

# Against the Genetic Grain

JONATHAN MARKS

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## **MAKING GENES, MAKING WAVES: A Social Activist in Science.**

By Jon Beckwith. Harvard. 242 pp. \$27.95.

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I first heard of Jon Beckwith in the mid-1970s, in a question framed by my genetics professor: Why would anyone willfully disrupt a research program designed to collect useful information on human genetics? The implied answer, of course, was that no rational person would; maybe some kind of a Luddite or a commie.

Jon Beckwith holds a professorship at Harvard Medical School, and did then. His area of specialization is arcane—how genes in bacteria work—and he has a list of honors to vouch for his authority in the area. But his fame in genetics has arisen more from his role as a leader in the internal critique of genetic research, highlighting its compatibility with certain invidious political agendas, and thereby occasionally informed more by cultural ideologies than by rigorous data.

My own field, biological anthropology, cut its eyeteeth providing scientific validity for the oppression of non-Nordics. Steeped in such a field, it is hard not to see the imbricate structure of science, culture and politics. But bacterial genetics is another story.

*Making Genes, Making Waves* consists of a generally chronological series of vignettes detailing Beckwith's role in raising the consciousness of the genetics community and the public ("making waves") interspersed with brief descriptions of his laboratory research problems at various times ("making genes"). The prose is crisp, the episodes engaging and, as a heuristic of a successful modern American scientist with a social conscience, the book is probably without peer.

Beckwith traces his interests in joining the scientific and the political to his early professional acquaintances with European

scientists, especially the French bacterial geneticists François Jacob and Jacques Monod. Beckwith's own initial activism came with the discovery that Harvard was planning an expansion and acting like a slumlord in the 1960s, buying up property and driving out tenants. In the heyday of the civil rights and anti-Vietnam War movements, he expanded his idealistic goals to get Harvard Medical School to recruit a larger proportion of minority students. And yet by 1969, he was still, in good American scientific fashion, managing to keep his social and his scientific interests entirely segregated from each other. He quotes a prominent developmental biologist who denies the capability of being "both a first-rate scientist and a social activist"—although there were obvious role models, such as Franz Boas, Lancelot Hogben, Linus Pauling and J.B.S. Haldane.

All this changed with Beckwith's isolation in 1969 of the gene in *E. coli* that codes for the enzyme  $\beta$ -galactosidase—which may not sound like much today, but actually represented the first purification of a single genetic instruction. Coming shortly after psychologist Arthur Jensen's notorious article on the ostensibly genetic limitations to intelligence in blacks, Beckwith took the opportunity as a real geneticist to warn the public about the potential risks of his own area of genetic research.

Naturally his colleagues saw this as biting the hand that fed him—and them, too—and consequently Beckwith's press conference got a very cool reception from them. And he did not exactly ingratiate himself with those colleagues the following year by turning over his cash award from the American Society of Microbiology to the Black Panthers, either.

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Beckwith's 1969 press conference was incomprehensible to his mainstream colleagues in genetics, where self-interested propagandizing has long been the norm and is indeed often equated with "explaining." We might take as the epitome of that mainstream James Watson—the Nobel laureate for elucidating the structure of DNA, and the godfather of the Human Genome Project. Watson's recent collection of essays, *A Passion for DNA*, relates the same episode from a different perspective:

Seeming more ashamed than pleased with their neat science, James Shapiro and Jonathan Beckwith of Harvard Medical School held with much fanfare a press conference to announce that their new way to isolate specific genes was on the pathway to eugenically motivated genetic engineering of human beings. Knowing of [their] left-wing views... I, like most of my colleagues in the Boston region, saw their self-denunciations as manifestations of unrepentant leftist fears that further genetic research would render inviable the Communist dogma that assigned all social inequalities to capitalistic selfishness.

Watson was also stunned only a few years ago at the reaction to his lecture at Berkeley articulating a belief in a biochemical relationship between libido and skin color.

Beckwith's next crusade, and possibly his most famous, began in 1973, when a screening program for boys with an extra Y chromosome was set up at Massachusetts General Hospital. The extra Y chromosome had been put forward as a cause of hyperaggression, in accordance with the cultural logic that men are more aggressive than women, and men have a Y chromosome, therefore XYYs should be extra-aggressive. (By that syllogism, it may be noted, XYY men should also belch especially loudly and frequently, be superfast sprinters and absolutely, positively, never ask for directions.)

The investigators wanted to screen newborns for XYY, to determine the frequency of the syndrome, and follow the development of the affected boys. Unfortunately, the project held out no benefit to the families, and some considerable risk. After all, if the parents were not told of their son's condition, there was absolutely no benefit to them; and if they were told, their cultural knowledge would lead them to expect the child to be overly aggressive, which could easily become a self-fulfilling prophecy. The screening project was for the benefit of the scientists, not the patients, and Beckwith, along with Jonathan King of MIT, set out to interrogate it, first through channels

at Harvard and then with an essay in the British journal *New Scientist*.

