

Darwin's Modern Bulldogs: Stephen J. Gould, Richard Dawkins, and E. O. Wilson

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Introduction

Shortly after Shakespeare died a British scientist named John Ray defined what a species was, and also stated that they could go extinct. This was not well received for people had no desire to contemplate the likely dead end fate of their own species, and they couldn't imagine their God wasting his creations. Freud said, "The more the fruits of knowledge become accessible to men, the more widespread is the decline of religious belief" (Moncur). The theory of evolution was such a feast from the tree of knowledge that to many it blasphemously reduced almighty God to ashes, or just "blind pitiless indifference" according to Dawkins (Walker). Of all people, an academic Christian clergyman groomed for the Anglican church was to be behind the theory that to this day still most brings out the us—them, science—religion, God—dog, what have you, rabid rampant and often nonsensical confrontations that surround evolution.

By many simple twists of fate in 1831 Charles Darwin was asked to be the captain's personal guest (i.e., learned gentleman conversation partner) for a multiyear scientific voyage on the HMS Beagle. Captains were solitary untouchables on their ships who could not be spoken to by the crew unless the captain initiated the dialogue, so as a personal guest Darwin was outside such stressful codes of conduct. Darwin was only 22 and an avid naturalist who saw the journey as a great chance to expand his horizons. However, he was so adept in his studies that within a year the ship's official naturalist quit the boat not wishing to play second fiddle to an amateur. Darwin took over the vacant position, and had years to explore various flora and fauna and ample time in which to relate his findings to the species problem. The events that led up to the chance for Darwin to ever reach the Galapagos Islands were improbable, but no need to see the hand of a creator in such happenstance.

Darwin was extremely perceptive, so much so that he was to sit on his theory of natural selection for

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almost 20 years, though he did discuss it within his circle of elite scientist friends. He had thought about it from many angles and understood its implications better than anyone. There was immortality for the discoverer of such a bold new vista, and also infamy. His Beagle voyage saw many well-received publications that securely established Darwin in the world of science, so no need to rush his date with the public's disfavor. Were it not for an innocent correspondence from the young naturalist Alfred Russel Wallace who had proposed a theory very close to Darwin's, there is no telling how long Darwin would have kept natural selection from the public's scrutiny. There is much speculation about why Darwin waited, but maybe the most accepted is that he was afraid of the public outcry that would result. Indeed, there had been other books published during the time he was working on his *The Origin of Species* that had proposed various theories of evolution. Those books created quite a public stir, but “none of these theories was quite as godless as Darwin's” (Wright, 1994, p232).

After Darwin published his theory of natural selection, evolution has been prominent in the public eye. This is in no small part due to the fact that many people find many aspects of the theory to be reprehensible; many see it as implying that people are not the center of the universe or the crown of creation. That the theory of evolution is evolving itself is a microcosmic representation of its own workings. That evolution happens is to almost any biologist a given fact, but what is driving such changes is still a source of much heated debate. The superheated political, social, religious, as well as scientific nature (pun intended, please) of evolution means that any disagreements among evolutionary pundits is covered extensively in the popular press. Such scholarly dirty laundry is aired for all to glory in. We are made privy to such disagreements to rally popular support and possibly even, though doubtful, to try to uncover the truth (the purported highfalutin goal of science). Creationists use such contentions to support their repudiation of evolutionary theory, for if the purported experts can't agree, then doesn't that tarnish the hallowed glow of the theory? No, not at all. The fittest explanations survive, while others die out—appropriately.

For the past quarter century or so, three scientists have been most prominent, publicly espousing their own particular takes on various aspects of evolution: Stephen J. Gould of Natural History and punctuated equilibrium fame, Richard Dawkins whose book *The Selfish Gene* seemed to many to belittle the whole concept of organism as well again as of God himself, and E. O. Wilson who is credited with starting sociobiology and all the assertions within that are so emotionally discussed across many disciplines. Their backgrounds are paleontology, ethology (evolutionary study of animal behavior—how such behavior is adaptive), and entomology respectively. Each strongly wants to spread the gospel of evolution, each has been vigorously attacked by fellow scientists and the public for their thoughts on the subject, and each has made contributions to evolutionary theory.

