

said, exists "to do away with the sufferings of the sick, to lessen the violence of their disease," but also "to refuse to treat those who are overmastered by their diseases, realizing that in such cases medicine is powerless." Socrates apparently offered a sharp warning to doctors who were tempted by money to prescribe futile interventions. He warned that they may suffer the same fate as Asclepius, a reputable physician who was killed by lightning after being "bribed with gold to heal a rich man who was already dying."

Although modern doctors sometimes encourage the false perception that medicine can perform miracles, the ethical standards of modern medicine are increasingly judging such actions harshly. Even if Ryan survives to lead a reasonable life, this hardly refutes the judgment made earlier by the Sacred Heart doctors. They correctly judged that the odds of dialysis benefiting Ryan were exceedingly slim and the odds of causing Ryan significant pain were overwhelming.

Caring for Patients

The Nguyens stated more than once that they longed for a physician who "cared." Yet painful, futile treatments are a poor substitute for genuine caring. When lifesaving interventions are futile, caring is best expressed by doctors and nurses who reaffirm to patients and families that they will not be abandoned, and that everything possible will be done to minimize the patient's suffering. Undoubtedly, some families will reject these overtures and continue to insist on

futile interventions. Yet far too often, demands for futile treatment arise not because the family has been offered other options and rejected them, but because the choice the medical team presents is between futile treatment or "doing nothing." By redoubling their efforts to care for patients and families, providers can make the process of acknowledging futility a more acceptable and humane prospect.

— Nancy S. Jecker

Nancy S. Jecker is associate professor in the Department of Medical History and Ethics, University of Washington, and coauthor (with Lawrence Schneiderman) of *The Wrong Medicine: Doctors, Patients, and Futile Treatment* (Johns Hopkins University Press, forthcoming). Sources: Gina Kolata, "Battle over a Baby's Future Raises Hard Ethical Issues," *New York Times* (December 27, 1994); J. Todd Foster, "Parents, Hospital Battle over Fate of Sick Infant," *Spokane Spokesman Review* (December 13, 1994); Lawrence Schneiderman, Nancy Jecker, and Albert Jonsen, "Medical Futility: Its Meaning and Ethical Implications," *Annals of Internal Medicine*, vol. 112 (1990); Daniel Yankelovich, *Coming to Public Judgment* (Syracuse University Press, 1991); Jeanette White and J. Todd Foster, "The Struggle over Baby Ryan," *Spokane Spokesman Review* (December 26, 1994); Nancy S. Jecker, "Knowing When to Stop: The Limits of Medicine," *Hastings Center Report* (May-June, 1991); Hippocrates, "Art"; Plato, *Republic*, Book III.

Science and Social Harm: Genetic Research into Crime and Violence

A variety of current research programs investigate genetic influences on violent, impulsive, aggressive and criminal behavior. Some attempt to tease out genetic from environmental influences through the study of twins and adoptees; others utilize the latest genetic technology to search for markers, and ultimately genes, associated with crime and violence. Still others are laboratory and clinical studies of the neurobiology of human behavior. While they differ greatly in method and ambition, these programs share the assumption that it makes scientific sense to look for

genetic influences on morally or legally significant categories of human behavior.

Vigorous objections have been raised against funding such research. As a liberal academic and criminal defense lawyer, I have become well-acquainted with these concerns, having spent much of the last three years organizing, then defending, then reorganizing, an interdisciplinary conference on the research and its social, legal, and ethical implications. Opponents of genetic research into crime and violence have argued that it promotes racism, diverts resources and atten-

tion from the appalling social conditions that breed crime, and lays the groundwork for intrusive programs of social control.

The research does not, on its face, seem to warrant these accusations. It looks exclusively at individual, not group, predispositions to criminal behavior. The populations on whom most of this research has been conducted are not African-American but Scandinavian, and the claims of genetic influence it yields are generally quite modest. No mainstream researchers believe that there are single genes that cause violent or anti-social conduct; all regard behavioral phenotypes like criminal behavior as arising from a complex interaction of many genes and environmental factors. None believe that genetic influence makes criminal behavior less mutable, and many suspect that the most effective ways of countering genetic influence will involve social and economic reforms. Finally, few of these researchers advocate, or believe their findings would support, mandatory screening, involuntary medication, or harsher sentences.

There are some researchers, certainly, who embrace simplistic theories of the genetic causation of behavior, and who claim or attempt to find racial differences in genetic predisposition. But they are relegated to the margins of the scientific community, and financed by a small number of private foundations. Their claims are not the subject of most of the publicity, or most of the organized protest.

