



The Hollowness of Radical Bioethics

John Sexton

One of the most famous specimens in eighteenth-century medical history was Charles Byrne, the Irish Giant. He was 7 feet 7 inches tall. In 1782, then twenty-one years old, Byrne moved to London, attracting a public that came to view him in his room for two shillings and six pennies a person. The following year, when, like most giants, he died young, his body was acquired by the surgeon and anatomist John Hunter for, it was said, £500—roughly the purchasing power of £50,000 or \$80,000 today. It was also said that Hunter, who was a mentor and friend to Edward Jenner, the inventor of the smallpox vaccine, and may have been the model for Robert Louis Stevenson's Dr. Jekyll, bribed the undertaker and had the coffin filled with rocks to disguise the theft of the corpse. Byrne, afraid that after his death his body would be dissected, had expressed the wish to be

buried at sea; today, his skeleton is on display in the Hunterian Museum in London, admission free of charge.

The story of Charles Byrne's body is noted in the new book *Genes, Cells and Brains*, by the British husband-and-wife duo Steven and Hilary Rose. They do not tell the rest of the story: Byrne's body has been

of medical interest more recently. In 1909, the American Harvey Cushing, a founder of modern neurosurgery, removed the top of Byrne's skull

and decided he had suffered from a tumor. In 2011, a paper published in *The New England Journal of Medicine* announced that the cause of Byrne's great height was a genetic mutation, which the authors determined after extracting DNA from the teeth of Byrne—or, as they call him in the paper, "the patient." Though the Roses do not note these events, they do say, in the context of a brief discussion on the ethics of property in

*Genes, Cells and Brains:
The Promethean Promises
of the New Biology*
By Hilary Rose and Steven Rose
Verso ~ 2013 ~ 336 pp.
\$26.95 (cloth)

the body, that the current display of Byrne's skeleton is "technically legal but still morally deplorable."

"Deplorable" is a solid antique of a word; it sits uneasily in a book full of other words that reflect very different sensibilities. The Roses, billed as "feminist sociologist Hilary Rose and neuroscientist Steven Rose," each hold emeritus professorships at British universities in their respective fields. By their own account, they were New Leftists in the 1960s and 1970s—which means that they are now old leftists—and they speak the strange patois of those who have spent their lives fighting under the patchwork banner of the modern left. As the reader is informed in the introduction, the Roses "live together in a heterosexual relationship"—and yet they are not, they rush to reassure us, therefore reactionaries. On the contrary, despite the gains made by the left, the authors say they are well aware that (quoting Marx), the "tradition of the dead generations weighs like a nightmare on the brain of the living."

The Roses are apt to use the terms "capitalism" and "neoliberalism" carelessly. They upbraid others for using "Christianity-soaked metaphors," even as they use phrases like "Mammon has been welcomed into the laboratory." They reject "essentialism," by which they mean the view that there is a fixed human nature, and they evade the moral problem of abortion under the flim-

sy cover of "reproductive freedom." Nevertheless, in their strident radicalism, the Roses see the problems of science and politics more clearly than many moderates from either the left or the right, and their book therefore offers much of value to readers of any political persuasion.

G*enes, Cells and Brains* is, for the moment at which it appears, an important book. Its title is obviously meant to invoke Jared Diamond's 1997 bestseller *Guns, Germs, and Steel*. Diamond made the argument that human history has been decisively shaped by nature (germs) and technology (guns and steel). The Roses, however, want to challenge the now-common claims that human history has been determined by the nature of genes, cells, and brains, and that the future will be determined by our growing knowledge of this nature and our consequent power to manipulate it through technology.

Steven Rose has already made something of a career as a buster of scientific or scientific hype. In 1984, he was a coauthor, along with Richard Lewontin and Leon Kamin, of the book *Not in Our Genes*, which attacked the projects of sociobiology and genetic reductionism. The authors' motives in that book were as much political as scientific; they accepted that the theory of evolution by natural selection is true as far as it goes, but denied that it can be simply applied to explain all animal

and human behavior, especially in the social and political realm. They insisted that the attempt to apply Darwin's theory across the board leads to conclusions not just false but pernicious.

