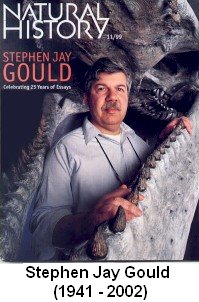
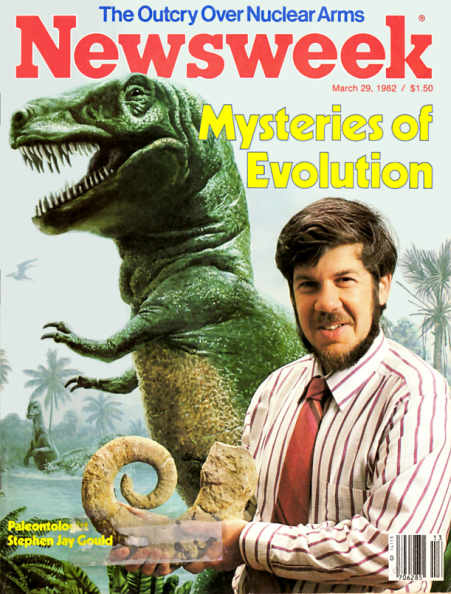
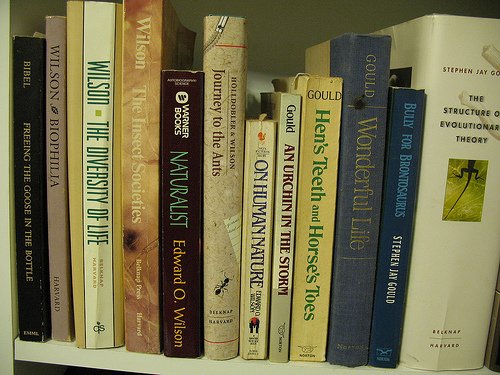
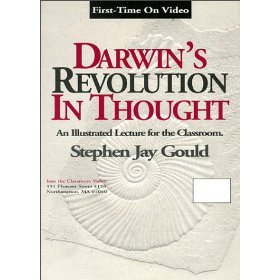
**Stephen Jay Gould 1941 – 2002**

<http://en.wikipedia.org/wiki/Stephen_Jay_Gould>

**Stephen Jay Gould** ([September 10](http://en.wikipedia.org/wiki/September_10), [1941](http://en.wikipedia.org/wiki/1941) – [May 20](http://en.wikipedia.org/wiki/May_20), [2002](http://en.wikipedia.org/wiki/2002)) was a prominent [American](http://en.wikipedia.org/wiki/United_States) [paleontologist](http://en.wikipedia.org/wiki/Paleontology), [evolutionary biologist](http://en.wikipedia.org/wiki/Evolution), and [historian of science](http://en.wikipedia.org/wiki/History_of_science). He was also one of the most influential and widely read writers of [popular science](http://en.wikipedia.org/wiki/Popular_science) of his generation. Gould spent most of his career teaching at [Harvard University](http://en.wikipedia.org/wiki/Harvard_University) and working at the [American Museum of Natural History](http://en.wikipedia.org/wiki/American_Museum_of_Natural_History) in [New York](http://en.wikipedia.org/wiki/New_York_City).

Gould's greatest contribution to science was his theory of [punctuated equilibrium](http://en.wikipedia.org/wiki/Punctuated_equilibrium) which he developed with [Niles Eldredge](http://en.wikipedia.org/wiki/Niles_Eldredge) in 1972.[[1]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-0) The theory proposes that most evolution is marked by long periods of evolutionary stability, which is later punctuated by rare instances of [branching evolution](http://en.wikipedia.org/wiki/Cladogenesis). The theory was contrasted against [phyletic gradualism](http://en.wikipedia.org/wiki/Phyletic_gradualism), the popular idea that evolutionary change is marked by a pattern of smooth and continuous change in the fossil record.

Most of Gould’s empirical research was based on the land snails [*Poecilozonites*](http://en.wikipedia.org/wiki/Poecilozonites) and [*Cerion*](http://en.wikipedia.org/wiki/Cerion). He also contributed to [evolutionary developmental biology](http://en.wikipedia.org/wiki/Evolutionary_developmental_biology), and has received wide praise for his book [*Ontogeny and Phylogeny*](http://en.wikipedia.org/wiki/Ontogeny_and_Phylogeny_%28book%29). In evolutionary theory, he opposed strict selectionism, [sociobiology](http://en.wikipedia.org/wiki/Sociobiology) as applied to humans, and evolutionary psychology. He campaigned against [creationism](http://en.wikipedia.org/wiki/Creationism) and proposed that [science](http://en.wikipedia.org/wiki/Science) and [religion](http://en.wikipedia.org/wiki/Religion) should be considered two distinct fields, or "magisteria", whose authority does not overlap.[[2]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-noma-1)

Many of Gould's [Natural History](http://en.wikipedia.org/wiki/Natural_History) essays were reprinted in collected volumes, such as [*Ever Since Darwin*](http://en.wikipedia.org/wiki/Ever_Since_Darwin) and [*The Panda's Thumb*](http://en.wikipedia.org/wiki/The_Panda%27s_Thumb_%28book%29), while his popular treatises included books such as [*The Mismeasure of Man*](http://en.wikipedia.org/wiki/The_Mismeasure_of_Man), [*Wonderful Life*](http://en.wikipedia.org/wiki/Wonderful_Life_%28book%29) and [*Full House*](http://en.wikipedia.org/wiki/Full_House:_The_Spread_of_Excellence_from_Plato_to_Darwin).