But even though mainstream researchers reject simplistic models of genetic influence, claims of racial differences in genetic predisposition, and dragnet screening programs, their research may reinforce public perceptions of criminal behavior as an essentially biological problem, affecting some races more than others. This is what their critics contend: that human genetic research focused entirely on individuals, and apolitical on its face, will nonetheless reinforce racist stereotypes and promote repressive policies of social control. I want to examine some of the more plausible concerns raised by these critics, to assess their legitimacy and their implications, if any, for the conduct of research on genetics and crime.

From Individual Predispositions to Group Stereotypes

Some critics argue that the distinction between research on individual and group predispositions is untenable, because claims of individual differences in genetic predisposition will inevitably lend support to claims of group differences. There are several ways in which this might happen. First, if some researchers find genes or genetic markers associated with criminal behavior in individuals, other researchers inevitably will try to compare the incidence of those genes or markers in different racial and ethnic groups. (The

material for such comparisons may even be found within studies on individual predispositions, if these studies involve multiracial populations and code subjects by race.) There are good reasons to doubt that the researchers would find significant group differences, or that any differences they found would correspond to differences in present rates of offending.

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Still, the discovery of individual differences in genetic predisposition may well have an adverse impact on minority groups even if, as seems likely, those groups are not found to have a higher incidence of the relevant genes or markers. There will be considerable pressure to use those genes or markers for detecting criminal tendencies in young children and assessing dangerousness in convicted offenders. Universal screening, as in the case of PKU, is very unlikely, but the selective screening of those who seem "vulnerable" by dint of misbehavior is well within the realm of social possibility. Those screened are likely to be drawn disproportionately from predominantly black and Hispanic inner cities, since these are the areas in which violent crime is concentrated. Such screening programs would create the appearance that genetic predispositions to crime and violence are largely a minority problem, because the genetic propensities of the predominantly white youth from areas where violent crime is less concentrated would be tested far less often.

Finally, even without population research or screening programs, the discovery of genes or markers associated with individual criminal behavior may be publicly perceived as implicating the black community. Many Americans see violent crime as a black or minority problem, in part because of the disproportionate number of African-Americans in prison, in part because of deeply embedded prejudices that make violent crime appear more characteristic of blacks than whites and obscure the enormous differences in behavior and disposition *within* groups.

The public reaction to my planned conference on genetic research and crime is instructive. Despite emphatic denials that the conference, or any of the researchers invited to it, were claiming or seeking to find racial differences in genetic predisposition, much of the interested public assumed they were. On a radio talk show, the callers were about equally divided between whites who endorsed the conference because they always knew that "those people" were predis-

posed to crime, and blacks who opposed the conference because they objected to being so destructively stereotyped.

Such stereotyping already inflicts terrible damage on the lives of young black men. Consider a black novelist's foreboding about her son's approaching adolescence. Marita Golden writes that her son would soon

inhabit that narrow, corrupt crawl space in the minds of whites and some black people too, a space reserved for criminals, outcasts, misfits, and black men. Soon he would become a permanent suspect.

Much of the opposition to research on genetics and crime is informed by the conviction that such research will strengthen the association of young black men with "criminals" and "outcasts," and confirm their status as "permanent suspects," regardless of its findings. Several African-American scholars have told me that fear and distrust of genetic research runs so deep in their community that any discussion entertaining the possibility of a link between genetics and crime is seen as a threat and an affront. The most zealous opponents of human behavioral genetics have exploited these anxieties by recklessly linking all research or discussion of genetics and crime to racist ideology and repressive programs of social control. But while these opponents must share responsibility for the fear and offense felt by members of the black community, the strength and persistence of those reactions are social facts which researchers can hardly ignore.

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Diverting Resources, Diverting Attention

Critics also argue that claims of genetic and biological influence undermine social reform by making it seem either ineffective or inefficient — ineffective in working against the biological grain; inefficient in trying to achieve by large-scale social engineering what can be accomplished far more cheaply and reliably by medication or conditioning.

One fear is that research on genetic influence will divert resources from programs aimed at alleviating social and economic deprivation, including efforts to rehabilitate or train youths involved or at risk of involvement in crime. The direct effect will be negligible: even if human services and biomedical research competed for the same fixed resources, the amount

spent on all biomedical research is only a small fraction of the human services budget.