E.O. Wilson

“The great paradox of determinism and free will, which has held the attention of the wisest of philosophers and psychologists for generations, can be phrased in more biological terms as follows: If our genes are inherited, and our environment is a train of physical events set in motion before we were born, how can there be a truly independent agent within the brain? The agent itself is created by the interaction of the genes and the environment. It would appear that

our freedom is only a self delusion.” E. O. Wilson (Sean Gould [no relation to Stephen])

“There is also a Darwinian reason that we believe in free will: A society in which the individual feels responsible for his or her actions is more likely to work together and to survive to spread its values.” Stephen Hawking (Sean Gould)

When Wilson published his book *Sociobiology: The New Synthesis* (Wilson, 1975a) in 1975, it had already been widely discussed in the popular press. Why? They knew that here was something that would pique some public nerves. It did. “The zoological chapters of his book, dealing with the social insects, fish schools, birds, elephants, and carnivores, were well received. But the final chapter, on human behavior, ignited the most tumultuous academic controversy of the 1970s” (Bethell). Wilson studied ants and reasoned that as their behavior as social animals is driven by natural selection, so too is human behavior. However, in the feel good everybody is the same drivel of the 70's, his writings were heresy.

Sociobiology is the study of animal social behavior in a Darwinian light; it treats acts of behavior like adaptive traits inheritable by genes. This sounds innocent enough, but humans are part of the animal kingdom. Free will is a trait that many humans didn't want to concede to random mixing of DNA. If genes determined the person or personality traits, then some reasoned that racism and sexism could be justified genetically. Thus, Wilson was vilified as a neo-Nazi. So strong was the academic uproar that the word *sociobiology* became tainted, and sociobiologists to distance themselves from the past and their leader go by different names: behavioral ecologists, Darwinian anthropologists, or evolutionary psychologists (Wright, 1994, p6). By doing so the field has grown without suffering the persecution that their marked leader did. However, the field has not become the mainstay of behavioral sciences or died out, much to the chagrin of those who envisioned such extremes (Konner).

Wilson's fame was more infamy for quite some time. After his controversial book came out, he was attacked from many quarters, including two of his Harvard colleagues Stephen J. Gould and R. C. Lewontin. They were all housed in the same building within a minute of each other, but Wilson's colleagues never discussed their criticisms with Wilson. Instead they helped write a scathing letter that was published in the *New York Review of Books* (Leeds) that started the diatribe of politically correct weighted barbs whose wounds Wilson still feels to this day. Even Dawkins, a man who pulls no punches when expressing his opinions, thought it was “discourteous of them not popping down the hall to talk to him about it” (Douglas). Sociobiology though by any name has been vindicated, yet how much so is still an explosive question (Konner).

Richard Dawkins

“An atheist before Darwin could have said, following Hume: "I have no explanation for complex biological design. All I know is that God isn't a good explanation, so we must wait and hope that somebody comes up with a better one." I can't help feeling that such a position, though logically sound, would have left one feeling pretty unsatisfied, and that although atheism might have been logically tenable before Darwin, Darwin made it possible to be an

intellectually fulfilled atheist.” Richard Dawkins (Dawkins, 1996)

“The history of evolutionary biology reports numerous cases of evolutionary theories that were eventually rejected. The belief that a gene can be the direct object of selection is one such refuted theory. An inheritance of acquired characters is another one.” Ernst Mayr (Mayr, p269)

Though Dawkins, the one who coined the term *meme*, considers his magnum opus to be *The Extended Phenotype*, he will always be remembered for authoring *The Selfish Gene* (Dawkins, 1989). His book is reductionism reduced; forget social groups or individual organisms, for the true competition or natural selection takes place among genes (Dawkins, 1989). Gould and others see individuals and groups as the agents of selection. What Dawkins refers to as genes are not regions of DNA transcribed into RNA, or even regulatory domains. He won't be bound by a hard definition. It is only important that organisms be thought of as vehicles for genes, or as Wilson said, “People are DNA's way of making more DNA” (Martin).