Once again, his behavior was incomprehensible in a scientific culture that valued keeping busy and getting grants above helping people. This time it nearly cost him his job (although Beckwith is frustratingly spare with the details). Beckwith does tell us that the association between violence and the Y chromosome was helped out by a false story in the *New York Times* of a mass murderer who tested positive for XYY, and by the notable failure of the scientist who performed the test to correct the record. Although rebuffed by the Harvard Medical School faculty when he put the research's ethical problems to them, Beckwith notes that the research was indeed halted within a year.

Having by now read up on the eugenics movement of the 1920s (and reading the history of the field was decidedly against the grain of his formal training in genetics), Beckwith became active in the Boston chapter of Science for the People in the early 1970s, just in time to challenge the first wave of sociobiology, spearheaded by the one-two punch of E.O. Wilson's *Sociobiology: The New Synthesis* (1975) and Richard Dawkins's *The Selfish Gene* (1976).

The result was a letter published in *The New York Review of Books*, in response to an uncritical review of Wilson's tome. While the letter made all the right historical connections, its authors actually knew too much for their own good. Sociobiologists indignantly responded by denying the links between genetic determinism, eugenics, racism and National Socialism. (How dare you link us to the Nazis!) Wilson even got a pitcher of water dumped on his head during a scientific conference in 1978, leaving the community shocked (shocked!) at the behavior of the radicals who mixed science and politics (and didn't try to conceal it).

Beckwith's thumbnail sketch of sociobiology notes the emergence of an internal critique of the field's crude sexism, but is perhaps a bit too charitable in trying to segregate "pop sociobiology" from its unlabeled, but presumably more scholarly, alternative. There was never any real coherence to what was ostensibly sociobiology's contribution to understanding human behavior. Even Dawkins's *The Selfish Gene* infamously informed us on its dust jacket that we were just "gigantic lumbering robots" built by DNA to carry out its will; and yet ultimately sketched out a theory in which human behavior was governed by the replication of "memes" (that is, ideas and values, or cultural units), not genes. In essence he left it up to readers to adopt the

deterministic metaphor they preferred.

Beckwith suggests that sociobiology was transmuted in the 1990s into "evolutionary psychology" but misses the bifurcation between that field and "behavioral ecology." The latter studies the adaptive aspects of behavior, and is far less radical and far more scholarly. Evolutionary psychology, for all I can see, is neither evolutionary nor psychology but a grab bag of genetic determinism, biologized philosophy and old-fashioned racism and sexism—to a large extent the very embodiment of what Science for the People predicted and feared. Yet criticisms of it were successfully parried at the time as being personal or ideological, although they actually stand up remarkably well in substance.

Between the mid-1970s and the 1990s, Beckwith came to be perceived as less threatening, which provides the major transformation of this presentation of his life, a journey from troublemaker par excellence to "not scary anymore." Beckwith himself doesn't really understand the transformation, but marks it by his appointment to the advisory board of the Ethical, Legal, and Social Implications (ELSI) arm of the Human Genome Project in 1989. And yet the intervening years saw the publication of Daniel Kevles's *In the Name of Eugenics* (1985), which succeeded in placing before both the scientific community and the general readership the very sordid history of genetics, the knowledge of which had motivated Beckwith early on, and of which other geneticists were sadly ignorant. Perhaps they had simply caught up to him.

Or perhaps not. ELSI was the brainchild of James Watson, clipping off the shy end of 5 percent of the Human Genome Project's budget for the study of how the mountains of information being generated by the project might actually be used thoughtfully and beneficially. But Beckwith repeats a quote from Watson first published by bioethicist Lori Andrews: "I wanted a group that would talk and talk and never get anything done... and if they did do something, I wanted them to get it wrong. I wanted as its head Shirley Temple Black."

Enough to make you a bit cynical?

If so, Beckwith's memoir doesn't show it. It reads like the work of a man who feels he has made enough enemies and now wants just to make friends. And from this warmth emanates its limitation as biography. Clearly, Beckwith has lived an academic life of considerable privilege. But we don't learn of illness (all right, some migraines once), or disappointment (a short period with grant trouble), or real sadness, or even struggle. He seems almost to have to work at not having the touch of Midas.

There is consequently not much of a dramatic arc to Beckwith's life, at least as presented here. Perhaps it is this lack of drama that accounts for the absence of confrontation, or indignation, or any of the explosive feelings that must have existed during the episodes he recounts. We must await, perhaps, a graduate student in the history of science to root them out in archives and interviews.

But for scientific role models, they don't come much better. This engaged citizen-

scholar has fought the good fight, at some considerable professional risk, but he has survived and flourished, his ideals unscathed; and he is a reason to take some honest pride in the academy. A scientist who follows his convictions and still achieves world-class status, who thinks carefully about his work and about social issues, and who actually takes seriously the Baconian promise of better living through science, putting his career on the line and surviving to tell the tale—this is a rare bird, indeed. ■