The allure of genetic explanations

Scientists find them more attractive than social explanations

Throughout history differences in physical and behavioural characteristics between people have been explained in terms of biological differences.¹ As societies developed and became stratified biological explanations of differences among ethnic groups and between the sexes were used to account for and justify the inferior social status of women and minority ethnic groups.

Women have suffered numerous forms of discrimination because of their gender. Slavery in the United States was justified by theories of the innate intellectual and moral inferiority of African Americans. The Nazis carried these theories to their ultimate conclusion; millions of Jews, Romanies (gypsies), Slavs, and homosexuals, who were determined by the German scientists of the day to be genetically degenerate, were killed to protect the "racial purity" of the German people.

Biological theories accounting for differences between groups have fallen into disfavour, both as a consequence of the social movements for racial and gender equality of the past three decades and because the studies have been conceptually or methodologically flawed.² Interest continues, however, in determining the biological basis of differences between individuals in such traits as intelligence, aggression, and other behavioural traits.³ These studies have depended on the techniques of quantitative genetics used to study heritability. Recently, molecular geneticists have become interested in the possibility of discovering genes that are responsible for behavioural differences between people.⁴

The renewed interest in the biological basis of human behavioural traits has been accompanied by a surprising sociological phenomenon. Previously these investigations were carried out mainly by representatives of powerful groups in society and were used to justify the hierarchical nature of the society. Research claiming a hereditary basis for numerous social and personality problems, such as criminality, prostitution, feeble-mindedness, and pauperism, and restrictive and racist immigration laws and eugenic sterilisation laws in the United States were supported by powerful business interests in the early part of the century.⁵ Today, however, research into the biological basis of behaviour is often carried out by scientists who are either members of or advocates for the less powerful groups. The most striking example, in view of the biological theories of the Nazi scientists, is the effort by several openly gay researchers to demonstrate the biological basis of homosexuality.⁶

What is the origin of this seemingly overpowering attraction of biological and genetic explanations of human behaviour? Although biological theories are still used to rationalise inequality in attempts to show the biological inferiority of women or ethnic minorities,⁷ the recent explosion of interest in genetic explanations of human behaviour is probably the result of several additional factors. Firstly, molecular biologists have been attracted to this subject because the new molecular techniques may enable researchers to determine whether a genetic basis for a behavioural trait exists and to elucidate its mechanism. Such genetic explanations are alluring because they provide concrete and easily understood explanations for complex behaviours of longstanding interest. Moreover, unlike twin or other family studies used in the analysis of heritability, molecular studies can be replicated and either confirmed or refuted by researchers in other laboratories.⁸

Secondly, for certain diseases finding a gene means that the disease may be treatable. If a form of the disease is caused by a single gene or a few genes treatment might be effected either at the level of the gene product or at the level of the gene itself.

Thirdly, some researchers, especially those studying homosexuality and alcoholism, believe that their work has positive social consequences. They believe that if a behaviour is shown to be genetic then it does not result from conscious choice and—in contrast with the view expressed above—is likely to be resistant to change. Society would consequently no longer blame or discriminate against homosexuals or people with alcoholism.⁹

We believe that this position is misguided for several reasons. Firstly, genetic does not mean unchangeable. Some genetically based conditions—for example, phenylketonuria—are quite malleable. On the other hand, other genetic conditions as well as some environmentally based behaviours may be very difficult to change. Secondly, homosexuality and alcoholism are complex behavioural patterns. Suppose, as is quite possible, that some people with alcoholism have a defective gene but others develop alcoholism because of overwhelming stresses in their lives. Are the latter to be treated less sympathetically than the former? Finally, discrimination in our society still exists. It seems naive to believe that societal attitudes towards alcoholism or homosexuality will change if these conditions are determined to have a genetic basis. Recent studies have documented examples of discrimination suffered by persons with genetic diagnoses.¹⁰

Genetic research into the biological basis of human behaviour will almost certainly provide new insights. Given the history of biological theories of human behaviour and social problems, however, we know that the line between an explanation of "deviant" behaviour and the justification of discrimination against people manifesting this behaviour is easily crossed.^{11 12} We must learn from the methodological mistakes and limitations of earlier research into the genetics of human behaviour. The social and political implications of current research into the biological basis of human behaviour are profound and, if past errors are to be avoided, require discussion among scientists, clinicians, and the public.

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