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| **Contents**     * [1 Biography](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Biography) * [2 Scientific career](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Scientific_career)   + [2.1 Punctuated equilibrium](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Punctuated_equilibrium)   + [2.2 Evolutionary developmental biology](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Evolutionary_developmental_biology)   + [2.3 Selectionism and sociobiology](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Selectionism_and_sociobiology)     - [2.3.1 Against "Sociobiology"](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Against_.22Sociobiology.22)     - [2.3.2 Spandrels and the Panglossian Paradigm](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Spandrels_and_the_Panglossian_Paradigm)   + [2.4 Land snails](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Land_snails)   + [2.5 Influence](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Influence)   + [2.6 The Structure of Evolutionary Theory](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#The_Structure_of_Evolutionary_Theory) * [3 As a public figure](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#As_a_public_figure) * [4 Controversies](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Controversies)   + [4.1 Opposition to sociobiology and evolutionary psychology](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Opposition_to_sociobiology_and_evolutionary_psychology)   + [4.2 Cambrian fauna](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Cambrian_fauna)   + [4.3 Mismeasure of Man](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Mismeasure_of_Man) * [5 Nonoverlapping Magisteria (NOMA)](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Nonoverlapping_Magisteria_.28NOMA.29) * [6 Books](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Books) * [7 Notes](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Notes) * [8 External links](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#External_links) |

**Biography**

Gould was born and raised in the [Queens](http://en.wikipedia.org/wiki/Queens) [borough](http://en.wikipedia.org/wiki/Borough_%28New_York_City%29) of [New York City](http://en.wikipedia.org/wiki/New_York_City), [New York](http://en.wikipedia.org/wiki/New_York). His father Leonard was a [court stenographer](http://en.wikipedia.org/wiki/Court_reporter), and his mother Eleanor was an [artist](http://en.wikipedia.org/wiki/Artist). When Gould was five years old, his father took him to the Hall of Dinosaurs in the [American Museum of Natural History](http://en.wikipedia.org/wiki/American_Museum_of_Natural_History), where he first encountered [*Tyrannosaurus rex*](http://en.wikipedia.org/wiki/Tyrannosaurus). "I had no idea there were such things—I was awestruck", Gould once recalled.[[3]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-2) It was in that moment that he decided to become a paleontologist.

Raised in a [secular Jewish](http://en.wikipedia.org/wiki/Secular_Jewish_culture) home, Gould did not formally practice [religion](http://en.wikipedia.org/wiki/Religion) and preferred to be called an [agnostic](http://en.wikipedia.org/wiki/Agnostic).[[2]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-noma-1) Politically, though he "had been brought up by a [Marxist](http://en.wikipedia.org/wiki/Marxism) father", he has stated that his father's politics were "very different" from his own.[[4]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-SET-3) According to Gould, the most influential political book he read was [C. Wright Mills](http://en.wikipedia.org/wiki/C._Wright_Mills)' [*The Power Elite*](http://en.wikipedia.org/wiki/The_Power_Elite), as well as the political writings of [Noam Chomsky](http://en.wikipedia.org/wiki/Noam_Chomsky).[[5]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-4) Gould continued to be exposed to [progressive](http://en.wikipedia.org/wiki/Progressivism) viewpoints on the politicized campus of [Antioch College](http://en.wikipedia.org/wiki/Antioch_College) in the early 1960s. In the 1970s, Gould joined a left-wing academic organization called "[Science for the People](http://en.wikipedia.org/wiki/Science_for_the_People)." Throughout his career and writings he spoke out against [cultural oppression](http://en.wikipedia.org/wiki/Oppression) in all its forms, especially what he saw as [pseudoscience](http://en.wikipedia.org/wiki/Pseudoscience) in the service of [racism](http://en.wikipedia.org/wiki/Racism) and [sexism](http://en.wikipedia.org/wiki/Sexism).[[6]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-5)

Gould was twice married. His first marriage was to artist Deborah Lee, whom he met while attending [Antioch College](http://en.wikipedia.org/wiki/Antioch_College). They were married on [October 3](http://en.wikipedia.org/wiki/October_3), [1965](http://en.wikipedia.org/wiki/1965). His second marriage was to sculptor [Rhonda Roland Shearer](http://en.wikipedia.org/wiki/Rhonda_Roland_Shearer) in 1995. Gould has two children, Jesse and Ethan, by his first marriage, and two stepchildren, Jade and London, by his second.

In July 1982, Gould was diagnosed with [peritoneal](http://en.wikipedia.org/wiki/Peritoneal) [mesothelioma](http://en.wikipedia.org/wiki/Mesothelioma), a deadly form of cancer affecting the [abdominal lining](http://en.wikipedia.org/wiki/Human_abdomen) and frequently found in people who have been exposed to [asbestos](http://en.wikipedia.org/wiki/Asbestos). After a difficult two-year recovery, Gould published a column for [*Discover magazine*](http://en.wikipedia.org/wiki/Discover_%28magazine%29), titled "The Median Isn't the Message", which discusses his reaction to discovering that [mesothelioma](http://en.wikipedia.org/wiki/Mesothelioma) patients had a [median](http://en.wikipedia.org/wiki/Median) lifespan of only eight months after diagnosis.[[7]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-6) He then describes the true significance behind this number, and his relief upon realizing that [statistical averages](http://en.wikipedia.org/wiki/Statistics) are just useful abstractions, and do not encompass the full range of variation. The [median](http://en.wikipedia.org/wiki/Median) is the halfway point, which means that 50% of patients will die before 8 months, but the other half will live longer, potentially much longer. He then needed to find out where his personal characteristics placed him within this range. Considering the cancer was caught early, the fact he was young, optimistic, and had the best treatments available, Gould figured that he should be in the favorable half of the upper statistical range. After an experimental treatment of [radiation](http://en.wikipedia.org/wiki/Radiation_therapy), [chemotherapy](http://en.wikipedia.org/wiki/Chemotherapy), and [surgery](http://en.wikipedia.org/wiki/Surgery), Gould made a full recovery, and his column became a source of comfort for many cancer patients.

