

# **IQ, DNA and politics: Denying science and its ethical consequences**

Submitted in Partial Fulfillment of the Requirements  
For Completion of STS 5444: Issues in Bioethics

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March 8th, 2004

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When, as head of the Human Genome Project, James D. Watson was asked by a colleague about the importance of establishing an ethics committee attached to the mega task that mapping the human genome was, he told him “that unless ethics was part of the genome program, ‘Congress will chop your head off’ (Jonsen, p. 190).

This anecdote exemplifies one of the current trends in certain research fields: the excessive political influence not only on what or how to do research, but also what should be the results you have obtained in order to continue receiving funds or public support. The most evident case in this trend, where political considerations have biased any rational discussion, has been the controversy over the book “The Bell Curve”, about the measure of the Intelligence Coefficient (IQ) and the possibility that it is a result of genetic heredity. The following paper makes a brief description of the origins of the problem, the political influence on the research on IQ and genetics and finally the policy and ethical challenges that this influence has on the future of this field of research.

James D. Watson, Nobel prize in 1962 for the discovery of the double helix with Francis Crick, took the decision to create the Ethical, Legal, Social Implications Program (ELSI) for the Genome Project not only because he was worried about the ethical implications of the DNA project, but because he had already had bitter experiences about the collective hysteria from unfounded fears regarding DNA revelations.

As a member of the Harvard Biology Faculty between 1975 and 1977, I watched in despair when “Science for the People” successfully assisted the public members of the Cambridge, Massachusetts, City Council to block recombinant DNA research at our Biological Laboratories. Later, I asked

Salvador Luria, who was then at Massachusetts Institute of Technology and who knew that his left-wing friends were putting forth scientifically dishonest statements, why he never publicly criticized them. *His reply was that politics was more important than science* [italics added] (Watson, 2001, p. 200)

Society, specifically American society, has become extremely sensitive about the subject of hereditary traits and the special characteristics an individual possesses due to his genetic configuration. In a society where, according to Herrnstein & Murray (1994), the obsession to assume a capital importance to nurture and almost none to nature is in place, the political agenda has been defined to assume that “all humans are equal” and it is the environment (and the policies that shape it) who should be changed in order to give more opportunities to all citizens. That is why the assumption that IQ is greatly defined by genes is not only politically incorrect but also it associate with racism and Nazism.

### **The Bell Curve**

This book, written by Harvard professor Richard J. Herrnstein and Charles Murray, basically states that low IQ has an elevated correlation with several of the social diseases that affect today’s America: delinquency, births out of wedlock, school drop outs, and so on. Most of these findings, however, were overshadowed by one the conclusions: IQ and race are highly correlated, with African Americans having the lowest mean IQ when compared to other ethnic groups. This conclusion, and the social connotations that it involves, resulted in an explosive response from academia, especially from social scientists identified with leftist political opinions. Some authors, like Stephen Jay Gould (1995), would sustain that IQ and its definition is elusive due to the complexity of human

intelligence. Herrnstein and Murray's book's foundation is the existence of *g*, the cognitive ability that defines what we called "intelligence". Other authors, like Hudson (1995), are openly defining as "scientific racism" the suggestion that some races are intellectually superior to others. He states that IQ measurement is culturally and socially biased, consequently, to analyze society's complex problems like crime and poverty with a single variable (intelligence plus race) is a hidden way to justify a new form of racism. Duster (1995), on the other hand, analyzes not the data presented by Herrnstein and Murray's book but their personal, academic and political background (neither of them are molecular geneticists), implying that a political agenda is behind their thesis:

Relatively few of these claims come from molecular geneticists, who are typically wary of making claims about the *genetics* of these forms of human behavior, whether specialists with humans, animals, or plants. How can the relative modesty of, scientific tentativeness, even quietude of these laboratory geneticists on these subjects can be explained, while researchers in these other traditions of *genetics* tend to be the most passionate advocates for the biological or genetic component? (p.5)

The debate over race and intelligence, however, is not new to the US. In 1969, Arthur Jensen published in the Harvard Educational Review an article that argued the possibility of a connection between intelligence and genetics. However, as Watson (2004) and Duster (1995) remark, the professional consequences to Jensen were harsh:

In 1969 when Jensen published his article "*IQ, Race, and Intelligence*" in the Harvard Educational Review, it was the sixties. In the sixties, there was already an audience which would look at Jensen's ideas and conclusions with skepticism. In 1969, when Jensen was on the University of California at Berkeley campus, there was mobilization against him even teaching (Duster, p.7).

