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Lamarck, Giraffes, and the Sermon on the Mount

Michael F. Whiting


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Reviewed by Michael F. Whiting

I have always been pleased that members of The Church of Jesus Christ of Latter-day Saints have not felt it necessary to hop on the bandwagon of some fundamentalist Christian groups which publish outlandish creationist literature. Generally speaking, the poverty of scholarship demonstrated in these publications is only rivaled by that of most anti-Mormon publications. Unfortunately, the old creationist arguments have been resurrected and placed in a book with "Book of Mormon" in its title, which gives the book a sense of authenticity that the other creationist books lack.

The author attributes the impetus for writing this book to a statement by President Benson:

Our family may be corrupted by worldly trends and teachings unless we know how to use the book [of Mormon] to expose and combat the falsehoods in socialism, organic evolution, rationalism, humanism, etc. (p. I)

The author undertakes to dismantle evolutionary theory with little regard to the qualifying word in President Benson's statement: falsehoods. There is no doubt in my mind that there are falsehoods in evolutionary theory; scientific theories are generally in need of revision and correction. My purpose as a reviewer, however, is to judge whether the author has been fair in his presentation of the evidence on the issue and whether this evidence supports the arguments he makes. I will first critique the "scientific" arguments constructed by Peterson and then point out flaws in his theologically based arguments.

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1 For purposes of this review, I use the term "creationist" to refer to the belief that all organisms were generated in separate and independent acts of creation by a Supreme Being.
The author has not remained true to his title since roughly the last 100 pages consist of evolution bashing from a framework independent of Book of Mormon or other scriptural sources. He uses arguments that he considers scientific, which are based on misunderstandings of the nature of science and the manner in which science operates; these are simply a rehash of arguments found in any creationist literature.

Some of the touchstones for judging the scholarship of any book that attempts to "combat" anything else are the depth of the author's understanding of alternative positions, the reliability of sources brought into play, fairness in presenting all positions, and the author's ability to weigh conflicting evidence. Peterson's work fails on all accounts. Misstatements of fact and theory occur on almost every page and would be too tedious to deal with individually. Out of roughly 100 sources cited, only six originate from the biological literature, and the author seems blissfully unaware that even these are now mostly outdated. Indeed, the conspicuous absence of even the most basic recent works on evolutionary theory is troublesome. The majority of the author's understanding of evolutionary theory appears to have been derived from watching television programs and reading

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2 Most of the author's "scientific" arguments are found on pages 68–139. In these seventy-two pages, I counted sixty-nine errors in the author's presentation of biological evidence and scientific theory (0.96 errors/page). The pages on which I found no errors are 72, 82, 91–92, 94, 97, 102–3, 108–9, 113–27, 133, and 135. Except for pages 72 and 82, the remaining pages listed consist almost entirely of the author's paraphrasing of numerous PBS television programs (I am assuming he has represented the programs fairly and accurately). If we only count those pages containing the author's own arguments and discussion, the statistic becomes 69 errors/47 pages (1.46 errors/page).

3 A rather humorous mistake is made on page 78 where, in reference to a phylogenetic (genealogical) tree, the author states: "This chart doesn't follow Mayr's definition, because the lines converge, instead of becoming more separated." The author's statement is correct if you read the tree upside down! If, however, you read from the root to the tips (as is standard in biology), the lines diverge according to Mayr's definition.

creationist literature. These sources can hardly be expected to represent accurately a very large body of theory and certainly cannot be considered authoritative references for the theory of evolutionary biology.

Peterson’s definitions of evolution are incorrect. Initially he adheres to a definition taken from Webster’s Dictionary: “[evolution is] a process of continuous change from a lower or simpler to a higher or more complex state” (p. 14). Later, under his description of what he terms the “evolution model,” the author states that “all events must occur at random by natural processes without purpose, directions, or goals” (p. 68) and “it is the evolutionary concept that everything happened by chance” (p. 31). These definitions are not only outdated, the second two contradict the first! The currently accepted definition of evolution—which has been around for at least thirty years—is entirely absent from the book.