Gould was also an advocate for [medical marijuana](http://en.wikipedia.org/wiki/Medical_cannabis). During this bout with cancer, he smoked the illegal drug to alleviate the nausea associated with his medical treatments. According to Gould, his use of [marijuana](http://en.wikipedia.org/wiki/Cannabis_%28drug%29) had a "most important effect" on his eventual recovery.[[8]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-7) In 1998 he testified in the case of [Jim Wakeford](http://en.wikipedia.org/wiki/Jim_Wakeford), a Canadian medical-marijuana user and activist.

His scientific essays for *Natural History* frequently refer to his nonscientific interests and pastimes. As a boy, he collected [baseball cards](http://en.wikipedia.org/wiki/Baseball_card) and was a huge [baseball](http://en.wikipedia.org/wiki/Baseball) fan throughout his life. As an adult he was fond of [science fiction](http://en.wikipedia.org/wiki/Science_fiction_film) movies, but lamented that so many of them were bad, not just in their science, but in their [storytelling](http://en.wikipedia.org/wiki/Storytelling). He sang in a [madrigal](http://en.wikipedia.org/wiki/Madrigal_%28music%29) choir and was a great aficionado of [Gilbert and Sullivan](http://en.wikipedia.org/wiki/Gilbert_and_Sullivan) [operettas](http://en.wikipedia.org/wiki/Operetta). He collected [rare books](http://en.wikipedia.org/wiki/Rare_books) and old [textbooks](http://en.wikipedia.org/wiki/Textbooks). He traveled often to [Europe](http://en.wikipedia.org/wiki/Europe), usually mixing business with pleasure, and spoke French and German. He admired [Renaissance architecture](http://en.wikipedia.org/wiki/Renaissance_architecture). When discussing the [Judeo-Christian](http://en.wikipedia.org/wiki/Judeo-Christian) tradition, he usually referred to it simply as "Moses." He sometimes alluded ruefully to his tendency to put on weight.[[9]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-8)

Gould died on [May 20](http://en.wikipedia.org/wiki/May_20), [2002](http://en.wikipedia.org/wiki/2002) from a [metastatic](http://en.wikipedia.org/wiki/Metastasis) [adenocarcinoma](http://en.wikipedia.org/wiki/Adenocarcinoma) of the lung, a form of [cancer](http://en.wikipedia.org/wiki/Cancer) which had spread to his brain.[[10]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-HGdies-9) This cancer was unrelated to his abdominal cancer, from which he had fully recovered twenty years earlier. He died in his home "in a bed set up in the library of his [SoHo](http://en.wikipedia.org/wiki/SoHo) loft, surrounded by his wife Rhonda, his mother Eleanor, and the many books he loved."[[11]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-10)

**[] Scientific career**

Gould began his higher education at [Antioch College](http://en.wikipedia.org/wiki/Antioch_College), graduating with an undergraduate degree in [geology](http://en.wikipedia.org/wiki/Geology) in 1963. During this time, he also studied abroad at the [University of Leeds](http://en.wikipedia.org/wiki/University_of_Leeds) in the [United Kingdom](http://en.wikipedia.org/wiki/United_Kingdom).[[12]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-11) After completing his graduate work at [Columbia University](http://en.wikipedia.org/wiki/Columbia_University) in 1967 under the guidance of [Norman Newell](http://en.wikipedia.org/wiki/Norman_D._Newell), he was immediately hired by [Harvard University](http://en.wikipedia.org/wiki/Harvard_University) where he worked until the end of his life (1967–2002). In 1973, Harvard promoted him to Professor of Geology and [Curator](http://en.wikipedia.org/wiki/Curator) of [Invertebrate Paleontology](http://en.wikipedia.org/wiki/Invertebrate_paleontology) at the institution's [Museum of Comparative Zoology](http://en.wikipedia.org/wiki/Museum_of_Comparative_Zoology), and in 1982, Harvard awarded him with the title of [Alexander Agassiz](http://en.wikipedia.org/wiki/Alexander_Agassiz) Professor of Zoology. In 1983, he was awarded fellowship into the [American Association for the Advancement of Science](http://en.wikipedia.org/wiki/American_Association_for_the_Advancement_of_Science), where he later served as president (1999–2001). The AAAS news release cited his "numerous contributions to both scientific progress and the public understanding of science." He also served as president of the Paleontological Society (1985–1986) and the Society for the Study of Evolution (1990–1991). In 1989, Gould was elected into the body of the [National Academy of Sciences](http://en.wikipedia.org/wiki/United_States_National_Academy_of_Sciences). Through 1996–2002 Gould was [Vincent Astor](http://en.wikipedia.org/wiki/Vincent_Astor) Visiting Research Professor of Biology at [New York University](http://en.wikipedia.org/wiki/New_York_University). In 2008, he was posthumously awarded the [Darwin-Wallace Medal](http://en.wikipedia.org/wiki/Darwin-Wallace_Medal), along with 12 other recipients. Until 2008, this medal had been awarded every 50 years by the [Linnean Society of London](http://en.wikipedia.org/wiki/Linnean_Society_of_London); starting in 2009, it will be an annual award.[[13]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-12)

**[] Punctuated equilibrium**

Early in his career, Gould and [Niles Eldredge](http://en.wikipedia.org/wiki/Niles_Eldredge) developed the theory of [punctuated equilibrium](http://en.wikipedia.org/wiki/Punctuated_equilibrium), in which evolutionary change occurs relatively rapidly, as compared to longer periods of relative evolutionary stability.[[14]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-13) According to Gould, punctuated equilibrium revised a key pillar "in the central logic of [Darwinian theory](http://en.wikipedia.org/wiki/Evolution)."[[4]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-SET-3) Some evolutionary biologists have argued that while punctuated equilibrium was "of great interest to biology"[[15]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-14), it merely modified [neo-Darwinism](http://en.wikipedia.org/wiki/Modern_evolutionary_synthesis) in a manner that was fully compatible with what had been known before. [[16]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-PHT-15) Others however emphasized its theoretical novelty, and argued that evolutionary stasis had been "unexpected by most evolutionary biologists" and "had a major impact on paleontology and evolutionary biology."[[17]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-Dynamics-16) Some critics of the theory referred to punctuated equilibrium as "evolution by jerks", a play on words Gould himself joked about.