Dawkins would love to see truth, as he is an objective realist, found out, and for him science is the way, and God is fallacy. His abhorrence of religion is easy to perceive in his writings: “I am against religion because it teaches us to be satisfied with not understanding the world” (Walker). Outside of his blatant outspoken contempt for religions, he generally avoids overextended pronouncements on behavior. This has helped to make Dawkins, not E. O. Wilson, “paradigmatic hero” of evolutionary psychology (i.e., sociobiology, Dusek). Dawkins is passionate about what humans can do with their intelligence and sees science as the way and the light:

“After sleeping through a hundred million centuries we have finally opened our eyes on a sumptuous planet, sparkling with colour, bountiful with life. Within decades we must close our eyes again. Isn't it a noble, an enlightened way of spending our brief time in the sun, to work at understanding the universe and how we have come to wake up in it? This is how I answer when I am asked—as I am surprisingly often—why I bother to get up in the mornings. To put it the other way round, isn't it sad to go to your grave without ever wondering why you were born? Who, with such a thought, would not spring from bed, eager to resume discovering the world and rejoicing to be a part of it?” (Dawkins, 1998).

Dawkins is a neo-Darwinist who sees natural selection behind the majority of evolution which the majority of those in the field would agree with. Gould thought that Dawkins, and many others especially in sociobiology, were too ready to see natural selection as the causative or adaptive agent of just about any aspect of the organism, so he labeled them hyper-Darwinists. He thinks that they are guilty of looking at any trait and proposing adaptive reasons why the trait is present—also called *just-so* stories. In the late 1960's Jeremy Benzer first linked genes to behavior in fruit flies, so from a lowly fly ambling towards a light, we now have scientists searching for the genetic basis of every imaginable human trait (Weiner). For example, depression is thought by some scientists to be adaptive for a variety of reasons including reducing metabolism in times of famine, and influencing others to come to your aid. Such speculative explanations are taken as fact by many, and this a fairly short time after the link between genes and behavior was thought preposterous (Weiner). I was at the 2004 Human Behavior and Evolution Society meeting when during a presentation the

researcher stated that he didn't feel that depression was adaptive—unintended comedy. We've come a long way baby.

Stephen J. Gould

“Creationist critics often charge that evolution cannot be tested, and therefore cannot be viewed as a properly scientific subject at all. This claim is rhetorical nonsense.” Stephen Jay Gould (BrainyQuote).

“Evolution is something that happens to organisms. It is a directionless process that sometimes makes an animal's descendants more complicated, sometimes simpler, and sometimes changes them not at all. We are so steeped in notions of progress and self-improvement that we find it strangely hard to accept this.” Matt Ridley (Sean Gould)

“Gould occupies a rather curious position, particularly on his side of the Atlantic. Because of the excellence of his essays, he has come to be seen by non-biologists as the preeminent evolutionary theorist. In contrast, the evolutionary biologists with whom I have discussed his work tend to see him as a man whose ideas are so confused as to be hardly worth bothering with, but as one who should not be publicly criticized because he is at least on our side against the creationists.” John Maynard Smith (Wright, 1999)

“Progress, then, is a property of the evolution of life as a whole by almost any conceivable intuitive standard.... let us not pretend to deny in our philosophy what we know in our hearts to be true.” E O Wilson (Sean Gould)

“Over the years, Gould has mounted a series of attacks on aspects of contemporary neo-Darwinism, and although none of these attacks has proven to be more than a mild corrective to orthodoxy at best, their rhetorical impact on the outside world has been immense and distorting.” Daniel Dennett (Dennett)

Stephen Jay Gould tirelessly tried to educate the public about evolution through his many popular books and his essays in *Natural History* that appeared in each issue for almost 30 years. The ideas that he espoused were often against the trends in the field and gave creationists lots of insider information with which to attempt to discredit the theory of evolution. Though he vigorously campaigned against creationism, he truly thought that science and religion could exist peacefully, as long as both sides stuck to their own fields. Therefore he made friends and enemies from both camps and enjoyed keeping theoretical thinking on evolution lively; “He will be remembered as a mosquito on the backside of biology and a master of popularization. His powerful voice will echo on for a long time.” Richard Dawkins (Randerson).

