

SCIENCE & TECHNOLOGY

DEFENDERS OF THE TRUTH:

The Battle for Science in the Sociobiology Debate and Beyond.

By Ullica Segerstråle. Oxford Univ. Press. 493 pp. \$30

In his legendary *Sociobiology* (1975), Harvard University zoologist Edward O. Wilson set forth a comprehensive, theory-aware, phylogenetically ordered survey of social organization, from invertebrates to mammals. His final chapter, “Man: From Sociobiology to Sociology”—essentially an addendum, included for formal completeness—tentatively applied some of his conclusions to aspects of human behavior, including altruism, sex, the division of labor, tribalism, religion, and war.

Those concluding observations soon provoked a deluge. Critics charged Wilson and sociobiology with racism, sexism, and clandestine political aims. The first and bitterest attacks came, with great fanfare, from a local leftist band of (mainly) scientists, including some of Wilson’s Harvard colleagues. Calling themselves the Sociobiology Study Group, they had been preparing, without warning to Wilson, what amounted to a show trial. The brawl—*debate* is too refined a term—erupted and spread rapidly to the delighted media.

Segerstråle, a sociologist at the Illinois Institute of Technology in Chicago, depicts the fracas in absorbing detail and with exemplary fairness. She sees in it the roots of the current wars about the validity of scientific inquiry in general, and of the passionate disputes over evolutionary psychology (a term less inflammatory than *sociobiology*) in particular. In analyzing the motives of key participants, especially Wilson and his most articulate antagonist, Richard Lewontin, she shows how moral and political presuppositions can color the scientific convictions of even very good scientists. She makes this point honorably, without either what philosopher Susan Haack calls the “old deferentialism” toward science or, at the opposite extreme, the nihilistic reduction of science to a mere congeries of interests.

Segerstråle wishes to de-emphasize the

political sloganeering of Wilson’s detractors, their ideological posturing, their deplorable and false charges, and their Marxist logic chopping, all of which she documents. Instead, she focuses on what she sees as the dispute’s underlying cause: the collision of opposing epistemological-scientific worldviews. For Wilson (as for Thomas Jefferson), good inquiry follows truth wherever it may lead. His optimistic, Enlightenment-liberal social views encouraged him, originally in all innocence, to promote the uninhibited biological study of human behavior. Wilson’s detractors, though, saw science as necessarily embedded in existing sociopolitical arrangements. They reflexively opposed any biological analysis of behavior that might justify what they deemed an oppressive status quo.

Segerstråle maintains that, by illuminating these divergent ideas of what constitutes valid science, the sociobiology battle served a public purpose. Perhaps, but the silver lining is thinner than she thinks. However interesting to philosophers and social scientists, the fight did nothing to enhance public understanding of science. Quite the opposite. And, a quarter-century after *Sociobiology*, the dispute continues—less stogy, more epistemological (there is even a specialty journal called *Social Epistemology*), but still belligerent. It has consequences every day, indirectly in the legislative halls, directly in corridors of the academy far from the science departments. Segerstråle has given us an authoritative account of how it all began.

—PAUL R. GROSS

THE CENTURY OF THE GENE.

By Evelyn Fox Keller. Harvard Univ. Press. 186 pp. \$22.95

I considered turning in a book review that was only 85 percent complete. After all, that’s essentially what Francis Collins and J. Craig Venter did earlier this year when they declared that they had decoded the human genome. The announcement was a grand event, widely publicized and celebrated, even though the “book of life” is rife with typos and missing 15 percent of its text. Great sections of

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it have geneticists scratching their heads in confusion. It's in such poor shape that scientists are wagering about how many genes the genome contains—and the bets run from a few tens of thousands to a few hundred thousand. And when scientists *do* succeed in decoding the genome, producing a computer disk full of As, Gs, Cs, and Ts, they will still have to figure out precisely what those chemicals mean.

Genetics has gotten much more complicated in the century and a half since Gregor Mendel figured out heritability in his field of pea plants. Our genetic code contains the instructions for creating proteins, but proteins control the way the cell follows those instructions. In this vast, complicated web of cause and effect, genes control proteins that control genes, and proteins control genes that control proteins.

Keller, a professor of science, technology, and society at the Massachusetts Institute of Technology, notes that the very concept of the gene has been muddied. In the early days of Mendelian genetics, the gene was thought of

as a biological atom—an uncuttable, indivisible particle responsible for a trait in an organism. Since then, scientists have learned that a gene is not indivisible and not necessarily responsible for a trait. These and other complications make it difficult for a biologist to answer even the simple question, “What is a gene?” Indeed, the crux of Keller’s book is that the word *gene* needs to be replaced because its imprecise nature may be impeding biological progress.

She presents this argument rather oddly. When summarizing the history of genetics, she pays more attention to scientists’ writings than to their laboratory work. Many of her allusions to experiments are so quick as to baffle the uninitiated. It makes sense to dwell on a corpus of literature when studying Aristotle or Kant or Hume, but scientists speak most eloquently through their experiments. That is the difference between philosophy and science, and it should be the difference between a history of philosophy and a history of science.

—CHARLES SEIFE

HISTORY

COAST TO COAST

BY AUTOMOBILE:

The Pioneering Trips, 1899–1908.

By Curt McConnell. Stanford Univ. Press. 368 pp. \$45

At 11:02 a.m. on Thursday, July 13, 1899, John and Louise Davis left New York’s Herald Square in their two-cylinder National Duryea “touring cart,” headed, they told reporters, “to ‘Frisco or bust!’” Bust it was. A one-armed bicyclist who left New York 10 days after the couple passed them in Syracuse. By the time the Davises arrived in Cleveland, their cart had been repaired at least 20 times. When they reached Chicago in October, they abandoned their transcontinental journey. An

automobile, Louise Davis concluded, “is a treacherous animal for a long trip.” Automobile touring demanded “plenty of pluck, patience, and profanity,” her husband said, “and I think that I am becoming proficient.”

Four years later, Dr. Horatio Nelson Jackson tamed the treacherous animal. After sending his wife ahead on a train, he



Stuck in the mud in Woodside, Utah