**[] Evolutionary developmental biology**

Gould contributed to [evolutionary developmental biology](http://en.wikipedia.org/wiki/Evolutionary_developmental_biology), describing "terminal addition", in which an [organism](http://en.wikipedia.org/wiki/Organism) evolves a last stage of individual development by shortening the earlier stages.

**[] Selectionism and sociobiology**

Gould championed biological constraints as well as other non-selectionist forces in evolution. In particular, he considered higher functions of the [human brain](http://en.wikipedia.org/wiki/Human_brain) to be the byproduct of [natural selection](http://en.wikipedia.org/wiki/Natural_selection) and not its selected result. This understanding undermines an essential premise of human [sociobiology](http://en.wikipedia.org/wiki/Sociobiology) and [evolutionary psychology](http://en.wikipedia.org/wiki/Evolutionary_psychology).

**[] Against "Sociobiology"**

In 1975, [E. O. Wilson](http://en.wikipedia.org/wiki/E._O._Wilson) introduced an analysis of human behavior based on a sociobiological construct. In response, Gould, Richard Lewontin, and others from the [Boston](http://en.wikipedia.org/wiki/Boston) area wrote the subsequently well referenced letter to the [New York Review of Books](http://en.wikipedia.org/wiki/New_York_Review_of_Books) "Against 'Sociobiology'" in opposition to this theory, particularly sociobiology's hegemonic support of the notion of a "deterministic view of human society and human action." [[18]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-17)

Gould opposed sociobiology as applied to humans and its descendant evolutionary psychology. Criticizing a genetic explanation for human behaviors, Gould championed the vision of nearly all humans born with the capacity to assume almost any identity, as shaped by social rather than biological forces.

**[] Spandrels and the Panglossian Paradigm**

With [Richard Lewontin](http://en.wikipedia.org/wiki/Richard_Lewontin), Gould wrote an influential 1979 paper entitled "The Spandrels of [San Marco](http://en.wikipedia.org/wiki/St_Mark%27s_Basilica) and the [Panglossian](http://en.wikipedia.org/wiki/Pangloss) [Paradigm](http://en.wikipedia.org/wiki/Paradigm)"[[19]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-18), which introduced the architectural term "[spandrel](http://en.wikipedia.org/wiki/Spandrel_%28biology%29)" into evolutionary biology.

A spandrel is the space that exists between arches, as seen particularly in [gothic churches](http://en.wikipedia.org/wiki/Gothic_architecture). When visiting [Venice](http://en.wikipedia.org/wiki/Venice), Gould noted that the spandrels of the San Marco [cathedral](http://en.wikipedia.org/wiki/Cathedral), while quite beautiful, were not a space that was planned by the architect, but rather coincidentally resulted from what the architects deliberately designed—the arches. Gould and Lewontin thus defined "spandrels" in evolutionary biology to mean a feature of an organism that arises as a necessary side consequence of other features, but which is not built directly, piece by piece, as a result of being favored by natural selection. Examples include the "masculinized genitalia in female hyenas, exaptive use of an umbilicus as a brooding chamber by snails, the shoulder hump of the giant Irish deer, and several key features of human mentality."[[20]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-19)

In Voltaire's [*Candide*](http://en.wikipedia.org/wiki/Candide), Dr. [Pangloss](http://en.wikipedia.org/wiki/Pangloss) is a clueless [scholar](http://en.wikipedia.org/wiki/Scholar) who, despite the evidence, says that "all is for the best in this best of all possible worlds." Gould and Lewontin asserted that it is "Panglossian" for evolutionary biologists to view all biological traits as things that had been naturally selected for specifically. Gould and Lewontin argued that some traits were coincidental "spandrels." The relative frequency of spandrels, so defined, versus adaptive features in nature, remains a controversial topic in [evolutionary biology](http://en.wikipedia.org/wiki/Evolutionary_biology).[[21]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-20)

**[] Land snails**

Most of Gould's empirical research pertained to land snails. He focused his early work on the [Bermudian](http://en.wikipedia.org/wiki/Bermuda) genus [*Poecilozonites*](http://en.wikipedia.org/wiki/Bermuda_Land_Snail), while his later work concentrated on the [West Indian](http://en.wikipedia.org/wiki/Caribbean) genus [*Cerion*](http://en.wikipedia.org/wiki/Cerion). According to Gould "*Cerion* is the land snail of maximal diversity in form throughout the entire world. There are 600 described species of this single genus. In fact, they're not really species, they all interbreed, but the names exist to express a real phenomenon which is this incredible morphological diversity. Some are shaped like golf balls, some are shaped like pencils.…Now my main subject is the evolution of form, and the problem of how it is that you can get this diversity amid so little genetic difference, so far as we can tell, is a very interesting one. And if we could solve this we'd learn something general about the evolution of form."[[22]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-21)

**[] Influence**

Gould is also one of the most highly cited scientists in the field of evolutionary theory. His 1979 "spandrels" paper has been cited more than 1,600 times. In *Palaeobiology*—the flagship journal of his own speciality—only [Charles Darwin](http://en.wikipedia.org/wiki/Charles_Darwin) and [G.G. Simpson](http://en.wikipedia.org/wiki/G.G._Simpson) have been cited more often.[[23]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-22) Gould was also a considerably respected historian of science. Historian [Ronald Numbers](http://en.wikipedia.org/wiki/Ronald_Numbers) has been quoted as saying: "I can't say much about Gould's strengths as a scientist, but for a long time I've regarded him as the second most influential historian of science (next to [Thomas Kuhn](http://en.wikipedia.org/wiki/Thomas_Kuhn))."[[24]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-23)

**[] *The Structure of Evolutionary Theory***

Shortly before his death, Gould published a long treatise recapitulating his version of modern evolutionary theory: [*The Structure of Evolutionary Theory*](http://en.wikipedia.org/wiki/The_Structure_of_Evolutionary_Theory) (2002).

