

The Demons and Dr. Dawkins [with replies]

Author(s): Robert Pollack, Will Warner, Michael Levin and David Stove

Source: *The American Scholar*, Vol. 61, No. 3 (Summer 1992), pp. 477-480

Published by: [The Phi Beta Kappa Society](#)

Stable URL: <http://www.jstor.org/stable/41212061>

Accessed: 15-06-2015 15:15 UTC

---

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



*The Phi Beta Kappa Society* is collaborating with JSTOR to digitize, preserve and extend access to *The American Scholar*.

<http://www.jstor.org>

As for Mr. Fleming, I have considerable respect for Hugh Thomas—but:

“So far as Western civilization is concerned, the main totalitarian movement of the century has been not Communism but National Socialism. This may be surprising; and yet it is true.” Also: “National Socialism did not die with Hitler.”

These are the first and the last sentences of an entire subchapter devoted to this argument, in a book entitled *A History of the Cold War* (pp. 270 *et seq.*; or pp. 326 *et seq.* in its paperback edition). It was published in 1961 not in 1979. It was written by (to use Mr. Fleming’s words) “a historian who foresaw this phenomenon without the advantage of witnessing the Soviet system in ruins.” This historian is the author of this letter.

### Baron Haussmann

In his article on Haussmann, “Baron Haussmann and Modern Paris” (Winter 1992), David Jordan refers to “the coup d’état that would make him Emperor in 1851.” That is not quite right. The coup d’état of December 2, 1851, and the vote later that month made Louis Napoléon Bonaparte Prince-President. As Prince-President, he had a term of ten years and wide powers rather than the four-term term—with limited powers—to which he had been elected in 1848 as first (and last) President of the Second Republic. The coup of 1851 only laid the groundwork for the establishment of the Second Empire the *next year*, on December 2, 1852.

If accents are used—and they are in the article—it is *Sacré-Coeur* (p. 101). Also (p. 105), it should not be “Place de la République” but “République.” English and French ought not be mixed in the same sentence.

Finally, on page 100, it is said that the Ministry of Foreign Affairs was moved to the quai d’Orsay “far enough from the center of Paris to be out of the range of any street fighting.” Street fighting might well take place very close to the Chamber of Deputies. In fact, it did occur in that area on February 6, 1934. Thus the statement (p. 100) that “French politics were not decided in the Paris streets for more than a century” has more than the single exception (1871) noted by the author. The riots and casualties in 1934 led to the fall of the Daladier Government and the arrival of the Doumergue Ministry of National Union.

BERNARD SINSHEIMER  
History Department  
University of Maryland  
European Division

### The Demons and Dr. Dawkins

David Stove has done himself and your readers a disservice by failing to accept a stubborn fact—the complete identity of copies of a gene—in his witty

criticism of the works of Dr. Richard Dawkins of Oxford that appeared in the Winter 1992 issue of *THE AMERICAN SCHOLAR*. At the center of one of Professor Stove’s arguments lies his certainty that there cannot be an exact copy of anything, or more precisely, that the exact copy of anything cannot be meaningfully equated with its original. He is right to argue that the exact copy of anything that has accumulated a set of unique interactions with its environment is impossible to assemble; he is wrong to take that to mean that there cannot be an exact copy of something that is purely informational, and whose information content is totally sealed off from environmental influences; something, that is, like a gene.

Total preservation of a gene’s information through any number of copying cycles, in any number of novel environments, is the prerequisite of molecular biology’s astounding capacity to generate clinically relevant models. We cannot clone people, but we most definitely can clone genes, and that is where Professor Stone slips up. Consider this example from the December 12, 1991, issue of *Nature*. A group of scientists came together from Mt. Sinai Medical Center, the Japanese firm Yamanouchi Pharmaceuticals, and the NIH to create a strain of mice that is guaranteed to develop the neurological lesions seen before now only in the brains of people with Alzheimer’s disease. The team made these mice by taking a piece of a human gene implicated in Alzheimer’s disease, making uncounted identical copies of it in a bacterium, and attaching one of those copies to the front end of another human gene, one known to be active only in neuronal cells. An exact copy of this hybrid of two human genes was then injected into the nucleus of a fertilized mouse egg. There, the new human gene inserted itself into a mouse chromosome and was exactly copied, over and over again, into every cell of the developing mouse. The newborn mouse—called transgenic because of the singular extra human hybrid gene in each of its cells—was simply left to sit around. Within a few months copies of the human gene, active in its brain, gave rise to the amyloid plaques, the neurofibrillary tangles, and the neuronal losses typical of people with Alzheimer’s disease. Was there anything lost, then, in the many-billion-fold copying of this singular human gene, first in the human whose brain donated it, then in laboratory bacteria, then in the transgenic mouse’s cells? I am sure that nothing was lost, and that each copy was precisely identical to a portion of the original gene.