In their new book, the Roses are particularly concerned with abolishing "essentialist" claims about a fixed human nature, even a human nature fixed somewhat temporarily by Darwinian evolution. They take themselves to be following in the footsteps of a long line of left-wing philosophers:

More than half a century ago Jean-Paul Sartre rejected such [essentialist] claims: "there is no human nature...man is nothing else but what he makes of himself." In *The Second Sex*, Simone De Beauvoir insists that "one is not born, but rather becomes, a woman." Hannah Arendt spoke of the "human condition," though today many would prefer to speak of human conditions in the plural. In the *Eighteenth Brumaire*, Marx wrote: "Men make their own history but they do not make it as they please; they do not make it under self-selected circumstances, but under circumstances existing already." This needs extending, however; those "circumstances existing already," by which both women's and men's actions are constrained, include both the human history and the current social conditions to which Marx refers, but also, as his contem-

porary Darwin insisted, the history of human biology itself. Both these giants of nineteenth-century social and biological theory (setting aside the anomaly of Marx's commitment to stages of historical progress and some of Darwin's progressivist hopes) were radical indeterminists. We share that indeterminacy; humans can make their own history, but they do so in circumstances which include both their embodied social existence and their socially embedded biological existence.

This is a thoroughly confused paragraph. First, the quotations from Sartre, Beauvoir, and Arendt really have nothing to do with the claims of Marx or Darwin, nor do they have much to do with each other. Sartre was perhaps making a claim for radical indeterminacy, but Beauvoir, whatever she was trying to say, was not. Arendt's notion of a universal "human condition" rules out radical indeterminacy (and the rather pathetic attempt to evade this implication by adding an "s" to "condition" is of no avail, as the rub lies in the "human"). Marx's belief in stages of historical progress was not an "anomaly" but basic to his thought. Darwin was simply not a radical indeterminist.

The Roses' description of "radical indeterminacy," which is central to their claims, is obscure to begin with: "humans can make their own history, but they do so in circumstances

which include both their embodied social existence and their socially embedded biological existence.” What could this possibly mean? Like Marx’s original utterance, it is deeply opaque. And yet it is just the kind of mealy-mouthed statement that many now working in the humanities would come up with if challenged to reconcile, on the one hand, the materialist-determinist worldview believed to follow from modern science, with, on the other, their commitment to the study of “culture,” understood as an independent realm of boundlessly free and creative human activity. To be fair, the Roses understand what many do not: that the materialist-reductionist worldview is a premise rather than a conclusion of scientific research—though they never articulate a different view of nature in which human freedom could be thoroughly natural instead of a magical add-on.

As a neurobiologist, Steven Rose is well suited to the task of doing battle with the apostles of scientism. His previous book, *The Future of the Brain* (2005), was an attack on the inflated and self-serving claims of some contemporary neuroscientists to have solved the problem of consciousness, or to be on the brink of developing cures for all sorts of mental and social ailments. And in developing their book’s major critiques of biological reductionism and technological Prometheanism, the Roses also enjoy a convenient rhetorical position in that they disavow religion and

argue from the left. Many critics of biological reductionism and technological Prometheanism are conservative or religious (including some notable contributors to these pages). For these writers, reductionism is an inadequate account of human nature and Prometheanism threatens to violate and debase this nature in the attempt to improve it. For the Roses, who are rather more radical than your average liberal, and so see matters more clearly if not always more truly, reductionism is unacceptable because it posits a fixed human nature in the first place, while Prometheanism will necessarily result in the exploitation of the weak and in greater inequality, even though the things it promises are at present beyond our power.

G*enes, Cells and Brains* is especially strong on the connections between science, economics, and politics. The Roses recount some of “the stem cell saga” in the United States, which they describe as a tale of “hopes raised and dashed, dramatic medical claims subsequently retracted, downright fraud, unethical research, untested therapies, stem cell medical tourism and regulatory regimes varying from the robust to the non-existent.” They also reflect on how “the political defense of humans” has weakened in the West as old alliances have crumbled and the focus of ethical concern about scientific research has moved to animals and the environment.