**[] As a public figure**

Gould became widely known through his popular science essays in [*Natural History*](http://en.wikipedia.org/wiki/Natural_History_%28magazine%29) magazine and his [best-selling](http://en.wikipedia.org/wiki/Bestseller) [books](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#Books) on [evolution](http://en.wikipedia.org/wiki/Evolution). Many of his essays were reprinted in collected volumes, such as [*Ever Since Darwin*](http://en.wikipedia.org/wiki/Ever_Since_Darwin) and [*The Panda's Thumb*](http://en.wikipedia.org/wiki/The_Panda%27s_Thumb_%28book%29), while his popular treatises included books such as [*The Mismeasure of Man*](http://en.wikipedia.org/wiki/The_Mismeasure_of_Man), [*Wonderful Life*](http://en.wikipedia.org/wiki/Wonderful_Life_%28book%29) and [*Full House*](http://en.wikipedia.org/wiki/Full_House:_The_Spread_of_Excellence_From_Plato_to_Darwin).

A passionate advocate of evolutionary theory, Gould wrote prolifically on the subject, trying to communicate his understanding of contemporary evolutionary biology to a wide audience. A recurring theme in his writings is the history and development of evolutionary, and pre-evolutionary, [thought](http://en.wikipedia.org/wiki/History_of_evolutionary_thought). He was also an enthusiastic [baseball](http://en.wikipedia.org/wiki/Baseball) fan and made frequent references to the sport in his essays.[[25]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-24)

Although a proud Darwinist, his emphasis was less [gradualist](http://en.wikipedia.org/wiki/Gradualism) and [reductionist](http://en.wikipedia.org/wiki/Reductionism) than most [neo-Darwinists](http://en.wikipedia.org/wiki/Neo-Darwinism). He fiercely opposed many aspects of [sociobiology](http://en.wikipedia.org/wiki/Sociobiology) and its intellectual descendant [evolutionary psychology](http://en.wikipedia.org/wiki/Evolutionary_psychology). He devoted considerable time to fighting against [creationism](http://en.wikipedia.org/wiki/Creationism) (and the related constructs [Creation science](http://en.wikipedia.org/wiki/Creation_science) and [Intelligent design](http://en.wikipedia.org/wiki/Intelligent_design)). Most notably, Gould provided expert testimony against the equal-time creationism law in [*McLean v. Arkansas*](http://en.wikipedia.org/wiki/McLean_v._Arkansas). Gould later developed the term "Non-Overlapping Magisteria" (NOMA) to describe how, in his view, science and religion could not comment on each other's realm. Gould went on to develop this idea in some detail, particularly in the books *Rocks of Ages* (1999) and *The Hedgehog, the Fox, and the Magister's Pox* (2003). In a 1982 essay for *Natural History* Gould wrote:

Our failure to discern a universal good does not record any lack of insight or ingenuity, but merely demonstrates that nature contains no moral messages framed in human terms. Morality is a subject for philosophers, theologians, students of the humanities, indeed for all thinking people. The answers will not be read passively from nature; they do not, and cannot, arise from the data of science. The factual state of the world does not teach us how we, with our powers for good and evil, should alter or preserve it in the most ethical manner.[[26]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-25)

The anti-evolution petition [*A Scientific Dissent From Darwinism*](http://en.wikipedia.org/wiki/A_Scientific_Dissent_From_Darwinism) spawned the [National Center for Science Education](http://en.wikipedia.org/wiki/National_Center_for_Science_Education)'s 'anti-petition', [Project Steve](http://en.wikipedia.org/wiki/Project_Steve), which is named in Gould's honor.

Gould also became a noted public face of science, often appearing on [television](http://en.wikipedia.org/wiki/Television). He once voiced a cartoon version of himself on the season nine [*Simpsons*](http://en.wikipedia.org/wiki/The_Simpsons) episode [Lisa the Skeptic](http://en.wikipedia.org/wiki/Lisa_the_Skeptic), in which Lisa finds a skeleton that many people think is that of an angel that predicts the end of the world, but ends up being part of a marketing ploy for a new mall.[[27]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-26) The show paid tribute to Gould after his death, dedicating the season 13 finale "[Papa's Got a Brand New Badge](http://en.wikipedia.org/wiki/Papa%27s_Got_a_Brand_New_Badge)" to his memory.

Gould was also featured prominently as a guest in [Ken Burns'](http://en.wikipedia.org/wiki/Ken_Burns) [PBS](http://en.wikipedia.org/wiki/PBS) documentary [*Baseball*](http://en.wikipedia.org/wiki/Baseball_%28documentary%29), [PBS's](http://en.wikipedia.org/wiki/PBS) [*Evolution*](http://en.wikipedia.org/wiki/Evolution_%28TV_series%29) series, [CNN's](http://en.wikipedia.org/wiki/CNN) [*Crossfire*](http://en.wikipedia.org/wiki/Crossfire_%28TV_series%29), [NBC's](http://en.wikipedia.org/wiki/NBC) [*The Today Show*](http://en.wikipedia.org/wiki/Today_%28NBC_program%29), and was a guest in all seven episodes of the Dutch '90s talkshow-series "Een Schitterend Ongeluk", or in English, "A Marvellous Accident." He was also on the Board of Advisers to the influential [Children's Television Workshop](http://en.wikipedia.org/wiki/Children%27s_Television_Workshop) television show, [3-2-1 Contact](http://en.wikipedia.org/wiki/3-2-1_Contact), where he made frequent guest appearances.