The theory of Punctuated Equilibrium (PE) sought to change the image of evolution as slow and gradual (phyletic gradualism) ever plodding towards greater complexity (Eldredge). The theory implied that most

speciation takes place when a small group of a population separates and becomes isolated from the large group. In this small daughter group, change can then proceed quickly (by evolutionary terms) resulting in a new daughter species. This fast change could explain why new species seem to appear suddenly in the fossil record. Also, the adaptive influence on evolution would be most pronounced during the punctuations. In large populations there is just fluctuating genetic drift that cancels out most adaptive driven evolution. Though Gould liked to think that PE was not amenable with slow gradual Darwinian evolution, it can still be explained as gradual and population dependent according to Mayr (Mayr).

Gould also strongly argued against neo-Darwinism that looked to find adaptive mechanisms behind most all change combined with a progressive trend towards more complex species (compare with Wilson quote above); intelligence is the poster child of complexity for many pundits. Gould viewed evolution as a random walk that had no direction toward further complexity. He liked pointing out that mammals were not anything special at all until the dinosaurs made room for *us* to evolve, that for 200 million years mammals were mice sized scavengers under the toes of the dinosaurs (recently challenged [Hu]). In his views, evolution is a big game of chance with complexity leading to increased susceptibility to extinction. Thus, he considers the age of man to be speciocentric — it will always be the age of bacteria.

Conclusion

Wilson's book (Wilson, 1975a) received exceptional media coverage. There were full page ads in *The New York Times Book Review* as well as a front page *New York Times* article describing sociobiology as having “revolutionary implications for human societies” — all this for a “seven-hundred page coffee table book” (Casti). The media knew fireworks were in line with such explosive material, so it fueled the fire— anything to increase sales. The way scientists behaved in the public light was akin to chair throwing on the Jerry Springer show, and hopefully is the closest science comes to sensationalism.

The sanctity of science can be taken to very lofty heights of idolatry. Ideally, science is the pure pursuit of knowledge, and in the best of all possible worlds there are no egos interfering with discovering the unknown. Peer review should be a sort of sorting of ideas ideally, taking the two heads are better than one saying to heart, but not just any heads. The word peer comes from the nobility, and in this case means those who have expertise in a field. The general public or, as Shakespeare aristocratically saw the common man, “the beast with many heads” (Shakespeare), were not to meddle in lofty philosophizing. Select academics were left to wrestle with august questions to raise the pinnacle of human knowledge (i.e., push the envelope). People however are responsible for doing science.

Egos, political agendas, and all that is most to be ashamed of in humans have influenced science throughout its fairly short history (for a recent whiff of ill will in science and peer review read Burr). Mad scientists as portrayed in media can range from peculiar mad down to evil mad. Gould knows how scientific power has been abused and the images he provoked attacking Wilson's sociobiology were manipulative by design:

“These theories provided an important basis for the enactment of sterilization laws and restrictive immigration laws by the United States between 1910 and 1930 and also for the eugenics policies which led to the establishment of gas chambers in Nazi Germany” (Leeds).

Those are very powerful emotive examples sure to get a rise. Gould could (did could become cooled?) have gone down the hall to talk with Wilson, or he could have easily engaged Wilson in a more academic setting of a conference. Resorting to shock tactics purely for the general public was supposedly done to rally those who might not join in discussing sociobiology, but the public actions can more easily be interpreted as a mean spirited over the top attempt to discredit sociobiology—the ends justifying the means. By taking the argument public, taking it out of the passive voice of the academic press, Gould and cohorts were engaging in “self-righteous vigilantism which not only produces falsehood but also unjustly hurts individuals and through that kind of intimidation diminishes the spirit of free inquiry and discussion crucial to the health of the intellectual community” (Wilson, 1975b).