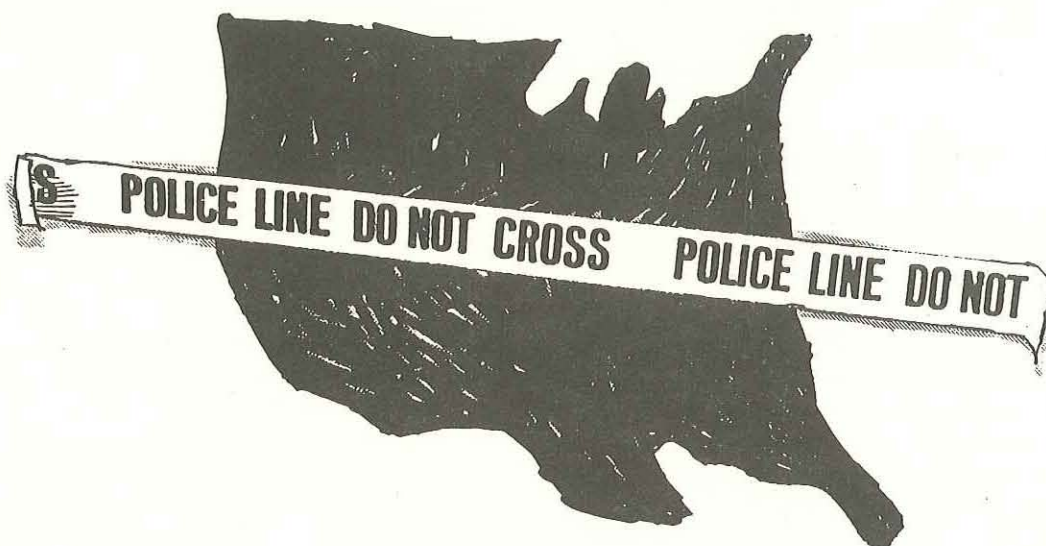
The indirect effect, however, may be far greater. The actual or reported findings of biomedical research may convince legislators that social reforms are inefficient, especially in comparison with biomedical programs offering "early detection" and "preventive intervention." Consider, for example, current programs of intensive supervision and social support for children believed to be at risk of criminal activity. Their supporters argue that these programs are much cheaper than the violent crime and incarceration they prevent. But such programs may seem extravagant in comparison with biomedical treatments, especially since the social and moral costs of such treatments are difficult to quantify.

A broader apprehension is that the discovery of genes or markers associated with criminal behavior will divert attention from social and economic conditions that promote crime. Indeed, some critics argue that what is objectionable about the research is not only its focus on genetic factors, but also its focus on *individual* behavior. These critics claim that merely by investigating the criminal predispositions of individuals, rather than the criminogenic character of the environment, the researchers mistakenly treat the former, not the latter, as the abnormality that needs to be explained. What demands explanation, the critics say, is the persistence of institutional racism and appalling social and economic conditions, not the fact that these conditions elicit criminal behavior in many of the young men subjected to them.

Researchers on genetics and crime might protest that they are not making the implicit judgment imputed to them by these critics — that their focus on individual behavior does not imply that the behavior is abnormal or pathological while the social environment is not. Researchers examine many causes of crime and their interactions; they recognize pathologies in individuals *and* their environments. Yet for critics, the social pathologies usually studied — perinatal trauma, infant malnutrition, drug use, parental neglect and abuse — are for the most part symptoms of a more comprehensive but less quantifiable injustice. To examine the symptoms piecemeal is to neglect the real explanation and the real problem.

Moral Abandonment

I have left for last the concern I find most troubling: that research on genetic predispositions may discourage any attempt to understand and empathize with those individuals *of all races* who are violent and predatory. As a society, we make intermittent efforts to understand and identify with those who engage in conduct that frightens and repels us. These efforts at understanding and empathy need not make us more



THE UNITED STATE OF ANXIETY...

Walt Handelsman

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lenient: we may still hold the offenders accountable for what they have done, and find their actions deserving of blame or reproach. But we resist the wholesale moral abandonment reflected, for example, in legislative efforts to consign repeat offenders to permanent, irrevocable imprisonment.

The effort at sympathetic identification may be blunted by the belief that those who commit violent crimes are genetically different from the rest of us. The suspicion that the most violent and predatory offenders are born with dispositions that we (presumably) lack renders them alien and opaque, inaccessible to sympathetic identification. I can feel that "there but for the grace of God go I" even if it would be literally impossible for me to have gone that way, but only if I have some foothold for identification. I will not be inclined even to attempt to identify with someone whose inborn temperament appears alien and threatening. Claims of genetic predisposition, then, may work to cut off empathy, and remove the check on our retaliatory and defensive impulses that empathy provides.