A case study of this crumbling can be found in Germany. For some years, the Roses explain, “as the result of an effective alliance between the religious, Green, feminist, and secular opposition, and with the support of the leading philosopher Jürgen Habermas, Germany maintained a position of total opposition to stem cell research,” regarding it as incompatible with the concept of human dignity enshrined in Germany’s post-WWII constitution. But in recent years, “pushed by the researchers, encouraged by those in favor of wealth creation, and increasingly legitimized by a new generation of bioethicists less engaged by the concept of human dignity,” Germany has moved slowly from strict opposition to cautious support for human embryonic stem cell research. As one scholar of German bioethics commented, the country went through a process whereby “ethical reasoning about the value of life [was] transformed into instrumental reasoning about the value of research,” and “questions that had once seemed everyone’s property became... issues reserved for a technical elite.”

Nevertheless, it is still widely acknowledged by all parties in Germany, and throughout “secular” Western Europe, that science poses ethical problems and should be subject to political control. It is hard to imagine a major German, French, or even English newspaper taking quite the same line as the *New York Times*

editorial board did in a May 2013 attack on the Obama administration’s stance against making emergency contraceptives available over the counter to all women and girls with no age restrictions. The *Times* editorial suggested that the U.S. Food and Drug Administration (FDA) had the authority to scientifically determine not only whether emergency contraceptives were “safe” but also whether they were “appropriate,” and that the president’s attempt to overrule the FDA decision represented a betrayal of his promise to “keep science a sphere ‘not subject to politics.’” A month later, the Obama administration reversed its position.

The idea that science should always trump politics seems to have taken a strong hold on the American left (notwithstanding some controversial counterexamples, like nuclear energy and genetically modified foods). This points to the deep roots of the American left, and America itself, in the progressive project of the Enlightenment, for which anything that increases the knowledge of the human race and its power over nature must be good. It was this progressive impulse that led many of the supporters of the welfare state to also support eugenics for much of the twentieth century, a fact that is now inconvenient and seldom discussed. No doubt many of today’s progressives would say that their ideological ancestors were right about the welfare state and wrong about eugenics,

neglecting the possibility that the two might have common roots. The Roses, on the other hand, do an excellent job exposing the uncomfortable connections between eugenics and the welfare state, and they go on to make a spirited left-wing case against efforts to genetically engineer human populations.

The concerns that move the Roses to condemn eugenics both past and present are justice and equality. Eugenics, of course, never really went away, it just took a new guise: prenatal genetic screening and other forms of testing are now used to eliminate fetuses that might be born with a disease or some other supposed deficiency. Just what kinds of biological characteristics justify these life and death decisions tend to be determined on the basis of common beliefs or prejudices about what a human life *is* and what makes it worth living. The possibility that a child might be born with Down syndrome is enough for some people to abort it; that it might be a girl is enough for others. If more subtle techniques of manipulation become available, then it may not be necessary to abort a fetus in order to avoid getting a child one does not want—"progress" that would give parents unprecedented power over their children.

As the Roses observe, all of this should be problematic for people who claim to be concerned about justice and equality. If it is unjust to treat people with diseases or other dis-

abilities as lesser beings after they are born, why is it not unjust to decide, before they are born, that the kind of life they may have to live is not worth living? What gives parents the right to determine not just the education but also the nature of their children? Does the "right" of parents to choose whether or not to have children, and to have the kind of children they want, outweigh the "right" of children to life or self-determination? Will biological engineering lead to forms of inequality more radical and extreme than any seen before in human history, as the rich become a caste biologically distinct from the poor?

It is now possible to see how what we call progressive liberalism tends to become conservatism when confronted by certain dilemmas. Conservatism begins with a perception of the limits or defects of human nature. Conservatives therefore respond to programs of radical reform by saying that man should live in accord with his imperfect nature and not try to establish a society that would require human beings to be something other than what human nature allows. And yet it seems that there is something about man that makes it impossible for him to live justly, or according to what is naturally right, without artificial assistance and restraint provided by the community or the state. This end point of conservatism—the admission that given human nature is, in

some sense, a thing that must be overcome—is the point of departure for progressive liberalism.

This makes explicable why for much of the nineteenth and twentieth centuries the voice of conservatism came from the mouth of what is today known as progressive liberalism. Protests against the deleterious effects of industrialization, attempts to ban nuclear and other kinds of weapons that could destroy the human race, and complaints about the “unnatural” or “obscene” inequality of wealth and conditions made possible by technological advancement represent a conservative reaction to the results of the modern liberation of the intellect in the form of science.