The author demonstrates confusion over the manner in which science operates when he concludes that “since evolution is a dogmatic religious belief based on faith, not scientific evidence, it should be excluded from the science curriculum” (p. 153). He states that the observations evolution makes are not

5 This is mentioned in the preface and confirmed by the forty-six pages (pp. 90–135) devoted chiefly to paraphrasing these programs; seventeen programs are cited in the bibliography.

6 I counted eighty-three citations from twelve creationist sources, as contrasted with twelve citations from six sources found in the standard biological literature.

7 Evolution is currently defined as the change in frequency of some characteristic in a population of organisms over time. There is no a priori prescribed direction for this change and the change is influenced by some factors which have random properties (e.g., generation of variation, genetic drift) and some which are more deterministic (e.g., natural selection). See Futuyma, Evolutionary Biology, 551; Daniel L. Hartl and Andrew G. Clark. Principles of Population Genetics (Sunderland: Sinauer, 1980), 1–2.

8 He naively writes: “Actually, in most fields of science, there isn’t a lot of controversy. It is only in areas where science is used in an attempt to prove there is no Supreme Being” (pg. 178). Clearly he has never had contact with science.

9 Along similar lines, I have never understood the argument that since creationism is somehow a scientific alternative to an evolutionary explanation, it should therefore be taught side by side with evolution in the science classroom. Even if we accept it as an alternative, why is it assumed that it is the Judeo-Christian version of creation that should be taught? To
"repeatable, confirmable, and subject to test and rejection" (p. 158). He asserts that scientists must use faith to accept the assumption that evolution is true (p. 79). These statements are false.

Regardless of a quote originating from Mayr (taken out of context, and which few biologists hold to now anyway), evolutionary biologists do not a priori assume that evolution is true. It is important in science to distinguish between a phenomenon and the theory that attempts to explain the phenomenon. A falling apple is a phenomenon, gravity is an explanation of the phenomenon. Even if gravity is not true, apples still fall. In evolutionary biology, the phenomenon of interest is the hierarchic system of similarities between organisms. To biologists, hierarchy among organisms is as obvious and basic an observation as falling objects are to physicists.10 The only assumption made is that this hierarchy of similarity is due to a hierarchy of relationship. This assumption is reasonable, especially with our knowledge of heredity, and is testable.11 Evolutionary theory tries to describe the processes and the important features which may have given rise to the pattern we observe in nature. These process explanations are also testable.12 Even if the current mechanistic explanations are wrong, the original observation of hierarchy still stands and invites scientific explanation. In science there is never a theory devoid of assumptions, so it becomes a matter

my knowledge, every culture—Buddhist, Hindu, Polynesian, etc.—has its own version of creation and if we teach the Judeo-Christian version we must, by the same argument, teach all other versions. And while this would indeed be interesting, it would not be science.

10 The majority of evidence for hierarchy among organisms comes from observations of extant species, not extinct species. Likewise, the overwhelming majority of data used to test models of evolution are based on living species. Hence the author's criticisms of paleontological methods (e.g., radiocarbon dating, lack of key fossils, etc.), even if they were accurate, do little to alter the observation of hierarchy and its evolutionary explanation.


of finding a theory whose predictions and explanations can be tested in a scientific framework. The author’s assertions that evolutionary biology is nonscientific are without support or substance.

Unfortunately, the author perpetuates in his book the common misconception that evolutionary theory is somehow unique among scientific theories in that it is based on the assumption that there is no God (p. 68). But God is no more absent from evolution than he is from physics or chemistry or any other science. His absence is a methodological constraint of all sciences since his presence cannot be proved or disproved in any scientific setting. Most evolutionary biologists follow the Popperian philosophy of science which states that a hypothesis is scientific only if the possibility of falsification exists. Thus the statements that “God exists” and “God designed the earth” are not scientific (which has nothing to do with their truth) since there are no data one can collect which would refute these statements. While it is true that some scientists have overstepped the bounds of their data to claim that they have discovered that there is no God (and this certainly is not restricted to just evolutionary biologists or even just scientists), there is nothing in the theory of evolution which requires one to deny or even doubt the existence of God.

