard to matters such as health care, education, reproduction, ethics, privacy, and dating. Dalton Conley and Jason Fletcher have a clear, engaging writing style, use metaphors very effectively, and are able to explain complex concepts and methodologies in a way that is comprehensible to nonexperts without losing vital content. The book is suitable for university students at any level or any person with a passion for popular science. It is especially appropriate for social researchers who have had minimal exposure to behavior genetics, in particular, those who have been frightened off by any study that uses genetically informed data.

The authors make the point that if one is to fully understand social and situational influences, which form the core of traditional social science models, one must consider genetic factors. This can be done with heritability studies of different kinds, which range from research using the classic twin method — in which the level of similarity among monozygotic twins on a particular trait is compared with that for dizygotic twins — to genome-wide association studies that scan the entire genome in search of genetic variants that may be associated with a particular outcome of interest. The strengths and weakness of these approaches are presented in a balanced way, and the authors make it

clear that it is extremely challenging to cleanly separate environmental from genetic causes.

By the same token, Conley and Fletcher suggest that genetic influences are best understood by considering the social environments in which they operate. In fact, it is in the area of genotype-environment interplay that they see a new paradigm emerging from older social science and natural science models. The key idea here is that the effect of a particular social environment may depend on the genotypes of the people in it, while, conversely, the effect of a certain genotype can vary under different social conditions. Complicating these genotype-environment interactions is the fact that the placement of people in a particular social environment is often not random, since it may be correlated with genotype. The authors do a good job of illustrating how such genotype-environment interactions and correlations are relevant to issues such as social inequality and how difficult it can be to tease out the interactions from the correlations. For example, they discuss how their own research evaluated a classic genotype-environment interaction study that indicated that the heritability of IQ varies with socioeconomic status. If that proposition is empirically true — and demonstrating it to be so is no small feat — then poor people are not able to reach their genetic potential for things such as education and employment, a notion that has important implications for the reproduction of social stratification.

Similarly, the authors provide a critical assessment of a number of high-profile studies that found that some children who were physically abused developed antisocial tendencies later in life, but others with similar childhood experiences did not. Was this another instance of genotype-environment interaction, or is it better understood as a genotype-environment correlation? While no clear answers to these sorts of questions have emerged, the beauty is in how the causal processes involved are conceived, with both social and genetic influences brought into the analysis. What Conley and Fletcher question is not whether genetic effects are relevant to the phenomena under consideration, but rather how such effects operate and how their influence may be related to environmental factors. It is this sort of debate, rather than disagreements over whether genes should be

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brought into the discussion at all, that the authors see as the best path to a full understanding of the issues with which social scientists concern themselves. Also, the authors suggest that in situations where the existence of genotype-environment interactions are likely to occur, personalized social policies may work better than a one-size-fits-all approach to social interventions, much like personalized medicine is necessary if a particular treatment is not appropriate for everybody.

The Genome Factor does not gloss over the abuses associated with past biosocial approaches, such as eugenics. Nor does it skirt present dangers such as the doctrine of genetic determinism, unequal access to personal genomic information that may be crucial to people's health and well-being, or genoism (discrimination based on known genetic characteristics that may be practiced by insurance companies or employers).

An important theme that the book addresses at length concerns the highly controversial claim that social inequalities in economically rich countries in the present era are "natural" in that they are the outcome of a largely meritocratic sorting process in which the best and the brightest acquire their positions at the top by virtue of their superior biology. This would imply that remedial social programs are largely a waste of time and money. Conley and Fletcher counter this notion in a couple of ways. One particularly effective way is by showing just how difficult it would be from an entirely empirical and scientific standpoint to show with any certainty that contemporary Western societies are in fact "genotocracies," that is, that stratification patterns are predominantly genetically based and largely unalterable. For a variety of reasons, we just do not have the scientific means needed to test that claim.

A second way the authors dispute the genotocracy hypothesis is by discussing research findings that are inconsistent with it. For example, genetically informed data do not provide a better statistical predictor of the number of years of education people will get when they are used with cohorts born in the 1960s compared with those born in the 1920s, when nongenetic barriers to education such as formal racism, sexism, and class bias were much more predominant. This suggests that a

progression toward a genotocratic society has not taken place and that social factors still influence access to education.

The book contains a commendable discussion of what is probably the most incendiary topic in the area of biosocial analysis, namely, "race" as it is popularly conceived. This is the most difficult issue upon which to base a rational discussion in a field strewn with controversies on a wide range of topics. Just broaching the subject invites turmoil and distrust, as well it should, and one could make a strong case that research in this area can only produce more harm than good. To their credit, Conley and Fletcher provide a sound justification for devoting a chapter to "race," including the idea that if people of goodwill who use the most rigorous scientific methodologies available do not engage others on this topic, that will leave an intellectual vacuum that less rigorous and compassionate people would be only too glad to fill.

The authors explain how common notions of "race" are "just plain *wrong* in genetic terms" (p. 7; emphasis in original). Popular misconceptions include the idea that the various "races" as they are usually defined reflect a maximization of the genetic differences between groups and that such differences are easily measured. They also point out that there is often a mismatch between "racial" categories and the geographic ancestry to which they are attributed. Conley and Fletcher argue convincingly that on this issue, researchers do not as yet have the ability to partition non-socially mediated genetic effects from those whose impact depends on the social context in which they operate. In the end, the authors take the position that discrimination is likely responsible for the bulk of the group differences observed at the phenotypic level.

This is the book I will recommend to colleagues and friends who want or perhaps need a thorough but accessible introduction to social genomics. It faces key controversies head-on and even points out potential pitfalls to a genetically informed approach to social issues that could arise in the near future. But, ultimately, the book deserves serious consideration because the new scientific paradigm it champions comes closer to embracing the full complexity of social and biological life than the traditional social or natural science perspectives can.