

Avoiding Religious Dogma in Origins Science

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For the purposes of this paper the term 'Origins Science' is taken to be when any field of science (e.g. Cosmology, Geology, Palaeontology, Biology, Chemistry etc.) studies the origins of anything in the natural world answering the question 'where did it come from?'

Michael Shermer warns of a phenomenon he calls 'bias confirmation' and described it like this: "Being deeply knowledgeable on one subject narrows one's focus and increases confidence, but it also blurs dissenting views until they are no longer visible, thereby transforming data collection into bias confirmation and morphing self-deception into self-assurance."¹

Any field of science would do well to avoid this phenomenon including Origins Science. There is likely a myriad of causes that might tempt bias confirmation in Origins Science, however this paper is only going to look at one and that is religious (in the broad sense including theistic and non-theistic belief systems) dogma and more importantly how it can be avoided.

To do this the two foundational definitions of any field of science, including Origins Science, need to be considered: Science and Methodological Naturalism.

Science: "The pursuit and application of knowledge and understanding of the natural and social world following a systematic methodology based on evidence."²

Methodological Naturalism: "...we are forced by our *a priori* adherence to material causes to create an apparatus of investigation and a set of concepts that produce material explanations..."³

Before delving into an analysis of Methodological Naturalism in the field of Origins Science, it is recognised that generally the other fields of science should employ Methodological Naturalism. This could be the topic of another paper, but it makes sense that a nuclear scientist cannot say that magic is going to make their reactor work, that would endanger the lives of many people. So to be clear, this paper is only analysing what happens when Methodological Naturalism is applied to the field of Origins Science.

Firstly, is Methodological Naturalism normally applied to Origins Science? In the context of Origins Science Helen Fields said: "invoking the hand of God to explain natural phenomena breaks the rules of science"⁴ and Judge John E Jones III said: "Supernatural explanations are not part of science."⁵

Thus it can be seen that Methodological Naturalism is applied to Origins Science.

There are many consequences of this practice, two of them are key:

1. Scientists must suppress any notion that what they are observing was supernaturally caused/created, regardless of the evidence. The concept of

supernatural causation/creation is not allowed and so scientists and science journals are not free to contemplate supernatural causes, they must keep to materialistic/natural explanations regardless of the evidence.

This does not align with the ideal of freedom of scientific inquiry nor does it align with scientific evidence based reasoning.

2. It causes a starting premise of 'everything evolved by chance' and that only naturalistic evolution theories can be correct. How can a theory be deemed correct before it is analysed and tested? This starting premise actually removes the falsifiability of naturalistic evolution theories causing them to be mere dogma.

An entire paper could (and should) be written on the first consequence but the second is more aligned with the topic of this paper and so will be the one focused on.

So, in Origins Science should Methodological Naturalism be falsifiable? Falsifiability is a basic foundation of science and rigorous analysis of a theory should not be shied away from. As Karl Popper said, "In so far as a scientific statement speaks about reality, it must be falsifiable." ⁶

Avi Loeb of the Center for Astrophysics at Harvard University says "Falsifiability should be a hallmark of any scientific theory." ⁷ George Ellis and Joe Silk in support of falsifiability said that "The imprimatur of science should be awarded only to a theory that is testable." ⁸

So falsifiability must be part of any rigorous scientific investigation and since the foundation of science is naturalism then it should be falsifiable too, especially in the context of Origins Science. If it is not treated as such then it is religious dogma and not science as Timothy Williamson said: "Naturalism as dogma is one more enemy of the scientific spirit."⁹

With Timothy Williamson's warning in mind we then need to ask if, in Origins Science, naturalism is treated as falsifiable or as dogma? In his 2018 paper John Calvert analysed the current state of Origins Science and concluded that "modern Origins Science is dogmatic, not objective." ¹⁰ He placed the cause squarely on the use of Methodological Naturalism stating: "There are at least three reasons modern origins science is not in fact objective: (1) its investigation and explanations are determined by the orthodoxy of methodological naturalism and not by an objective weighing of the relevant evidence, (2) due to the orthodoxy, it violates the logic necessary for the conduct of the historical science it is, and (3) because the use and effect of use of the orthodoxy is generally concealed." ¹¹

It is clear then that there is considerable room for improvement in Origins Science. The method to obtain the improvement is to begin treating naturalism as falsifiable. So, in Origins Science how would one falsify naturalism? The only way to achieve this is to carry out a complete critical analysis of both naturalistic evolution theories and supernatural creation theories and be open and honest about all shortcomings in all the theories.