Like many works that attempt to explain science to a non-scientific audience, *Genes, Cells and Brains* raises the question of whether science *can* be explained in this way, and, if not, what the implications of this fact are. These issues are raised but only barely addressed by the authors, who hold to a naïve faith in the possibility of a “democratic” or “people’s” science, by which they seem to mean not only a science that is democratically accountable, but also one that is democratically conducted.

If a democratically accountable science is difficult to realize, a democratically conducted one is impossible to imagine. Advanced science requires specialized skills and knowledge that

most people do not have. Moreover, the findings of science may be, and often are, incompatible with prevailing opinions. In such cases, are we meant to take a vote? While the Roses are well aware of the challenge that *applied* science or technology poses for our moral, political, and religious beliefs, they seem reluctant to acknowledge the possibility that *basic* science could also challenge those beliefs.

For instance, it is an article of faith for the Roses, as for many others today, that there is no fundamental difference between men and women. Now, the question of what could *count* as a fundamental difference is not itself a purely scientific question, but requires prior philosophical judgment. Given such a judgment, science could, in principle, produce evidence that would either support or undermine the belief that men and women are in some sense fundamentally different. And yet the Roses will not concede even this. At times, they seem to believe that it is enough to point out that a scientific theory has unpalatable implications in order to refute it. This is connected with their avowed, though never consistently applied, constructivism: if scientific truth is simply “produced” in accordance with social interests or prejudices, then we could pick and choose theories on the basis of whether they conform to our desires.

But the world is what it is. The heart of what the Roses have to

offer readers interested in science as such, as opposed to its ethical and political implications, is not their critique of contemporary bioscience as financially motivated and “essentialist,” but rather their account of the logical and empirical difficulties that beset the reductionist project. In particular, they detail the so-far spectacular failure of genomics—the combination of genetics and informatics most famously embodied in the Human Genome Project—to deliver the practical results promised by its backers in the late 1990s and early 2000s, and argue that this practical failure indicates an underlying theoretical failure (about which more later).

Much of what the Roses say on this count is disputable. But if readers come away from the book only with an understanding that much of what passes for established science *is* disputable, they will have learned a valuable lesson. We live in an age when the name of science is routinely invoked to bludgeon people into accepting claims made on the force of authority. There is an irony in this, as science owes its prestige and its success to its commitment to rigorous and skeptical inquiry that does not carelessly accept authority.

Science is too often depicted as a clean process, based on tightly controlled experiments, that produces clear conclusions fitting within a total and coherent scheme of knowledge. This is not, or is not always,

the reality. Many branches of science contain buzzing confusions of competing claims, where the relations between theory and data, description and explanation, are unclear. Moreover, by the time scientific information reaches the public after being refracted through the media, it is typically simplified and distorted. This problem has been exacerbated by changes in the nature of the scientific enterprise in the postwar era. Here, the Roses’ arguments about the influence of financial interests on science are quite apt: increasingly, research—especially in the life sciences with their potential for applications in medicine—is dominated by a new breed of scientific entrepreneurs with connections to business, major universities, and government. Humbler research scientists have to face the fact that in order to obtain grants, they may need to overstate the conclusiveness of their findings, while also hyping the potential for the “broader impacts” of their research.

As the Roses observe, the advent of “Big Science” in the middle of the twentieth century changed science from a largely individual and hands-on enterprise to a largely collaborative enterprise conducted with complex and expensive equipment. We have now reached the point where science could fairly be described as a mass enterprise. This has implications for the trustworthiness of scientific claims, which used to be the product of individuals directly

engaged in research but in some fields now tend to be products of research teams that rely on abstract statistical and computational modeling. For non-scientists, there is no easy answer to the question of when to trust and when to doubt; the skeptical impulse that is healthy when directed at the hyperbole of today's neuroscience is, quite literally, unhealthy when directed at the consensus on the safety of vaccines.

From a technical standpoint, the most interesting and important chapter in *Genes, Cells and Brains* is the one on the failure of genomics, entitled "Evolutionary Theory in the Post-Genomic Age." The Roses argue that this failure suggests the need for a more holistic approach to understanding organisms in general. They also question the reality of sexual selection, and claim that the emergence of the fields of epigenetics and evolutionary developmental biology, or "evo-devo," points to the basic insufficiency of the neo-Darwinian synthesis—the union of a number of biological sciences under the Darwinian tent—that has dominated biology since the 1930s.