Most of the scientific community took note of the uproar provoked and understood the need to avoid the public outcry of theories opposing to the common political atmosphere. Thus, most of the scientific work related to these subjects was restricted to specialized scientific journals (Herrnstein and Murray, p. 10). Those who committed the mistake of writing or talking about these themes were subjected to public rebuttal and usually to be marked as people with “right-wing political views and racist social views” (ibid., p. 11).

### **The Policy Consequences**

One of the early consequences of this wave against IQ measurement and the belief that it is culturally and socially biased was the Supreme Court resolution on the case Griggs vs. Duke Power. In this case, the Supreme Court prohibited the use of IQ tests and academic requirements as requirements to apply for a job without probing the functional need of such tests or requirements. The objective was the removal of artificial, arbitrary, and unnecessary barriers to employment when the barriers operate invidiously to discriminate on the basis of racial or other impermissible classification.

The consequences of this resolution were, as Herrnstein and Murray sustain, far beyond the intended results: especially in public institutions, tests were modified or even totally eliminated, provoking the fast degradation of the quality of the workers and organizational outcomes (p. 501-502).

Due to the advance in genetics and DNA analysis, the same logic was applied to avoid any possibility of genetic discrimination. In 1999, the Senate

passed a bill that prohibits discrimination on the basis of genetic information with respect to health insurance. Just recently the floor of the Senate discussed a bill that would prohibit employers, health insurers and other groups from discriminating on the basis of genetic information. The advances in genetic testing have reignited the concerns that individuals could find themselves excluded by employers or health organizations because of the information DNA could provide to them. This new act, called the “Genetic Information Nondiscrimination Act of 2005”, which would amend a series of existing health and employment acts, would outlaw such discrimination, extending medical privacy and confidentiality rules to cover genetic information. The bill passed on February 17<sup>th</sup> by 98-0 in the Senate.

However, one of the most controversial theories exposed by Herrnstein and Murray is the need to change policy in order to maximize the output of some social programs. One of the examples provided by the book is Head Start, the educational program for poor children, which, according to the authors, has not shown a difference in the cognitive level or school success of the target populations. The reason for this failure is supposedly the impossibility to improve the IQ of the children who already are located on the low quartiles of cognitive ability because of their inheritance. However, the authors do not expressed (as many critics assumed incorrectly) support for social Darwinism. In reality, they argue the need to adapt government policies to accept the fact that this growing population requires a different approach to assure its welfare.

Nevertheless, current policies are unable to modify its focus due to the important political consequences that this change would imply.

### **Genetics and intelligence: the most recent findings**

Despite the political trend, science is progressively finding that genetics and intelligence are closely related. Some scientists have stated that nature could explain up to 80% of IQ results (Herrnstein and Murray, 1994; Watson 2001, 2004). This statement was one of the most vehemently rejected by academia and especially by the public opinion. This finding, they fear, would destroy one of the foundations of the US: the country where you can be whoever you want to be. If nature has such an important role in IQ results, individuals are seriously limited by their genetic inheritance and their freedom is constrained.

Regretfully, most of the recent discoveries corroborate what Jensen and his subsequent successors stated: the significant role of genetics is impossible to deny. In one of the latest articles that support this theory, UCLA neurology professors Arthur W. Toga and Paul M. Thomas, in their article “Genetics of Brain Structure and Intelligence” they scientifically proved the correlation between intelligence, brain activity and genetics. In previous works they have found, through the mapping of the human brain, correlation between IQ (the famous Spearman’s  $g$ ), brain-size and frontal metabolic activity (Cannon, Toga and Thomas, 2002 p.9). They even state that IQ can be used as a confounding variable for morphometric studies of brain diseases. Additionally, they have found that “Cognitive performance appears to be linked with brain structure in the very

regions where structure is under greatest genetic control, suggesting that genetic variation contribute profoundly to brain function in the frontal cortex” (p. 9).