“It seems unlikely that a Harvard professor (i.e., Wilson) could author a book whose title (Sociobiology) defines a new science of applying biology to human social behavior, in the middle of a decade that was defined by its ideological emphasis on egalitarian politics and cultural determinism, and not expect trouble” (Shermer). However, Wilson **was** caught off guard by the public, vindictive, and personal nature of the attacks. The public success of Wilson's book made him legal game for political machinations. Gould saw it as a chance to put the neo-Darwinists down to show his own ideas in a better light. Had Wilson's book circulated only among academics, it is probable any thinking on sociobiology would have proceeded in the standard mundane ways of science within the citadels of academia.

Gould and Dawkins were (are) much more vocal in their attempts to educate the public of their slants on what evolution is writing much more popular science intended for the layman than Wilson. They were seen, in the public's eye at least, as leading the two challenging camps of evolutionary theory, so that their differing views of life were often the subject of much popular press (Sterelny). They did disagree over the vehicle of selection, the extant adaptation plays in selection, the direction of evolution, and other points. However, as media icons their views were also misrepresented in typical media hype fashion to ensure sensationalism. Dawkins in a letter to the *Guardian* in response to a piece in a previous issue titled “Feud for thought” (Brown) points out just a few of the inaccuracies that plagued the article (Dawkins, 1997). Many of the disparate positions he supposedly took with Gould listed in the article were in fact areas that Gould and he agreed on. The public wants controversy and to be entertained, so even when none exist, less than rigorous journalism can provide it. Gould in his *Natural History* essays repeatedly brought home the point that the original literature had to be read, or errors would compound; don't let other people interpret for you. Reading the original might be easy for an academic maybe, but not the general public. Benzer even collected misprints in newspaper articles to illustrate genetic mutation (Weiner). In the age of exponentially growing information, we are too much at the mercy of the media.

All three scientists are (were) looking into what drives evolution. This might not get much scrutiny, but philosophically the mechanisms of evolution could define us. At root is the tearing question, “Why am I as I am?”, or how did we became human? Creationists fear that God will vanish in a puff of logic (Adams) if stochastic random processes appear to answer the question. Gould did see random events in our past, but thought that no scientific argument could banish God as God was outside the realm of science. Wilson and Dawkins think genes hold the answer, and God is not pulling any strings. Why so many people care so passionately about our past is a possible question for the closet sociobiologists (card carrying evolutionary psychologists) to delve into. However, I fear that the answers to questions buried many hundreds of millions

of years in the past might never surface and we will be left in the current state of affairs with various camps posturing to bring their own views into acceptance. Why do we have this need for our ideas to be believed by others? We are indeed a curious animal.