In brief it boils down to this: If supernatural creation is refused as an option then Naturalism is just religious dogma and if naturalistic evolution is refused as an option then Creationism is just religious dogma.

Robert Delfino, Professor of Philosophy at St John's University, proposes the idea of Methodological Neutralism in Origins Science and describes the principle such that "scientists should simply search for causes without setting any a priori conditions on what ontological status those causes must have."¹² Therefore, the starting premise of Origins Science could be something like the following. Perhaps there is a naturalistic explanation for the origin of the universe and life and perhaps there is a non-naturalistic explanation; to the extent that such explanations are testable, we need to follow the evidence wherever it leads.

When one reviews science journals and science institution publications it is found that none of them publish papers on Origins Science that treat naturalism as falsifiable. When the journal *PLoS ONE* accidentally published an article with the statements "design by the Creator"¹³ and "the Creator's invention"¹³ the outcry from the scientific community was enough that *PLoS ONE* "decided to retract the article"¹³. If the paper in question included an explanation about the falsifiability of naturalism the outcry may have been different, but the paper did not include any such explanation, nor did the *Nature* article reporting the incident.¹³

However, science journals cover a wide range of science topics and scientific fields and so their general adherence to Methodological Naturalism makes sense. It is only in the field of Origins Science that naturalism should be treated as falsifiable. So it would be inconsistent for these journals to treat naturalism as falsifiable in some papers and not in other papers. With careful explanations it could be achieved but then one has to hope that readers catch the explanations and note which paper is adhering to Methodological Naturalism and which paper is treating naturalism as falsifiable and this would lead to confusion.

Therefore, a new Origins Science journal is needed that publishes papers on origins where naturalism is treated as falsifiable. This is the only way Origins Science can be conducted with the rigorous investigation that it deserves.

References:

1. Shermer, Michael. *Huffpost*, May 2012. (https://www.huffpost.com/entry/wrong-again-why-experts-p_b_1181657).
2. The Science Council, London. (<http://sciencecouncil.org/about-us/our-definition-of-science/>).

See also: National Academy of Sciences, Washington, D.C. "The use of evidence to construct testable explanations and predictions of natural phenomena, as well as

the knowledge generated through this process.”
(<http://www.nas.edu/evolution/Definitions.html>)

3. Lewontin, Richard C. Billions and Billions of Demons (review of *The Demon-Haunted World: Science as a Candle in the Dark* by Carl Sagan, 1997), *The New York Review of Books*, p. 31, 9 January 1997. The full quote is: “Our willingness to accept scientific claims that are against common sense is the key to an understanding of the real struggle between science and the supernatural. We take the side of science in spite of the patent absurdity of some of its constructs, in spite of its failure to fulfil many of its extravagant promises of health and life, in spite of the tolerance of the scientific community for unsubstantiated just-so stories, because we have a prior commitment, a commitment to materialism. It is not that the methods and institutions of science somehow compel us to accept a material explanation of the phenomenal world, but, on the contrary, that we are forced by our a priori adherence to material causes to create an apparatus of investigation and a set of concepts that produce material explanations, no matter how counter-intuitive, no matter how mystifying to the uninitiated. Moreover, that materialism is absolute, for we cannot allow a Divine Foot in the door.”

(See also https://en.wikipedia.org/methodological_naturalism and also “Science, Evolution, and Creationism” The National Academies Press, 2008, which says “In science, explanations must be based on naturally occurring phenomena.” p.10.)