Theological Arguments

Peterson’s theologically based arguments can be divided into three types. The first is an authoritarian approach by which he reiterates statements made by General Authorities concerning evolution. While he includes some important statements made by those who opposed evolution, he has omitted statements by other General Authorities who were more open to the possibility

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14 Since all scientific theories are of necessity constructed independent of the notion that God exists, it is a truism that science can conclude nothing regarding the existence of God. Likewise, the well-supported doctrine that God is Creator can do nothing to either prove or disprove evolutionary theory. Even if all scientists believed in God as Creator, evolutionary biology could operate no differently than it does now. This is simply a limitation of science, not a conspiracy of biologists.
of an evolutionary process of some sort.\textsuperscript{15} It is unfortunate that the author did not completely review all statements, since it would be interesting to compare them side by side.

In the second type of theological argument, the author (mis)states a principle of evolution and then quotes a scripture which he feels demonstrates the inconsistency of that principle with scripture. In order for this type of argument to hold any weight it is essential that (1) the scientific principle be presented accurately, (2) the scripture be interpreted within reasonable bounds as usually set by context, (3) the applicability of the scripture to the principle be demonstrated, and (4) a direct conflict between the principle and scripture be established. Unfortunately, none of the author's arguments meets all four criteria.

For example, the author sets out to prove that "Lyell's theory [of uniformitarianism] is a snare of the adversary" (p. 60). The author is mistaken, however, since uniformitarianism is a principle of reasoning, not a scientific theory open to testing. The principle of uniformity was based on the steady-state worldview proposed by Hutton and later championed by Lyell "because the catastrophists all too often had been tempted to invoke mysterious past causes instead of trying to work out a natural explanation."\textsuperscript{16} This principle states that the patterns and processes we observe today are scientifically our best indicator of the patterns and processes of the past (or the future).\textsuperscript{17} The author misunderstands the principle and argues against it. His


\textsuperscript{17} With a little reflection, we can see that this principle is a methodological necessity of all science. If we assert that an apple falling today tells us nothing about whether apples fell yesterday or will fall tomorrow, then our science can have no predictive power, no ability to refute hypotheses, and would never get anywhere because the investigator would have to confirm every morning that an apple still falls.
logic is as follows: uniformitarianism means that “events on the earth happen at a uniform rate” (p. 13); thus, “world-wide catastrophes are out of the question” (p. 54). The scriptures record and prophesy of world-wide catastrophes (pp. 13, 47-50), and therefore uniformitarianism is false (p. 60). But the principle of uniformity never states that world-wide catastrophes were impossible, only that they are infrequent, which fact history and the scriptures also document.\footnote{Even evolutionary biology still adheres to some catastrophic explanations. For example see L. Alvarez, W. Alvarez, F. Asaro, and H. V. Michel, “Extraterrestrial Cause for the Cretaceous-Tertiary Extinction,” Science 208 (1980): 1095-108.}

In another example, Peterson rejects Lamarckism—the belief that an organism can modify physical traits through exertion (a notion long abandoned since Darwin)—by citing the famous example of the giraffe which, according to Lamarck, increased the length of its neck by stretching to eat leaves high in the trees. Peterson then quotes from the Sermon on the Mount: “which of you by taking thought can add one cubit to his stature.” His conclusion: “If we can’t make ourselves taller, neither could a giraffe” (p. 51). I strongly doubt—and I think most Bible commentators would back me up on this one—that the thrust of the Lord’s sermon was directed towards biologists as a lecture on an organism’s ability to modify traits through time. The author fails to justify his unique interpretation of this scripture, let alone present an argument as to why it is applicable to Lamarckism. But of course modern evolutionary theory is not Lamarckian, so the whole argument is misplaced.

The third type of theological argument Peterson uses to combat evolution is condemnation by association. Through the use of \textit{ad hominem} fallacies,\footnote{Character assassination appears to be a sufficiently ancient technique to have a Latin name. People use it because it is easier than dealing with relevant evidence or argument. It is inappropriate when the issue is not the trust to be placed in a person but rather the validity of a person’s theory. If Lyell led a dissolute life (I don’t think he did) that would not disprove the theories he advanced. Theories are disproved by evidence or experience or they are shown to be logically inconsistent.} backed up with a scriptural justification, the author suggests that the earliest proponents of evolutionary theory were anti-Christs. This is really the only place where the Book of Mormon is called into play in any significant manner, as the author quotes the stories of Sherem, Korihor,
and Zeezrom at length. In the preface the author describes this tactic:

People in our day who have promoted doctrines in the name of science can be compared to people in the Book of Mormon who have been deceived by Satan and have promoted his doctrines. By exposing the origins of some of the accepted scientific theories, and by analyzing them, we can determine which theories are true, and which ones are false.