We are not inventing anything clever when we clone genes; nature clones them at every generation of every living thing. The copies of genes passed from generation to generation are—barring mutation—absolutely identical, despite Professor Stove’s strong belief to the contrary. He argues that since a copy of something is always distinguishable from

the original, genes cannot compete against each other. Copies of one gene may survive while copies of another die out, but that, he argues, is in no way competitive, since the original genes are not affected by this result. He is wrong: when the last copy of a gene or set of genes disappears from among all living things, the information in each of those copies is lost. There is no sensible distinction to be made between the loss of any one of those copies and the loss of any other. None is more of an original than any other; they are all truly identical, and their loss to competition is a true loss.

Evolution of a new species, with the loss of another, is the result of competition among species, not individuals or their genes. However, the result of evolution—not necessarily the mechanism, for it is unknown, but certainly the result—is a competition among sets of identical copies of genes for their survival of some at the expense of other sets of identical copies of genes. In this sense all living species, and all defunct ones from which we and our fellow creatures are descended, were and remain DNA's way of making more DNA. That, I submit, is reason enough to vindicate Dawkins's notion of "selfish DNA" despite his unconnected notion of "memes."

ROBERT POLLACK  
Columbia University  
New York, New York

*The Blind Watchmaker*, by Oxford zoologist Richard Dawkins, is one of my favorite books. In this book and others, Dawkins argues for a certain interpretation of the results of molecular biology since the discovery of DNA. He writes, I think, intelligently, persuasively, evocatively. So I found little to agree with in David Stove's attack on Dawkins in your Winter 1992 issue, especially when Stove finds that Dawkins's books, his ideas, and by strong implication, Dawkins himself, are members "of a slum breed." If Stove can state, in print, that Dawkins's ideas are obviously nonsense, I don't mind saying that those same ideas strike me as obviously true.

What I got out of *The Blind Watchmaker* was an understanding of how the phenotype serves the genotype. Genes are the active ingredients; the rest is packaging. Living organisms are "survival vehicles" for their genes. An organism keeps its genes "alive" so that the genes may replicate themselves in the offspring of the organism. But more than mere vehicles, plants and animals are "weapons systems" for their genes, forged in an arms race with competing organisms. Over millions of years the genes of different species "compete" with each other, producing increasingly effective vehicles. Evolution pits eyes against ears, strength against speed, feathers against fur, brains against brawn. Plants compete for access to sunlight; predators compete with

prey and with other predators for prey—and may the better weapons systems win.

In this description of evolution I am forced to use many quotation marks as protection from Stove's literal mind. A full half of his criticism amounts to an objection to anthropomorphizing genes. Dawkins likes to speak of "selfish genes." By this he means molecules (genes) that work, not consciously but nevertheless inexorably, to replicate themselves, even when success in this enterprise leads, as it often does, to the disappearance of other genes in the same species and sometimes to the utter extinction of another species.

To me it's not so outrageous to call this behavior "selfish," but it is too much of a stretch for Stove, who further claims that it is "impossible to benefit" a molecule. Is it so hard to imagine that a molecule benefits, in some sense, when it is allowed to survive as itself? By me, a water molecule benefits when it is protected from forces that would render it H, H, O. Of course, it's not a benefit on a par with, say, paid maternity leave.

Stove is eventually forced to acknowledge that "selfish gene" is just a figure of speech—Dawkins has said as much. So then he complains that Dawkins, by using the objectionable term, has sold more books than he deserves to, implying that the term is deliberately sensational. I find it evocative, but no more sensational than the title of Stove's own book, *The Plato Cult*, which must be the title of an exposé. But then, incredibly, Stove returns to his now-willful misconception and goes on confusing "effectively selfish" with "consciously selfish" to the very last period of his essay.

I know from personal experience that Dawkins's ideas offend many people. And so I wonder if Stove's attack, which can be fairly described as nasty, arises from wounded sensibilities. It is deflating to hear that molecular biology considers you to be a warm sack for your genes. Animals, certainly human beings, experience it differently. People don't like to be told, as they were by Carl Sagan, that they are made of "star stuff," which is a fancy name for dirt (though not necessarily clay). Many are appalled to learn that the laws of thermodynamics apply to them.