The research itself certainly does not prescribe the withdrawal of empathic concern. But it may lend support to social practices which have that effect, by treating "violence-prone" individuals as impaired or diseased. The genetic diagnosis of criminal predispositions could contribute to the medicalization of the crime problem, in a society that increasingly relies on

"soft" social control — the use of therapeutic methods to control antisocial behavior. The discovery of genes and markers associated with criminal behavior could make it easier to treat disruptive, antisocial, and criminal acts as symptoms of pathological conditions that should be treated and cured.

In much human genetic research, the concern is that prediction will outstrip treatment, leaving conditions that can be diagnosed but neither prevented nor cured. In this area, however, the prospect of treatment is disturbing in itself. While the forced medication of boisterous and disruptive children — the specter raised by critics such as Peter Breggin — seems unlikely in light of our constitutional scruples, it is not hard to imagine genetic testing and medical treatment being made a condition of probation or parole, and being offered to disruptive or delinquent employees as an alternative to termination. Other psychiatric medications, from anabuse to lithium, have been introduced in this way, setting a strong and ominously seductive precedent.

Moreover, pharmacological treatment, even if it is voluntarily undertaken, may threaten the agent's autonomy, and the perception of the agent *as* autonomous. Unlike rehabilitative and deterrent measures, psychotropic medications may bypass the agent's deliberative processes. An agent who abandons crime because of greater interest in lawful pursuits, greater empathy with prospective victims, or greater fear of punishment, acts autonomously in a way that a chemically

tranquilized agent does not. (This contrast may be overdrawn, but I will assume that it is valid for at least some psychotropic medications.) The medicalization of the crime problem may thus reinforce the treatment of violence-prone individuals as dangerous beasts rather than as morally responsible agents, to be drugged or confined rather than educated or reproached. Thus, rendering genetic predispositions more mutable in this way may actually worsen the prospects for sympathetic identification with the predisposed.

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It is possible, of course, that research on individual predispositions will reveal that genetic variations associated with aggressive or impulsive behavior in other settings do little to predict or explain inner-city crime; that the social pathology of the inner city "swamps" any genetic influences in eliciting criminal behavior. Such negative findings might dramatize the contribution of social conditions to crime and challenge popular expectations, if they were widely disseminated. But they would run up against an asymmetry of publicity: negative findings, like good news, get less media attention.

What, if Anything, Is to Be Done?

I can imagine some researchers becoming impatient with the litany of concerns I have described. None of these concerns directly challenge the scientific validity of their work, nor do they fully explain the intensity of the opposition that the research has faced. Undeniably, many of the attacks on human behavioral genetics are based on misunderstanding, oversimplification, and caricature; some on elusive accusations of a biological determinism denied by the researchers and belied by their assumptions, methodologies, and findings.

Yet the concerns I have examined do have implications for the way this research is conducted. For example, I think that researchers should be more cautious about the auspices under which their work is carried out and funded, and more vigilant in preventing the distortion of their findings. And I think that funding agencies should judge this research as basic rather than applied science.

In a time of government retrenchment, all scientists are under pressure to emphasize the practical value of their work. But those engaged in genetic research have

stronger reasons than most to resist this pressure. Researchers who are highly sensitive to the complex interaction of biological and social factors in the traits they study are often insensitive to the interplay of political interests in the application of their findings. It may be reckless to offer, or promise, more refined techniques for predicting and treating juvenile delinquency or adult criminality to educational and criminal justice institutions that have shown little capacity to treat their clients humanely or to respond effectively to the array of social conditions that provoke misconduct. I think it is unwise for researchers to be beholden to grantors who expect or demand findings of immediate practical value and are impatient with scholarly qualifications and caveats.

It is also unwise, and indeed irresponsible, for genetic researchers to ignore the appropriation of their findings by journalists and politicians. Researchers should respond publicly and vigorously to distorted presentations and applications of their work. Moreover, they need to maintain contact not only with its most eager consumers — criminal justice, correctional, and mental health agencies — but also with the social scientists, community activists, and political reformers who are the most wary of genetic research.

The concerns I have discussed have some complementary implications for the agencies that fund human behavioral genetics. While I do not think that research on genetics and crime should receive lower priority simply because it is controversial, I also do not think it should receive higher priority because it is seen to promise solutions to the problems of crime and delinquency. The support of this research by medical, public health, and substance abuse agencies may also be problematic, to the extent that it creates the expectation of pharmacological solutions to crime and violence.