**[] Controversies**

Gould received many accolades for his scholarly work and popular expositions of natural history,[[10]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-HGdies-9)[[28]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-27) but was not immune from criticism by those in the biological community who felt his public presentations were, for various reasons, out of step with mainstream evolutionary theory.[[29]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-28) The public debates between Gould's proponents and detractors have been so quarrelsome that they have been dubbed "The Darwin Wars" by several commentators.[[30]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-29)[[31]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-30)[[32]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-31)[[33]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-32)

[John Maynard Smith](http://en.wikipedia.org/wiki/John_Maynard_Smith), an eminent British evolutionary biologist, was among Gould's strongest critics. Maynard Smith thought that Gould misjudged the vital role of adaptation in biology, and was also critical of Gould's acceptance of [species selection](http://en.wikipedia.org/wiki/Unit_of_selection) as a major component of biological evolution.[[34]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-33) In a review of [Daniel Dennett](http://en.wikipedia.org/wiki/Daniel_Dennett)'s book [*Darwin's Dangerous Idea*](http://en.wikipedia.org/wiki/Darwin%27s_Dangerous_Idea), Maynard Smith wrote that Gould "is giving non-biologists a largely false picture of the state of evolutionary theory."[[35]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-34) But Maynard Smith has not been consistently negative, writing in a review of [*The Panda's Thumb*](http://en.wikipedia.org/wiki/The_Panda%27s_Thumb_%28book%29) that "Stephen Gould is the best writer of popular science now active. . . . Often he infuriates me, but I hope he will go right on writing essays like these."[[36]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-35) Maynard Smith was also among those who welcomed Gould's reinvigoration of evolutionary paleontology.[[16]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-PHT-15)

One reason for such criticism was that Gould appeared to be presenting his ideas as a revolutionary way of understanding evolution, and he argued for the importance of mechanisms other than [natural selection](http://en.wikipedia.org/wiki/Natural_selection), mechanisms which he believed had been sidelined by other researchers. As a result, many non-specialists sometimes inferred from his early writings that Darwinian explanations had been proven to be unscientific (which Gould never tried to imply). Along with many other researchers in the field, Gould's works were sometimes deliberately taken out of context by [creationists](http://en.wikipedia.org/wiki/Creationism) as a "proof" that scientists no longer understood how organisms evolved. [[37]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-Wright1999-36) Gould himself corrected some of these misinterpretations and distortions of his writings in later works.[[38]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-37).

**[] Opposition to sociobiology and evolutionary psychology**

Gould also had a long-running public feud with [E. O. Wilson](http://en.wikipedia.org/wiki/E._O._Wilson) and other evolutionary biologists over [human sociobiology](http://en.wikipedia.org/wiki/Sociobiology) and its descendant [evolutionary psychology](http://en.wikipedia.org/wiki/Evolutionary_psychology), which Gould, Lewontin, and Maynard Smith opposed, but which [Richard Dawkins](http://en.wikipedia.org/wiki/Richard_Dawkins), [Daniel Dennett](http://en.wikipedia.org/wiki/Daniel_Dennett), and [Steven Pinker](http://en.wikipedia.org/wiki/Steven_Pinker) advocated. Gould and Dawkins also disagreed over the importance of [gene selection](http://en.wikipedia.org/wiki/Gene_selection) in evolution. Dawkins argued that evolution is best understood as competition among genes (or replicators), while Gould advocated the importance of multi-level competition, including selection amongst [genes](http://en.wikipedia.org/wiki/Transposon), [cell lineages](http://en.wikipedia.org/wiki/Cell_%28biology%29), [organisms](http://en.wikipedia.org/wiki/Organism), [demes](http://en.wikipedia.org/wiki/Deme_%28biology%29), [species](http://en.wikipedia.org/wiki/Species), and [clades](http://en.wikipedia.org/wiki/Clade). Criticism of Gould can be found in chapter 9 of Dawkins' [*The Blind Watchmaker*](http://en.wikipedia.org/wiki/The_Blind_Watchmaker) and chapter 10 of Dennett's [*Darwin's Dangerous Idea*](http://en.wikipedia.org/wiki/Darwin%27s_Dangerous_Idea). Dennett's criticism has tended to be harsher, while Dawkins praises Gould in evolutionary topics other than those of contention. Pinker accuses Gould, [Lewontin](http://en.wikipedia.org/wiki/Richard_Lewontin) and other opponents of evolutionary psychology of being "radical scientists", whose stance on human nature is influenced by politics rather than science.[[39]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-38) Gould contended that sociobiologists and evolutionary psychologists are often heavily influenced, perhaps unconsciously, by their own prejudices and interests. [[40]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-Gould1997-39) He wrote:

I grew up in a family with a tradition of participation in campaigns for social justice, and I was active, as a student, in the civil rights movement at a time of great excitement and success in the early 1960s. Scholars are often wary of citing such committments. …[but] it is dangerous for a scholar even to imagine that he might attain complete neutrality, for then one stops being vigilant about personal preferences and their influences - and then one truly falls victim to the dictates of prejudice. Objectivity must be operationally defined as fair treatment of data, not absence of preference.[[41]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-40)

**[] Cambrian fauna**

Gould's interpretation of the [Cambrian](http://en.wikipedia.org/wiki/Cambrian) [Burgess Shale](http://en.wikipedia.org/wiki/Burgess_Shale) fossils in his book [*Wonderful Life*](http://en.wikipedia.org/wiki/Wonderful_Life_%28book%29) emphasized the striking morphological disparity (or "weirdness") of the Burgess Shale fauna, and the role of chance in determining which members of this fauna survived and flourished. He used the Cambrian fauna as an example of the role of [contingency](http://en.wikipedia.org/wiki/Contingency) in the broader pattern of evolution.