References

- Adams, Douglas. (1995) *Hitchhikers Guide to the Galaxy*, New York, NY, Ballantine Books
- Bethell, Tom. (2001) *First Things* 109: 18-24.
- BrainyQuote (2001-4) Stephen Jay Gould quotes.
http://www.brainyquote.com/quotes/authors/s/stephen_jay_gould.html (8 Sep. 2004)
- Brown, A. (1997, June 11) Feud for thought, *Guardian*
- Burr, Chandler. (2004) *The Emperor of Scent*, New York, NY, Random House
- Casti, John. (1989) *Paradigms Lost*, New York, NY: Avon Books, 174
- Dawkins, Richard. (1989) *The Selfish Gene*, New York, NY: Oxford Univeristy Press
- Dawkins, Richard. (1996) *The Blind Watchmaker*, New York, NY: Norton
- Dawkins, Richard. (1998) *Unweaving the Rainbow*, New York, NY: Houghton Mifflin, 6
- Dawkins, Richard. (1997, June 16) Response to “Feud for thought”, *Guardian*
- Dennett, Daniel. (1996) *Darwin's Dangerous Idea*, New York, NY: Simon and Schuster, 262
- Douglas, Ed (2001, February 17) Darwin's Natural Heir. *Guardian*
- Dusek, Val (1999) *Science as Culture*, 8:2, 129-170
- Eldredge, N., and Gould, S. J. (1972) Punctuated Equilibria: An Alternative to Phyletic Gradualism, in Schopf, T. M., ed., *Models in Paleobiology*: San Francisco, Freeman, Cooper, & Co., 82-115
- Gould, Sean, Science, evolution and human behavior quotations page.
<http://www.inet.co.th/cyberclub/sgould/quotes.htm> (7 Sep. 2004)
- Hu, Y., et al (2005) *Nature* 433: 149-152
- Konner, Melvin (2002) *The Tangled Wing*, New York, NY: Henry Holt and Company, xvii
- Leeds, A., et al (1975, November 13) Against “Sociobiology”, *New York Review of Books*, 22:18
- Krzywinski, Martin (2001) Daily quotation server--E.O. Wilson.
<http://www.quoteserver.ca/cgi-bin/dqs?browse=1&id=1673> (7 Sep. 2004)
- Mayr, Ernst (2001) *What Evolution Is*, New York, NY: Basic Books
- Moncur, M. (1994-2004) Quotations page-Sigmund Freud. <http://www.quotationspage.com> (4 Sep. 2004)
- Randerson, James (2002, May 21) Stephen J. Gould, biologist and writer, dies, *New Scientist*
- Shakespeare, William (1610) *Coriolanus*, Act 4 Scene 1
- Shermer, Michael (2000, July 1) “Biology, Destiny and Dissent.” A Review of Defenders of the Truth: The Battle for Science in the Sociobiology Debate and Beyond by Ullica Segerstrale; The Monk in the Garden: The Lost and Found Genius of Gregor Mendel, the Father of Genetics by Robin Marantz Henig; The Riddled Chain: Chance, Coincidence, and Chaos in Human Evolution by Jeffrey KcKee, *Washington Post Book World*
- Sterelny, Kim (2001) *Dawkins vs Gould*, Cambridge: Icon Books
- Walker, C. (1996-2004) Positive Atheism's Big List of Richard Dawkins Quotations,
<http://www.positiveatheism.org/hist/quotes/dawkins.htm> (1 Sep. 2004)

Weiner, Jonathan (1999) *Time, Love, Memory*, New York, NY: Vintage Press

Wilson, E. O. (1975a) *Sociobiology: The New Synthesis*, Cambridge, MA:Belknap Press.

Wilson, E. O. (1975b, December 11) For Sociobiology, *New York Review of Books*, 22:20

Wright, R. (1994) *The Moral Animal*, New York, NY: Vintage Press

Wright, R. (1999, December 13) The Accidental Creationist, *The New Yorker*

[Abstract]

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Darwin constructed his theory of natural selection only to wait 20 years before publishing. Evolution has been a hot topic ever since then with many people finding many aspects of the theory to be reprehensible for various reasons. That the theory of evolution is evolving itself is a microcosmic representation of its own workings. That evolution happens is to almost any biologist a given fact, but what is driving such changes is more divisive even without bringing in God, free will, or sociobiology. The three most prominent scientists espousing their own takes on evolution are Stephen J. Gould, Richard Dawkins, and E. O. Wilson. All are devout Darwinians, but Wilson and Dawkins hold that genes influence evolution much more than Gould does. Wilson started sociobiology only to be ostracized for political reasons and have the very name sociobiology discarded. Dawkins sees the gene as the unit of selection with the organism reduced to merely carrying out DNA competitions. Gould, unique to the three, thinks selection is multi-tiered, rapid, and random; creationists and Darwinists both respect and revile him. At stake is our own human *just-so* story of how we became so special among the animals, and God's place therein.

Key words : Dawkins, evolution, Gould, sociobiology, Wilson