It is true that the-individual-is-nothing is a bad political tenet. But I think I see in the behavior of animals, especially in those actions directed toward ensuring survival and procreation, a certain compulsiveness, which makes it seem as though the animals are "programmed" to do those things. It is evident in the behavior of the cat that lives in our garage, who, despite being well fed by my daughters, hunts birds and mice and insects with alarming intensity. It is there too in the mindless grazing that seems to occupy completely the cows in a pasture across the road. Many animals don't do *anything* but eat and mate. Perhaps Magic Johnson can sleep with so many women because the women, perceiv-

ing Johnson to be the victorious stag, offer him their headquarters. Maybe not. But there is, I sense, something compulsive about my own sex drive.

All this suggests to me not that our genes control us but that they make us things that will do right by them. Genes are not in there consciously directing an animal's behavior. Rather, genes unfold into organisms that act in ways that lead to the successful replication of the genes in new members of the species. Genes that don't produce organisms with this property don't get off the ground. Life is a struggle not only against the elements, but also against other living things that would eat you, or eat what you would eat, or make it difficult for you to eat them. In this combat, plants and animals are trident and net, short sword and shield, for their genes.

WILL WARNER  
Ann Arbor, Michigan

As an admirer of both David Stove and Richard Dawkins, I was dismayed by Stove's attack on Dawkins in your Winter 1992 number.

Stove regards the "selfish" gene as a tendentious metaphor which, when literalized, becomes the banality that genes replicate. Stove apparently thinks behavioral genetics sheds little light on human behavior, and is just one more form of pseudo-scientific determinism.

Stove is right that genes, lacking motives or consciousness, are not literally "selfish," and that Dawkins's title, *The Selfish Gene*, is colossally misleading. What Dawkins is saying is that those genes are selected for whose expression in the behavior of organisms raises the odds that those organisms and their near relations will reproduce. Stove is also right that "memes" is an unwarranted extension of "genes," although nothing makes truth irrelevant to their spread. (Perhaps false memes tend to be dislodged by conflicting observation.) Each reader must decide for himself how hard Dawkins rides his metaphor, but I can only report having come away from *Gene* with no doubts about its message. In my view Dawkins plays fair.

Less important than Dawkins's ipsissima dixit is his argument taken in its strongest form, and so taken it is not trivial. Stove complains that biologists make a "puzzle" of parental care and altruism, but these phenomena are puzzling once we reject the non-explanations of common sense ("Of course we care about our children; they're ours, after all") and theology ("We care about others because God gave us a conscience"). Genes replicate when their home organisms reproduce, and if the traits of organisms must aid or at least not impede gene replication, it is hard to see why such seemingly maladaptive impulses as altruism survive. That altruism can be shown to enhance inclusive fitness and, indeed, that evolution is better able than reason to solve

"prisoner's dilemmas" about cooperation are major advances in understanding morality.

It must be stressed that genetics need not deny that there are selfless impulses, or say they are "really" selfish. Genetics does not make us "helpless puppets" of our genes, since it does not deny that our "intentions, decisions and efforts" make a difference. Even geneticists know that people eat when they become hungry, pursue goals because of ambition, and marry from a desire to marry. What genetics offers is a theory about where intentions and decisions come from. It is easy to suppose that, if A causes B, and B causes C, B somehow doesn't count and it is really A causing C. Thus, we think, if genes + environment cause decisions, and decisions cause actions, decisions must be superfluous. But this is bad reasoning. When a windstorm topples a tree that then blocks traffic, it is not "really" the wind that is blocking traffic, if this is supposed to mean that traffic would have stalled even if the tree had not fallen over. It is similarly fallacious to think that my genes, and not my gene-caused decision, led me to have children, if this is supposed to mean that I would have had children anyway, whether I had wanted them or not. We can have the cake of behavioral genetics and eat the frosting of human dignity. *Something* must cause our decisions, and at least genes are an intimate part of the decision-making self.

Stove lumps behavioral genetics with astrology, Freudianism, Marxism and theology. Yet the trouble with the latter trio is not that they posit causes of human behavior, but that they *lack* a plausible cause. Astrology is absurd because for myriad reasons the stars cannot influence human affairs. Ironically, Marxism goes wrong precisely by ignoring the biological determinants of behavior. Marxism isn't silly because it says that economics *causes* us to act as we do, but because it says that *economics* causes us to act as we do.