Gould's view was criticized by [Simon Conway Morris](http://en.wikipedia.org/wiki/Simon_Conway_Morris) in his 1998 book *The Crucible Of Creation*. [[42]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-Conway1998-41) Conway Morris stressed those members of the Cambrian fauna that resemble modern taxa. He also promoted [convergent evolution](http://en.wikipedia.org/wiki/Convergent_evolution) as a mechanism producing similar forms to similar environmental circumstances, and argued in a subsequent book that the appearance of human-like animals is likely. Paleontologists [Derek Briggs](http://en.wikipedia.org/wiki/Derek_Briggs) and [Richard Fortey](http://en.wikipedia.org/wiki/Richard_Fortey) have also argued that much of the Cambrian fauna may be regarded as [stem groups](http://en.wikipedia.org/wiki/Stem_group) of living taxa[[43]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould" \l "cite_note-42" \o "), though this is still a subject of intense research and debate, and the relationship of many Cambrian taxa to modern phyla has not been established in the eyes of many palaeontologists.

Paleontologist [Richard Fortey](http://en.wikipedia.org/wiki/Richard_Fortey) noted that prior to the release of [*Wonderful Life*](http://en.wikipedia.org/wiki/Wonderful_Life_%28book%29), Conway Morris shared many of Gould's sentiments and views. It was only after publication of [*Wonderful Life*](http://en.wikipedia.org/wiki/Wonderful_Life_%28book%29) that Conway Morris revised his interpretation and adopted a more [progressive](http://en.wikipedia.org/wiki/Evolutionary_progress) stance towards the history of life.[[44]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-43).

**[] *Mismeasure of Man***

*Main article:* [*The Mismeasure of Man*](http://en.wikipedia.org/wiki/The_Mismeasure_of_Man)

Stephen Jay Gould was also the author of [*The Mismeasure of Man*](http://en.wikipedia.org/wiki/The_Mismeasure_of_Man) (1981), a [history](http://en.wikipedia.org/wiki/History_of_science) and [skeptical inquiry](http://en.wikipedia.org/wiki/Scientific_skepticism) of [psychometrics](http://en.wikipedia.org/wiki/Psychometrics) and [intelligence testing](http://en.wikipedia.org/wiki/Intelligence_quotient). Gould investigated nineteenth century [craniometry](http://en.wikipedia.org/wiki/Craniometry), as well as modern-day [psychological testing](http://en.wikipedia.org/wiki/Intelligence_quotient), and claimed that they developed from an unfounded faith in [biological determinism](http://en.wikipedia.org/wiki/Biological_determinism). It was reprinted in 1996 with the addition of a new foreword, plus a review and critique of *The Bell Curve*.

*The Mismeasure of Man* has generated perhaps the greatest controversy of all of Gould's books, and has received both widespread praise (by [skeptics](http://en.wikipedia.org/wiki/Debunker)) and extensive criticism (by certain [psychologists](http://en.wikipedia.org/wiki/Psychology)), including claims of misrepresentation by some scientists.[[45]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-Jensen1982-44)

**[] Nonoverlapping Magisteria (NOMA)**

In his book [*Rocks of Ages*](http://en.wikipedia.org/wiki/Rocks_of_Ages_%28book%29) (1999), Gould put forward what he described as "a blessedly simple and entirely conventional resolution to ... the supposed conflict between science and religion."[[46]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-RoA-45) He defines the term *magisterium* as "a domain where one form of teaching holds the appropriate tools for meaningful discourse and resolution"[[46]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-RoA-45) and the NOMA principle is "the magisterium of science covers the empirical realm: what the Universe is made of (fact) and why does it work in this way (theory). The magisterium of religion extends over questions of ultimate meaning and moral value. These two magisteria do not overlap, nor do they encompass all inquiry (consider, for example, the magisterium of art and the meaning of beauty)."[[46]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-RoA-45)

In his view, "Science and religion do not glower at each other...[but] interdigitate in patterns of complex fingering, and at every [fractal](http://en.wikipedia.org/wiki/Fractal) scale of [self-similarity](http://en.wikipedia.org/wiki/Self-similarity)."[[46]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-RoA-45) He suggests, with examples, that "NOMA enjoys strong and fully explicit support, even from the primary cultural stereotypes of hard-line traditionalism" and that it is "a sound position of general consensus, established by long struggle among people of goodwill in both magisteria."[[46]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-RoA-45)

Also in 1999, the [National Academy of Sciences](http://en.wikipedia.org/wiki/United_States_National_Academy_of_Sciences) adopted a similar stance. Its publication *Science and Creationism* stated that "Scientists, like many others, are touched with awe at the order and complexity of nature. Indeed, many scientists are deeply religious. But science and religion occupy two separate realms of human experience. Demanding that they be combined detracts from the glory of each."[[47]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-46)

[Richard Dawkins](http://en.wikipedia.org/wiki/Richard_Dawkins) has criticized the NOMA principle on the grounds that religion does not, and cannot, steer clear of the material scientific matters that Gould considers outside religion's scope. Dawkins argues that "[a] universe with a supernatural presence would be a fundamentally and qualitatively different kind of universe from one without. [...] Religions make existence claims, and this means scientific claims." These "existence claims" include miracles such as the Catholic [Assumption of Mary](http://en.wikipedia.org/wiki/Assumption_of_Mary): whether Mary's body decayed when she died or was physically lifted to Heaven is a material fact, and thus outside the moral magisterium to which NOMA would limit religion. [[48]](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_note-47)

**[] Books**

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**[] Notes**

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Awards include a National Book Award for *The Panda’s Thumb*, a National Book Critics Circle Award for *The Mismeasure of Man*, the Phi Beta Kappa Book Award for *Hen’s Teeth and Horse’s Toes*, and a Pulitzer Prize Finalist for *Wonderful Life*, on which Gould commented `close but, as they say, no cigar’. Forty-four honorary degrees and 66 major fellowships, medals, and awards bear witness to the depth and scope of his accomplishments in both the sciences and humanities: Member of the National Academy of Sciences, President and Fellow of AAAS, MacArthur Foundation ‘genius’ Fellowship (in the first group of awardees), Humanist Laureate from the Academy of Humanism, Fellow of the Linnean Society of London, Fellow of the Royal Society of Edinburgh, Fellow of the American Academy of Arts and Sciences, Fellow of the European Union of Geosciences, Associate of the Muséum National D’Histoire Naturelle Paris, the Schuchert Award for excellence in paleontological research, Scientist of the Year from *Discover* magazine, the Silver Medal from the Zoological Society of London, the Gold Medal for Service to Zoology from the Linnean Society of London, the Edinburgh Medal from the City of Edinburgh, the Britannica Award and Gold Medal for dissemination of public knowledge, Public Service Award from the Geological Society of America, Anthropology in Media Award from the American Anthropological Association, Distinguished Service Award from the National Association of Biology Teachers, Distinguished Scientist Award from UCLA, the Randi Award for Skeptic of the Year from the Skeptics Society, and a *Festschrift* in his honour at Caltech.