Many, though not all, mainstream biologists and philosophers of biology would disagree with the Roses about sexual selection and the insufficiency of the modern synthesis. Readers unfamiliar with the various concepts and debates should keep this in mind and, when in doubt, seek

out alternative sources, although the Roses' thumbnail history of how that modern synthesis was arrived at is compelling and instructive. Rather than being the product of pure reason dispassionately weighing the evidence, this union of specialized branches of biology was driven by a desire to make biology, previously the poor relation of physics and chemistry, truly "scientific." It was this desire, along with a prior philosophical commitment to the program of reductionist materialism, that led mathematically inclined geneticists like J. B. S. Haldane, Ronald Fisher, and Sewall Wright to construct a synthesis of Darwinism and Mendelian genetics. "By the 1950s," the Roses explain, "the formal definition of evolution had become a 'change in gene frequency within a population.' Organisms had disappeared from the account," and what Wright had once derided as "beanbag genetics"—the view that "what mattered was not even the genome but individual genes operating independently"—had won out in both the popular and scientific mind, with "disastrous consequence for the life sciences."

The Roses note that, while "the triumph of neo-Darwinism seemed assured" throughout the second half of the twentieth century and is still widely taken for granted, "the most basic issues—what it is that evolves, what adaptation is, and whether selection is the only motor of evolutionary change—remain in question."

Moreover, they argue, there is now in practice a split between the evolutionary theorists and molecular biologists. For the theorists, DNA is “akin to God,” the prime mover of what are still basically cellular processes, whereas for the molecular biologists, DNA only acts in conjunction with cellular processes that unfold during the life of the organism as a whole.

The Roses rightly argue that this split is not reflected in the public understanding of the state of biology or its implications for the humanities and our view of ourselves. Though the molecular biologists are involved in hard research and so get more grants, the evolutionary theorists write bestselling books and appear on television. “Gene talk,” supposedly grounded in hard science but actually reflecting an understanding that is at once crude, abstract, and outdated, has infiltrated mass culture and the making of public policy. More broadly, the confusion within biology itself has not stopped “the spread of the evolutionary metaphor far outside its biological domains,” or the growth of a popular and sometimes almost mystical materialism that is now, unfortunately, the intellectual background for most of modern life.

Though the Roses make some important criticisms and offer some useful information about the history of neo-Darwinism, their attempt to describe viable alternatives is consid-

erably weaker. At crucial points their thinking is woolly. Having established, or supposedly established, that the modern synthesis is inadequate, they move to the newer field of epigenetics, from which we learn that “rather than DNA determining cellular activity, it is the cell in which the genome is embedded that ‘chooses’ which bits of DNA to use to build which proteins, and when and how.” On this understanding, organisms “cease to be conceived of as passive vehicles, mere carriers for the all-important replicators, and are seen instead as self-organizing and ‘goal-seeking.’”

The quotation marks around “chooses” and “goal-seeking” are significant. For the Roses, “teleology” is a dirty word, and they prefer the “distinctly softer” notion of “teleonomy,” which “refers to processes that give the appearance of purposefulness but are instead the result of physical and chemical mechanisms.” The distinction remains vague and receives no further attention in spite of what a complex philosophical claim this is. In truth, the authors’ reluctance to self-consciously embrace teleology owes much to their political commitments. They don’t like the idea that nature might have a direction toward an endpoint; that might validate the idea that nature is not entirely malleable, and would mean that people are not free to do and to be whatever they want. And yet, if nature is entirely malleable—or

radically indeterminate, as the Roses put it—then on what grounds could one object to Prometheanism?

This brings us back to Charles Byrne and the “deplorable” treatment of his body. The word suggests a moral consensus among respectable people according to which some actions are obviously beyond the pale. But as the Roses recognize, there is now no such consensus, if there ever was. Few people seem to have deplored what was done to Byrne’s body shortly after his death or in subsequent years, and the involvement in Byrne’s case of prominent figures in the history of science and medicine points to a hard truth: if we want the benefits of science, we have to take the risk that the work of science will violate our deepest taboos.