When Stove agrees that "the causation of many human attributes . . . is entirely or principally genetic," he has already distinguished genes from stars and infantile sexuality. He cannot just be thinking of physical attributes, since the attributes he means "cannot be significantly interfered with by . . . education and welfare money." So even he allows that the causes of "effort and decisions," the factors that, along with ability, determine educational and vocational success, lie deep in our DNA. What exactly is Stove protesting, then?

The nonexperimental nature of Dawkins's reasoning reminds Stove of the armchair deductions of philosophers. The fact is that evolutionary speculations about altruism and parental investment can be and have been subjected to quantitative test. More important, any great scientific advance sheds new light on familiar phenomena. Newton having formulated his laws in terms of instantaneous rates of change, scientists for centuries after reflexively took

derivatives of any quantity they could get their hands on, which might also have appeared suspiciously effortless. Darwin has prompted scientists to look anew at everything in the living world as the filtrate of a testing process in which mutation proposes and selectional pressure disposes. That this perspective can explain man's higher nature without reference to a moral order is as important as Darwin's Godless explanation of apparent design.

MICHAEL LEVIN  
Department of Philosophy  
The City College of  
The City University of New York  
New York, New York

**DAVID STOVE replies:** Professor Pollack's letter is based, unfortunately, on a complete misapprehension. I do *not* think that in gene-replication the fidelity of copying is usually less than perfect.

Mr. Warner, like Dr. Dawkins himself, keeps saying that he does not believe that genes have purposes, but he also keeps saying things that imply that they do. That is, he keeps saying things he does not believe. No doubt there are some circumstances in which this is excusable. But I cannot think of any excuse for it that is available to Mr. Warner, or to Dr. Dawkins.

But Mr. Warner could also with advantage try the experiment of writing down what he believes about genes, *without* using any expression that implies that genes have purposes. If he succeeds, he will find that everything characteristic of Dawkins—such as people being “tools” that genes use for their own “ends”—has suddenly dropped out of his biology. If he fails, he will then be obliged to recognize that what he and Dr. Dawkins believe about genes is a demonology, or a new theology, after all. (See my article “A New Religion” in the British journal *Philosophy*, April 1992.)

I am sorry to learn that my respected friend Michael Levin is an admirer of Richard Dawkins's books. It is rather like learning that an intelligent and educated friend thinks that Mills and Boon novels are pretty good.

But then I found, to my relief, that his disagreements with me are by no means so deep or extensive after all. The acid test is Dawkins's tomfoolery about “memes”; anyone who can take *that* seriously, or cannot recognize in it an all-too-familiar type of mental debility, really is beyond hope. But Levin, it turns out, passes this test without difficulty.

His main complaint against me is that I passed silently by the theory of inclusive fitness. Well, I did. But then, that theory owes nothing to Richard Dawkins, and no one, certainly not Dawkins, would

suggest that it does owe anything to him. O.K.: that is why I did not mention it.

I must admit, though, that I am far less confident than Levin is, that inclusive-fitness theory *does* explain altruism. In every exposition of that theory that I have met with, the expositor seemed to be afflicted by a profound uncertainty, as to whether he was *explaining* altruism (as another scientist might explain some undoubted fact, such as the tides), or *denying the existence of* altruism.

And it was this very ambiguity, after all, that allowed Dawkins to get his foot in the door. His idea is that while mere *organisms* do (perhaps) behave altruistically, such behavior is “really” just the realization, in flesh or fiber, of the *selfishness of genes*. And that idea had been lying just below the surface, all along, in inclusive-fitness theory. Dawkins's originality consisted merely in his seeing that there was metaphysics (and money too) to be made out of this idea.

Levin asks, “What exactly is Stove protesting, then?” Why, just a thing which, as every philosopher knows, is very common: good and innocent science being turned into bad and pernicious philosophy.

The University of Virginia  
WALKER COWEN MANUSCRIPT  
PRIZE—1992

The University of Virginia announces the establishment of the Walker Cowen Memorial Prize to be presented biennially to the author of a book-length manuscript dealing with scholarship in eighteenth-century studies in history, literature, philosophy, or the arts.

The award of \$3,000, and publication of the manuscript by the University Press of Virginia, is in honor of the late Walker Cowen, who served as the second Director of the University Press of Virginia from 1969 until his death in 1987.

To be eligible, manuscripts should be submitted no later than November 1, 1992, in quadruplicate to:

Cowen Award Judges  
c/o University Press of Virginia  
Box 3608,  
University Station  
Charlottesville, VA 22903

Announcements of the winning manuscript will be made on April 13, 1993, coinciding with the 250th anniversary of the birth of Thomas Jefferson.