1. [**^**](http://en.wikipedia.org/wiki/Stephen_Jay_Gould#cite_ref-28) Leda Cosmides and John Tooby (1997) write:

John Maynard Smith, one of the world's leading evolutionary biologists, recently summarized in the NYRB the sharply conflicting assessments of Stephen Jay Gould: "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." (NYRB, Nov. 30th 1995, p. 46). No one can take any pleasure in the evident pain Gould is experiencing now that his actual standing within the community of professional evolutionary biologists is finally becoming more widely known. . . But as Maynard Smith points out, more is at stake. Gould "is giving non-biologists a largely false picture of the state of evolutionary theory"—or as Ernst Mayr says of Gould and his small group of allies—they "quite conspicuously misrepresent the views of [biology's] leading spokesmen." Indeed, although Gould characterizes his critics as "anonymous" and "a tiny coterie", nearly every major evolutionary biologist of our era has weighed in a vain attempt to correct the tangle of confusions that the higher profile Gould has inundated the intellectual world with.\* The point is not that Gould is the object of some criticism—so properly are we all—it is that his reputation as a credible and balanced authority about evolutionary biology is non-existent among those who are in a professional position to know. \*These include [Ernst Mayr](http://en.wikipedia.org/wiki/Ernst_Mayr), [John Maynard Smith](http://en.wikipedia.org/wiki/John_Maynard_Smith), [George Williams](http://en.wikipedia.org/wiki/George_C._Williams), [Bill Hamilton](http://en.wikipedia.org/wiki/W._D._Hamilton), [Richard Dawkins](http://en.wikipedia.org/wiki/Richard_Dawkins), [E.O. Wilson](http://en.wikipedia.org/wiki/E._O._Wilson), [Tim Clutton-Brock](http://en.wikipedia.org/wiki/Tim_Clutton-Brock), [Paul Harvey](http://en.wikipedia.org/wiki/Paul_H._Harvey), [Brian Charlesworth](http://en.wikipedia.org/wiki/Brian_Charlesworth), [Jerry Coyne](http://en.wikipedia.org/wiki/Jerry_Coyne), [Robert Trivers](http://en.wikipedia.org/wiki/Robert_Trivers), John Alcock, Randy Thornhill, and many others.

It should be noted that Ernst Mayr in this quotation is not speaking of Gould in particular, and does not mention him by name, but is speaking of many critics of the Neo-Darwinian Synthesis generally. Some of the names Tooby and Cosmides cite are also quite debatable—Mayr, Williams, Hamilton, Dawkins, Wilson, Coyne, and Trivers, for example, have shown great respect for Gould as a scientist. In reference to Maynard Smith's comments, Gould writes ["Darwinian Fundamentalism"](http://www.nybooks.com/articles/1151) *New York Review of Books* 44 (June 12, 1997): 34-37:

A false fact can be refuted, a false argument exposed; but how can one respond to a purely ad hominem attack? This harder, and altogether more discouraging, task may best be achieved by exposing internal inconsistency and unfairness of rhetoric. . . . It seems futile to reply to an attack so empty of content, and based only on comments by anonymous critics . . . Instead of responding to Maynard Smith's attack against my integrity and scholarship, citing people unknown and with arguments unmentioned, let me, instead, merely remind him of the blatant inconsistency between his admirable past and lamentable present. Some sixteen years ago he wrote a highly critical but wonderfully supportive review of my early book of essays, *The Panda's Thumb*, stating: "I hope it will be obvious that my wish to argue with Gould is a compliment, not a criticism." He then attended my series of Tanner Lectures at Cambridge in 1984 and wrote in a report for *Nature*, and under the remarkable title "Paleontology at the High Table", the kindest and most supportive critical commentary I have ever received. He argued that the work of a small group of American paleobiologists had brought the entire subject back to theoretical centrality within the evolutionary sciences. . . . So we face the enigma of a man who has written numerous articles, amounting to tens of thousands of words, about my work—always strongly and incisively critical, always richly informed (and always, I might add, enormously appreciated by me). But now Maynard Smith needs to canvass unnamed colleagues to find out that my ideas are "hardly worth bothering with." He really ought to be asking himself why he has been bothering about my work so intensely, and for so many years.

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**[] External links**

* [The Unofficial Stephen Jay Gould Archive](http://www.stephenjaygould.org)
* [Excerpts from Gould Lectures at Stanford University](http://prelectur.stanford.edu/lecturers/gould/)
* [Richard C. Lewontin sums up Gould's career in an obituary](http://www.findarticles.com/p/articles/mi_m1132/is_6_54/ai_94142087)
* ["Darwinian Fundamentalism"](http://www.nybooks.com/articles/1151) - Gould's response to Daniel Dennett and other critics
* [McLean v. Arkansas Creationism Trial](http://www.antievolution.org/projects/mclean/new_site/pf_trans/mva_tt_p_gould.html) - Plaintiff's transcript of Gould's testimony
* [Stephen Jay Gould](http://www.charlierose.com/guests/stephen-gould) [*Charlie Rose*](http://en.wikipedia.org/wiki/Charlie_Rose_%28talk_show%29) interviews