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It is better to frame, and to fund, this research as basic genetic and neurobiological science, judging it more by the contribution it could make to those areas of inquiry than by its practical value in solving social problems. If, as the researchers insist, their approaches and techniques have significant scientific potential, their projects should flourish under this funding rubric. But if, as the critics insist, the research has little scientific merit, it should lose out in the competition.

Scientific Merit and Social Harms

These modest proposals, however, skirt a larger issue that has emerged in the course of this essay: should legislatures and public agencies take account of the social harms associated with human behavioral genetics in making funding decisions, or should they attempt to judge it strictly on its scientific merits? There are problems both in assessing proposed research strictly on its scientific merits and in subjecting it to a calculus of social costs and benefits. The former seems naive, ignoring the extent to which appraisals of scientific merit reflect socially and culturally conditioned judgments of plausibility and urgency, as well as economic interests. It also ignores the extent to which funding agencies have a legitimate interest in seeing public money spent in ways that do no public harm. But the latter standard threatens to open the floodgates to an array of concerns of varying weight and relevance, and to make the funding of scientific research an ideological battleground.

This ambivalence about the appropriate standard of review makes it difficult to give a principled defense of a line I wish to draw between funding research on individual predispositions and funding research on group differences. I do not think that research on genetic differences in criminal predisposition between racial groups should receive funding from any source (though I certainly would not prohibit private foundations from funding it). On scientific grounds alone, research on group differences seems unlikely to yield useful results, in light of the vagaries of racial classification, the sources of group differences recognized by population genetics, and the standard problems facing human behavioral genetics. But opposition to this research is widespread among people who, like myself, are not scientists, and our conviction is not based on the scientific merits alone. Many of us, I assume, would oppose funding for this research even if racial classifications were less suspect, and if the understanding of behavioral predispositions were more refined.

If, however, we base funding decisions on a social calculus of harms and benefits, might it not be applied adversely to the research on individual predispositions? After all, I have argued that the danger of reinforcing harmful stereotypes arises less from the remote prospect of actually finding racial differences in genetic predisposition to criminal behavior than from the public perception that the discovery of *any* genetic predisposition implicates the black community. And while we non-scientists may think that research on individual predispositions has greater scientific value than research on group differences, we are hardly in a position to make a confident judgment of scientific merit.

I believe, though, that there are two further differences between research on individual predispositions and group differences that must enter into a social calculus. The first concerns the source of the feared harm. The risk of harm from research on individual predispositions arises largely from misunderstanding and misappropriation — such research, after all, does not assume, and was not designed to show, that genetic predispositions are immutable, or that they are unevenly distributed among racial or ethnic groups. In contrast, research on group differences *does* aim to discover whether some racial or ethnic groups are more predisposed to crime than others — findings that, however unlikely, can only reinforce prejudice and stereotyping. Even if there were genetic differences between races, there is no reason that such differences should affect our treatment of individuals, but every reason to fear that they would.

This leads to the second distinction I wish to press — the moral legitimacy of the questions being addressed. While the potential abuses of individual-predisposition research in our present society are legion, it is possible to imagine a society fairer and more humane than our own where findings of individual differences in behavioral predispositions could be used in an appropriate fashion. In contrast, I cannot imagine any reason that a fair and humane society would be interested in genetic differences between racial or ethnic groups. Even if aggregate differences existed, I do not see what legitimate purpose their discovery could serve. And I do not see why we should pay for research that could serve no legitimate purpose, even in a society far better than our own.

— David Wasserman

A previous version of this essay was presented as one of a series of talks on "Censorship and Silencing: Practices of Cultural Regulation," California Institute of Technology, January 26, 1995. Sources: Albert J. Reiss, Jr., and Jeffrey Roth, eds., *Understanding and Preventing Violence* (National Academy Press, 1993); Adrian Raine, *The Psychopathology of Crime: Criminal Behavior as a Clinical Disorder* (Academic Press, 1993); R. C. Lewontin, *Biology as Ideology: The Doctrine of DNA* (Harper Perennial, 1992); Marita Golden, *Saving Our Sons: Raising Black Children in a Turbulent World*, quoted in *Washington Post Book World* (January 15, 1994); Peter Breggin, remarks from a panel discussion entitled "The Bush Administration's Violence Initiative: Is It Racist?", Congressional Black Caucus Legislative Weekend (September 25, 1992).

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