According to this type of argument, if it can be demonstrated that the early proponents of a theory were bad men, we can simply dismiss their theories without consideration. This is perhaps the weakest form of argumentation since it relies exclusively on the character of a proponent, which has little to do with the veracity of the theory he espouses.

Even if we were to accept this type of argument, it is essential that the author establish a direct parallel between the character and motives of the scientist and those of the anti-Christ. Peterson does not do this. For example, the author quotes two creationist sources which claim that the real reason Lyell developed uniformitarianism was to destroy the Bible (pp. 52–53). He further observes that Lyell was a lawyer. His wide sweeping conclusion is that Lyell is like Zeezrom (because, after all, Zeezrom was a lawyer) and claims that "Lyell's works of darkness are holding back the advancement of science" and that Lyell's plan was "a very subtle plan, as to the subtlety of the Devil" (p. 59). Peterson portrays Lyell as a scheming, wicked man who manipulated Darwin and Wallace for his own evil purposes. He further states:

I believe that Lyell has subjected himself to Satan, the father of all lies, and was an instrument in his hands. I believe the adversary exercised his power in Lyell, and that Lyell's theory [of uniformitarianism] was a snare of the adversary, which he had laid to catch this people, that he might bring the people into subjection unto him. (p. 60)

Peterson is entitled to his belief, but if we are to join him in it he should present evidence. The quotations from creationist sources are opinions of their authors. No primary historical sources are cited. It is wrong to treat these quotations as if they
were primary historical sources and they, coupled with the lawyer observation, provide little support for such strong conclusions. The point is not whether Lyell was a good or bad person, only that Peterson did not provide sufficient evidence to demonstrate that he was like Zeezrom (other than being a lawyer) and should thus refrain from harsh condemnation.

It is interesting that the types of evidence the author calls into play are nearly identical in scholarship and style to many of the attacks brought against the reputation of the Prophet Joseph Smith. The author indulges in incomplete and selective historical presentation (pp. 51–61), treatment of creationist literature as if it were an authoritative historical source, specific criticisms of Darwin for his lack of formal education (p. 55), and suggestions of conspiracy by Wallace, Darwin, and Lyell (pp. 57–61). His quotation from creationist sources is parallel to anti-Mormons quoting each other about Joseph Smith; the quoting and re-quoting leads more to the perpetuation of personal bias than the elucidation of evidence. There is a wealth of information about these men which the author should have consulted rather than relying on second-hand, filtered sources. The author’s discussion of the historical background and early influences which contributed to Darwin’s thinking is inaccurate, biased, and a sloppy piece of scholarship. And it is irrelevant to the truth or falsity of a theory.

Veracity by Conflict

It becomes quickly clear in the early pages that the author thinks all of evolutionary theory is falsehood. He merely dichotomizes evolution and religion, leaving no room for any intermediate position: “We can be enticed to believe in man’s theory of evolution, or we can choose to believe in the scriptures and believe in creation” (p. 5). By doing so, he ignores the possibility that God used natural laws to create the grand diversity of life and that evolutionary biology is simply trying to explain

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20 Peterson cites four sources for his description of Lyell and five for Darwin. All but one of these are creationist. The one exception is a statement from the Book of Knowledge on Darwin’s lack of formal education. This the author immediately ridicules by asking: “are these the qualifications we would expect of someone who would change the thinking of the entire world?” (p. 55)—a very strange argument for someone who believes in Joseph Smith!
some of these laws in a scientific framework. To this position he responds: “to accept this theory is to compromise the scriptures to conform to scientific beliefs” (p. 62).