4. Fields, H. “Dinosaur Shocker”, *Smithsonian Magazine*, May 2006.
(<https://www.smithsonianmag.com/science-nature/dinosaur-shocker-115306469/>)
5. Jones, John E., Tammy KITZMILLER, et al., Plaintiffs, v. DOVER AREA SCHOOL DISTRICT, et al., Defendants. No. 04cv2688. United States District Court, M.D. Pennsylvania. December 20, 2005. MEMORANDUM OPINION, JONES, District Judge.
6. Popper, K. *The Logic of Scientific Discovery*, (London: Routledge, 2002) p. 316. (First published 1935).
7. Loeb, Avi. As quoted in “What Happened Before the Big Bang?” Center for Astrophysics Release No.: 2019-10. (<https://www.cfa.harvard.edu/news/2019-10>)
8. Ellis, G., Silk, J. *Nature* 516, 321–323, 18 December 2014.
(<https://www.nature.com/news/scientific-method-defend-the-integrity-of-physics-1.16535>)
9. Williamson, T. “What Is Naturalism?” *New York Times*, 4 September 2011.
(<https://opinionator.blogs.nytimes.com/2011/09/04/what-is-naturalism/>)
10. Calvert, John H. “The Absence of Religious Neutrality in K-12 Public Science Education” *Liberty University Law Review* Vol 12:571, 2018, p. 645.
(https://digitalcommons.liberty.edu/lu_law_review/vol12/iss3/4/)

11. *ibid.*, p. 592.
12. Delfino, Robert A. "Scientific Naturalism and the Need for a Neutral Metaphysical Framework" in *Science and Faith within Reason: Reality, Creation, Life and Design*, ed. by Jaume Navarro (Surrey, England: Ashgate, 2011), p. 47.
13. Cressey, Daniel. "Paper that says human hand was 'designed by Creator' sparks concern" *Nature*, 3 March 2016. (<https://www.nature.com/news/paper-that-says-human-hand-was-designed-by-creator-sparks-concern-1.19499>)

Appendix

There is extensive literature that analyses Origins Science and only some has been reviewed by the author so far. The few that have been reviewed are placed in four categories below. The review of the extant literature on this topic will be continued and the findings added to the following list.

1. The following analyse if Naturalism should be falsifiable in Origins Science:

Calvert, John H. "The Absence of Religious Neutrality in K-12 Public Science Education" *Liberty University Law Review* Vol 12:571, 2018.

(https://digitalcommons.liberty.edu/lu_law_review/vol12/iss3/4/)

Williamson, T. "What Is Naturalism?" *New York Times*, 4 September 2011.

(<https://opinionator.blogs.nytimes.com/2011/09/04/what-is-naturalism/>)

Delfino, Robert A. "Scientific Naturalism and the Need for a Neutral Metaphysical Framework" in *Science and Faith within Reason: Reality, Creation, Life and Design*, ed. by Jaume Navarro (Surrey, England: Ashgate, 2011).

2. The following do not mention Methodological Naturalism or similar terms:

Davies, Paul, *Cosmic Jackpot: Why Our Universe is Just Right for Life*, Houghton Mifflin Company, 2007.

Cressey, Daniel. "Paper that says human hand was 'designed by Creator' sparks concern" *Nature*, 3 March 2016. (<https://www.nature.com/news/paper-that-says-human-hand-was-designed-by-creator-sparks-concern-1.19499>)

Lodge, David M. "Faith and Science Can Find Common Ground", *Nature* 28 July 2015. (<https://www.nature.com/news/faith-and-science-can-find-common-ground-1.18083>)

Godfrey-Smith, Peter, *Theory and Reality: An Introduction to the Philosophy of Science*, University of Chicago Press, 2003.