However, it is in their most recent article where they frontally sustain that brain morphology is inherited and that genetics has a decisive and capital importance to define brain shape and intelligence (Toga and Thomas, 2005). Sustaining that nature contributes approximately contributes 70% of the IQ, they even propose some genes that can be related to brain functions and intelligence: “Nonetheless, adoption and family studies using sophisticated genetic model-fitting have shown g to be highly heritable across many studies, even more so than specific cognitive abilities” (p. 14)

The combination of genetics and imaging technology has allowed these scientists to prove a highly debated topic. However, the consequences of this and future studies that will prove the relation between genetics and IQ are not easy to confront. As the authors state “Nature is not democratic” (ibid., p. 16) but they also acknowledge the fact that “our interpretation of intelligence, the brain, and heritability has succumbed to a variety of political and social pressures” (ibid., p.17). Nevertheless, the Pandora’s box is, by this time and from now on, open...

### **The ethical dilemma and policy debate**

Togas and Thomas (2005) finish their article in a very circumspect way:

How the public chooses to use scientific findings in the establishment of policy, particularly in regards to education, law, however, is not the stuff of a chapter in Annual Review of Neuroscience. As our understanding of the complex relationship between genes, brain, and intelligence improves, what becomes of this knowledge remains to be seen

However, the fight between the use of new biotechnology to select the best and fittest to certain activities is not over. Interest groups (like health industry lobbyists or intellectually demanding industries like high-tech) will no doubt resist barriers that restrict their ability to improve their efficiency and financial performance.

Worse, there are certain countries that are quick and flexible to adopt what have been called “eugenic” policies. Singapore, for example, under the rule of Lee Kwan Yew, has adopted policies giving incentives to college educated women to have children and procreate with other college educated men (Barr, 2000). Therefore, we can assume that other nations will also apply this knowledge in order to gain a national advantage to attract foreign investment.

What is, then, the future of the United States within this context of progressive acknowledgement of differences between human beings?

Herrnstein and Murray, in their book, present a dark and somber scenario: a progressive “brazilenization” of the country as Robert Reich described in his book “The Future of Success” (2000): in other words, the cognitive elite will gradually segregate themselves from the general population, creating entire neighborhoods that (as in the case of Brazil) are virtual mini-fortresses with their own malls, schools and even highways! These geographical clusters will transform American society and will provide incentives for more social conflicts and (as Herrnstein and Murray predicted) more resentment between races, due to policies like “affirmative action” that will be identified as “unfair” advantages for populations that have in common a low mean IQ level.

In a country with more limited resources, growing population and more social burdens (the arrival of baby boomers to the age of retirement, more immigration, among others), a total rejection of “genetic screening” is not only costly but can be fatal in the economic battle between nations. To consider that “eugenic ideology was clearly repudiated” (Jonsen, p. 182) is a rigid posture that cannot be sustained over time, not because of moral reasoning but because of pure economic and societal reasons. As Watson (2003) explains, the total rejection of knowledge about our own genetic inheritance and, therefore, our nature, is even worse than ignorance due to technological barriers. If government continues to design policies on incorrect information and assumptions, it will become unsustainable over time, especially because sooner or later society (in the form of market/political pressures or merely competition from foreign countries) will provide a better model that will, ultimately, be adopted. The decision is not to adopt the new paradigm or not, but “when” and if this “when” won’t be too late...

It would be naive to expect a single finding, or series of findings, to resolve doubts about the scientific value of human behavioral genetics, or to expect a single application of the research, or series of applications, to resolve doubts about its social utility. At the same time it would be dogmatic to insist that no conceivable findings or applications could vindicate the researchers' confidence and optimism, or their critics' doubts and pessimism. (Wasserman, p.15)

Genetics is not the only answer to social behavior or cognitive abilities. The environment plays an important (even critical) role in the development of children

and the development of their abilities. As Herrnstein and Murray or Watson sustain, a superior seed will have mediocre or almost no results in the Mojave desert. The fact that, *ceteris paribus*, some seeds are better than others does not mean that we should not provide the best fields where anybody can progress and maximize their potential. However, increasing scientific proof shows us the differences between individuals and how wide some of these differences are. The fact that “nature is not democratic” requires a fundamental change in our ethical framework and how we decide what is necessary to survive and thrive. Dogmatic positions like “respect the autonomy of individuals, and repudiate utilitarian and eugenic perspectives” (Jonsen, p.190) will become a burden for societies where genetic tools will become more and more available. Gould, however, is right when he says that “Biology is not the enemy of human flexibility, but the source and potentiator” (p. 9). Biology is now giving us the tools for a better future, where diseases and social problems can be solved without the traumatic effects that we are bearing today. The possibility to use these tools depends on us and our ability to avoid a huxleyian “brave new world” at the same time that we maximize the potential that each human being can provide to society.

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