One of the major problems with this book is that the author draws no distinction between the doctrine of creation and his own personal interpretation of the mechanistic details of creation. He falls back on the scripture: “if ye believe in Christ, ye shall believe in these words” (p. 1). Why we should believe in his interpretation of the details of creation, however, is left poorly defended. His logic amounts to (1) creation is a true and scripturally well-supported doctrine; (2) therefore, any detail culled from the scriptures (as he interprets them) that conflicts with evolutionary theory must be correct; and, as a corollary, (3) the more it conflicts, the more correct it must be. This is a convenient style of argumentation for the author because he does not need to demonstrate that his interpretations are well founded in scripture, only that they conflict with evolution.22

A fine example of this occurs where Peterson states that: “this account [in the book of Moses] verifies that man was created before the other animals” (p. 42). The author appears to be referring to Moses 3:7, “And man became a living soul, the first flesh upon the earth, the first man also.” Despite the author’s unorthodox interpretation, it is quite clear in all creation accounts that man was created on the sixth day and the animals were created earlier. Joseph Fielding Smith has interpreted this scripture as follows:

Adam did not come to this earth until it was prepared for him. The animals were here. Plants were here. The Lord did not bring him here to a desolate world, and then bring other creatures. . . . Adam was the first of all creatures to fall and become flesh, and flesh in this sense means mortality, and all through

22 It is interesting that among the many scriptures cited, the author has apparently omitted D&C 101:33, which strongly suggests that the Lord has yet to reveal the details of creation. This may be a simple oversight or he may be trying to preempt the argument that since we know so little about the details of creation and evolution, any creationist/evolutionist debate is unfruitful, as most arguments and perceived incongruities are based on lack of information on both sides of the issue. Brigham Young, John A. Widtsoe, and James E. Talmage have expressed similar views. See Widtsoe, Discourses of Brigham Young, 258–59; Widtsoe, Evidences and Reconciliations, 160; Talmage, The Talmage Story, 231–33.
our scriptures the Lord speaks of life as flesh, so Adam became the first flesh.\\(^{23}\)

Peterson seems oblivious to the need of presenting any evidence to support his assertion other than noting that his interpretation would more clearly conflict with evolution, since evolutionary theory predicts that plants and lower animals came before man. This same style of argument is used to support a literal interpretation of the length of each period of creation. The author bases his view on Abraham 3:4 and declares that one creative period equals 1000 years. The reason for selecting this interpretation, over other possible ones, is described as follows:

The concept of an earth that was millions or billions of years old would persuade many people that there was time for evolution to take place without a creator being involved. . . . However, applying the test [Moroni's test] to the concept of a young earth (a few thousand years old), we would realize there isn't enough time for evolution to take place. We would be more likely to believe that we couldn't be here unless there is a Supreme Creator. (p. 28)

Here he implies that the Creator had to work swiftly to avoid confusing us! Once again, this argument amounts to saying that anything which makes evolution less likely must be true. But the author does not even follow his own argument to its logical conclusion. By his own criterion of judging truth, a creative period that is only one day long would mean that evolution is even less likely to occur and should persuade more people to disbelieve in it. Subsequently, this interpretation must be even more true. Of course, this type of reasoning is absurd.\\(^{24}\)

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24 I find it strange that the author is so preoccupied with a relatively minor point: even if it is true that each day represents a long time period, longer than thousands of years, that does not necessarily mean that evolution could occur; evolution still might not have occurred just because it doesn't work, not because it didn't have enough time. He seems to take the very unusual position (for a creationist) that evolution could occur if given sufficient time. "It is the evolutionary concept that everything happened by chance. Of course, it would require a very long time for this to happen." (p. 31)
The author fails to take into account another view which has some basis in scripture as well as modern revelation. The terms *the first day, the second day*, etc., may simply be labels for a set of tasks that were to be completed in a prescribed order rather than any actual measurements of a time period. While there is indeed some scriptural support for his interpretation, it does not preclude other possible interpretations. These should have been discussed rather than ignored.