Branch, Glenn. "Science and Religion: Godless Chronicles", *Nature* 500, 149, 8 August 2013. (<https://www.nature.com/articles/500149a>)

Editorial: "Science Education Reforms in the UK", *Nature Cell Biology* 14, 977, 3 October 2012. (<https://www.nature.com/articles/ncb2601>)

Alexander, D., White, B., "Science and Religion are Wise to Talk", *Nature* 471, 166, 10 March 2011. (<https://www.nature.com/articles/471166b>)

Ball, Philip. "What a Shoddy Piece of Work is Man", *Nature*, 3 May 2010. (<https://www.nature.com/news/2010/100503/full/news.2010.215.html>)

Bleckmann, Charles A. "Evolution and Creationism in Science: 1880–2000", *BioScience*, Volume 56, Issue 2, February 2006, Pages 151–158. (<https://academic.oup.com/bioscience/article/56/2/151/274042>)

Minkel, J.R. "Evolving Creationism in the Classroom", *Scientific American*, 10 Sep 2008. (<https://www.scientificamerican.com/article/evolving-creationism-in-the-classroom/>)

Shermer, Michael. "The Woodstock of Evolution", *Scientific American*, 27 June 2005. (<https://www.scientificamerican.com/article/the-woodstock-of-evolutio>)

3. The following mention Methodological Naturalism or similar terms in the context of Origins Science, but they do not carry out an analysis of it, they only define it and assume it to be true:

Shermer, Michael. "The Case for Scientific Humanism", *Scientific American*, 1 January 2019. (<https://www.scientificamerican.com/article/the-case-for-scientific-humanism/>)

Scott, Eugenie C. "Back to Basics By Way of Evolution", *Nature* 465, 164, 13 May 2010. (<https://www.nature.com/articles/465164a>)

Visala, A., Vainio, O. "Philosophy of Religion and the Scientific Turn", *Palgrave Communications* Volume 4, Article number: 135, 2018. (<https://www.nature.com/articles/s41599-018-0190-9>)

Tammy KITZMILLER, et al., Plaintiffs, v. DOVER AREA SCHOOL DISTRICT, et al., Defendants. No. 04cv2688. United States District Court, M.D. Pennsylvania. December 20, 2005. MEMORANDUM OPINION, JONES, District Judge.

"*Science, Evolution, and Creationism*" The National Academies Press, 2008. National Academy of Science, says "In science, explanations must be based on naturally occurring phenomena." (p. 10) and "hypotheses must be restricted to testable natural explanations" (p.43).

The Wikipedia article titled "Creation Evolution Controversy" (<https://en.wikipedia.org>) only mentions it to state that "supernatural explanations are outside the realm of science."

4. The following carry out an analysis of Methodological Naturalism in the context of Origins Science but do not analyse if it should be falsifiable:

Barr, Stephen M., *Modern Physics and Ancient Faith*, University of Notre Dame Press, 2003. He states that “Materialism is a philosophical opinion... is not science” but does not analyse the falsifiability of materialism in the context of Origins Science.

Forrest, Barbara. “Methodological Naturalism and Philosophical Naturalism: Clarifying the Connection”, *Philo*, Vol. 3, No. 2 (Fall-Winter 2000), pp. 7-29. Barbara Forrest carries out an analysis of Methodological Naturalism in the context of Origins Science, however she never asks if it should be falsifiable and thus concludes that “science relies upon methodological naturalism”.

(https://infidels.org/library/modern/barbara_forrest/naturalism.html)

The *Stanford Encyclopedia of Philosophy* in its section on Naturalism covers Ontological and Methodological Naturalism in so far as how they relate to Philosophy. The paper assumes that naturalism is true and does not raise the question of the falsifiability of naturalism and does not carry out a critical investigation of naturalism.

(<https://plato.stanford.edu/entries/naturalism/>)

Artigas, Mariano, *The Mind of the Universe: Understanding Science and Religion*, Templeton Foundation Press, 2000.

Haught, John F., *God and the New Atheism: A Critical Response to Dawkins, Harris, and Hitchens*, Westminster John Knox Press, 2008.

Numbers, Ronald L., *Galileo Goes to Jail and other Myths about Science and Religion*, Harvard University Press, 2009

Hayashi, Adam, *Kitzmiller v. Dover: A Public Policy Analysis*, University of Florida, 2010.