There are fewer and fewer of these taboos. Science and democracy, two of the greatest forces in modern life, both demand the unraveling of taboos. Where once it was taken for granted by most people that there was something sacred about the body, now one has to make a case for it. But the most powerful ideas and practices are precisely those that are unquestioned and thought to be unquestionable. The deliberate effort to restore old taboos or create new ones is thus always ambiguous; it tends to undermine *all* taboos by making these unspoken agreements the subject of explicit conversation.

At the same time, science has made it more difficult to make arguments about morality in general. First, it has created new moral dilemmas not addressed by older systems of thought. Second, and more important, it has contributed to the now-widespread view that morality is not something one can genuinely argue about—that since moral beliefs supposedly cannot be proved true or false in the same way as scientific theories, they belong, along with everything else that is not amenable to scientific investigation, to the realm of taste. This influence of science, or rather scientism, is one reason why argument plays such a small role in contemporary public life; as the Roses observe, on issues like embryonic stem cell research, abortion, surrogacy, “savior siblings,” and other ethically controversial biotechnologies, what dominates are appeals not to reason but emotion.

Though people in the past disagreed about *what* was right and wrong, there was more agreement that right and wrong as universal principles exist, and that one could argue for or against different moral positions based on reasons. Today, people tend to lack the confidence to argue for their moral beliefs, even as they cannot help having them, and even as a professional class of ethical “experts” has emerged. The last fact is also connected with the prestige and influence of science in our culture. Just as the physical sciences

have become more and more specialized, so have the humanities, the social sciences, and all other fields. The emergence of the sub-field of bioethics in the mid-twentieth century, while in part a response to the horrors of biomedical experimentation on human beings by the Nazis, reflects this trend towards professionalization and specialization in modern thinking about morality.

The Roses' remarks on the history and current state of bioethics, scattered throughout the book, are generally insightful. They note that bioethics is now a booming business, with the consequence that truth and justice are sometimes not the main concerns of those involved in it. In recent years, even the notion that human beings have special dignity, which was once the consensus view of an alliance of secular humanists and religious groups, has collapsed, and now many bioethicists are proponents of the most radical Prometheanism.

The Roses also argue, persuasively, that conventional bioethical notions like ownership, compensation, and informed consent are inadequate both in practice and in principle: in practice because there is a fundamental power imbalance that cannot be overcome between patients and ordinary people on the one hand, and doctors and scientists on the other, and in principle because the body is not a commodity, and researchers themselves, let alone their subjects,

cannot be sure of how their research will be used in the future.

The record that the Roses recount of abuses committed by scientists throughout the twentieth century makes for unpleasant reading. It also busts a myth that seems to underlie so much of today's confidence in obeying the opinions of biotech researchers: that bad things only happen sometime and someplace else—that is, not in Western democracies after the Second World War. One example the authors discuss, if only briefly, is the case of exploitation made famous in Rebecca Skloot's bestselling book *The Immortal Life of Henrietta Lacks*, slated for adaptation in a forthcoming HBO film coproduced by Oprah Winfrey. (The book was reviewed in these pages by Ari N. Schulman; see "What Is the Body Worth?," Spring 2012.) Race and class loom large in these stories, as they do in the Roses' discussions of abortion and surrogacy.

While the examples that the Roses offer, with their stories of inequality and injustice, ought to be especially vexing for the left, they also point to the limitations of the "right-wing" case for the market. Advocates of open trade in organs, tissues, surrogacy, and some other forms of biotech claim that intelligent regulation and greater transparency will eliminate unfairness. But these arguments ignore the basic moral issue of whether people's bodies, and people themselves, should be treated as

commodities. Believing that transparency and regulations can eliminate the risks of abuse means imagining that individuals simply own their bodies, and suggests they can be readily insulated from the realities of power, from society and history. The Roses may have a point about the pernicious influence of what they imprecisely call “neoliberalism”: the decline of the former consensus on human dignity has been caused in part by the intrusion of a crudely abstracted form of economic reasoning into realms that properly require collective reflection on what the good is and how to achieve it.

Just how we should go about reflecting on the good in the near absence of any shared ideas about what the good is, or even any consensus that we ought to be publicly discussing it at all, is unclear. One of the shortcomings of the book is that it points beyond itself to questions its authors are unwilling to grapple with seriously.