The author has omitted reference to the more moderate viewpoint of Brigham Young regarding the time frame of creation as well as the geology of Lyell. Brigham Young felt that long creation periods were not only in harmony with scriptural accounts, but were also evidence for the veracity of the Mormon interpretation of creation. He states:

I am not astonished that infidelity prevails to a great extent among the inhabitants of the earth, for the religious teachers of the people advance many ideas and notions for truth which are in opposition to and contradict facts demonstrated by science, and which are generally understood. You take, for instance, our geologists, and they tell us that this earth has been in existence for thousands and millions of years. They think, and they have good reason for their faith, that their researches and investigations enable them to demonstrate that this earth has been in existence as long as they assert it has. . . . In these respects we differ from the Christian world, for our religion will not clash with or contradict the facts of science in any particular. You may take geology, for instance, and it is true science; not that I would say for a moment that all the conclusions and deductions of its professors are true, but its leading principles are; they are facts—they are eternal; and to assert that the Lord made the earth out of nothing is preposterous and impossible. . . . How long it's been organized is not for me to say, and I do not care anything about it. As to the

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25 Abraham says the Gods *called* the creation periods days (Abraham 4:5, 8). In Genesis 40:4 *day* is translated as “a season”; in Judges 11:4 a form of *day* is translated as “in the process of time.” For an excellent treatment see Henry Eyring, “The Gospel and the Age of the Earth,” *Improvement Era* 68 (July 1965): 608–9, 626, 628; and Widtsoe, *Evidences and Reconciliations*, 146–49.
Bible account of the creation we may say that the Lord gave it to Moses. If we understood the process of creation there would be no mystery about it, it would be all reasonable and plain, for there is no mystery except to the ignorant.

Conclusion

Using the Book of Mormon to Combat Falsehoods in Organic Evolution is a disappointing book riddled with sloppy scholarship, flimsy arguments, unsupported scriptural interpretations, and misrepresentation of fact and theory. Stylistically, the presentation is difficult to follow, and the author seems distracted as he jumps from point to point without any clear direction. Organization of thoughts and ideas is weak, and the author has considerable difficulty expressing his arguments clearly and succinctly. In addition, the book is filled with rather paranoid insinuations of conspiracy and cover-up.

Peterson unwittingly demonstrates something most of us already know: while the Book of Mormon tells us that God is the Creator, that creation was orderly, and that creation serves a vital purpose in his plan, it gives very few details about the mechanics of creation (or the details of how to fix a car, for that matter). If individuals are interested in creationism they should

26 Widtsoe, Discourses of Brigham Young, 258–59.
27 In reference to mitosis, the author states: “Why are we told that the process by which all cells reproduce will form new cells exactly like the parent cell, when there are so many specialized cells in our body? Is it to brainwash us so that we will accept the theory of evolution?” (p. 132, emphasis mine); “I have been asked if I think there is a conspiracy among scientists. Some of the pressure groups [groups of scientists who argue that evolution should be taught in school] mentioned earlier might be considered conspiracies, but there is no worldwide conspiracy.” (p. 178, note the insinuation); “Evidence has been discarded, manipulated or falsified to support dating methods and evolution. The real evidence does not support these theories.” (pg. 169); “Why would Satan want to deceive people into believing that all people in the Americas before Columbus came across the Bering Straight? . . . Perhaps our faith is being tried” (p. 127); similar statements abound.
28 It is truly unfortunate that the author has not clearly presented the strength of Mormonism’s unique understanding of creation. I feel that Mormons have the fewest doctrinal conflicts with evolution and hence potentially the strongest religious position on creation in all of Christianity. I
go elsewhere; they will find more compelling and better formulated arguments in other creationist publications.\textsuperscript{29}

The author's fundamental misunderstanding of evolutionary theory and the nature of scientific inquiry, as well as his poorly defended scriptural interpretations and questionable applications, should be sufficient reason not to take this book very seriously. As aptly stated by James E. Talmage:

\begin{quote}
The opening chapters of Genesis, and scriptures related thereto, were never intended as a textbook of geology, archaeology, earth-science, or man-science. Holy Scripture will endure, while the conceptions of men will change with new discoveries. We do not show reverence for the scriptures when we misapply them through faulty interpretation.\textsuperscript{30}
\end{quote}

Or one could simply use the same argument to dismiss this book as the author uses to dismiss Darwin: (1) since Darwin had little formal education in science, he was not qualified to produce such an influential theory (p. 55), and (2) because Darwin had ulterior motives, his objectivity in analyzing data is brought into question (p. 56). Ironically, by his own logic the author condemns his own work.

\textsuperscript{29} For a review of these see S. J. Gould, "Retrying the Monkey Trial in a Kangaroo Court," \textit{Scientific American} (July 1992): 118–21.

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