Though the Roses never quite say that there are no universal moral principles, they strongly suggest it in arguing against evolutionary psychologists who claim such standards exist “independent of culture or social context.” But this tacit relativism sits uncomfortably with the Roses’ own political commitments. Noam Chomsky argued at the height of the academic controversy following the 1975 publication of E. O.

Wilson’s *Sociobiology* that radicals need to hold to a relatively fixed idea of human nature in order to make a case for political change. If there is no human nature, and therefore no universal human needs or goods, on what grounds could one argue against the current regime?

For his trouble, Chomsky receives a rebuke from the Roses in a footnote. They say that “the paradox of Chomsky’s position has often been noted”—namely, that while Chomsky is the author of a “reductionist and highly conservative thesis about the origins of language,” he has also been a “hugely influential social critic.” But this is no paradox if one recognizes that it is only on the basis of a “conservative” concept of human nature that serious social criticism is possible. The paradox lies not in the view of human nature, but in a politics that makes radical claims for how we ought to live while rejecting any firm notion of what we are.

This paradox sheds light on the curious breach in modern intellectual life between left-wing and right-wing Darwinians. That the left outnumbers the right here has more to do with the common association of Darwinism with atheism, and conservatism with theism, than it does with the logic of Darwinism as such. (The association of atheism with progressivism is relatively recent, in American history at least, though less arbitrary.) For the Roses and other left-wing Darwinians, the

true meaning of Darwin's theory is that nature is radically malleable and without hierarchy. Darwin's own view at the end of *On the Origin of Species* that "all corporeal and mental endowments will tend to progress towards perfection," with its implications of hierarchy and a determined teleology, was, the Roses tell us, "a passing theoretical lapse."

The authors' reading of Darwin is, however, unhistorical. It projects back onto Darwin, a deeply teleological thinker who lived and died in the nineteenth century, some of the tenets of twentieth-century neo-Darwinism. But more important for our purposes is that it leaves them without a leg to stand on when it comes to opposing transhumanism and other Promethean projects. The fact that the Roses, like other intelligent and well-meaning leftists, *do* oppose these projects points again to the tendency of progressivism to become conservative in the face of the contradictions that result from the attempt to realize the progressive project in practice. Nevertheless, it is clear that identifying good reasons to oppose Prometheanism will demand a firmer theoretical foundation than the one that the Roses' progressivism can provide.

Perhaps such a foundation is provided by what one could call "Darwinian conservatism," represented by thinkers like Darwin himself and, in more recent times, the likes of E. O. Wilson, James Q. Wilson,

Roger Masters, Larry Arnhart, and Jonathan Haidt, who, whether they identify as political conservatives or not, seek to ground human morality in an understanding of the evolved, semi-enduring biological nature of human beings. But this foundation, too, is weak, and the Roses make some cogent and compelling objections to it: for instance, evolutionary psychologists claim to explain the similarity of human moral beliefs across time and space—but when they claim that variation simply represents different "expressions" of the same universal moral principles, they leave us with a theory that, as the Roses say, "explains everything and therefore nothing."

Moreover, even if evolutionary psychology could provide an empirical explanation of conventional moral principles, this would not amount to a normative justification for acting in accord with those principles, much less an argument against supplementing natural selection with artificial selection and technology. As Thomas Nagel argues in his recent book *Mind and Cosmos*, moral realism requires a nature conceived in non-Darwinian terms, or in terms that are not completely or comprehensively Darwinian—a truth, Nagel argues, which in turn suggests that teleology and value are ingrained in the natural world. But science has no duty to provide us with what we want or even what we need, despite the hopes of the Darwinian

conservatives that we can buttress morality with biology instead of religion or an older anthropology.

We are left, then, with the question of whether all opposition to Prometheanism is ultimately rooted in religion—in a sense of divinely ordained limits to human nature. Or can it be rooted in a secular respect for the human being, for human dignity, for tradition? Whatever the answer, what is needed is an understanding

of human nature that goes deeper than what the popular trends in the biological sciences offer. The moral challenges created by modern biotechnology may best be met not by deepening our commitment to modern biological science, but by turning to the wisdom found beyond it.

John Sexton is a graduate student in the Committee on Social Thought at the University of Chicago.