

## Faith and Epistemic Principles: Why Religious Belief Should Seem Unreasonable to Scientists

Many scientists believe in God, and some are even practicing Christians. Yet being a scientist and having religious beliefs is fundamentally inconsistent because of how scientists are taught to go about thinking and forming beliefs. Science is founded on certain fundamental epistemic principles, that is, principles about what we can claim to know about the universe. In affirming the existence of God, a scientist is proposing a theory or hypothesis of a sort that these principles forbid, namely, one which is unfalsifiable in principle and which posits more than the simplest explanation necessary to explain observed phenomena. It is therefore not reasonable for a scientist to be religious, because, as a scientist, he must accept these epistemic principles—parsimony and falsifiability—which religious beliefs violate.

A fundamental principle in the philosophy of science is the “Law of Parsimony,” often referred to as Occam’s razor because of its frequent statement and use by William of Occam. Occam stated it as: “Nunquam ponenda est pluralitas sine necessitate (Pluralities ought not be posited without necessity),”<sup>1</sup> but perhaps a clearer statement of the principle as it applies to science was given by Sir Isaac Newton in his *Principia Mathematica*: “We are to admit no more causes of natural things than such as are both true and sufficient to explain their appearances.”<sup>2</sup> Parsimony, therefore, is the principle that we cannot reasonably conclude any more than the simplest explanation that completely accounts for observed phenomena. This follows directly from the fact that science is an *inductive* discipline. Inductive reasoning is the process of drawing general conclusions from observed patterns of phenomena. For example, suppose you observe someone drawing cards with the numbers 1 through 10 on them and sorting them into

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<sup>1</sup> “Occam’s Razor,” [h2g2](http://www.bbc.co.uk/dna/h2g2/A21648783), 2007, BBC, 25 September 2008 <<http://www.bbc.co.uk/dna/h2g2/A21648783>>.

<sup>2</sup> “Occam’s Razor.”

two different stacks. After 10 draws, these stacks contain {1, 7, 3, 5, 3} and {2, 4, 4, 8, 6}, respectively. You are then asked to come up with a theory of what rules determine in which list each number goes. The simplest explanation, of course, would be: “odd numbers go in the first list and even numbers in the second.” That is inductive reasoning. Now, you could say: “odd numbers go in the first list and even numbers in the second, except for 9, which goes in the second list.” Notice that, upon further draws, this could prove to be the case, but intuition tells us that, at this point, it would be unsound reasoning to draw this conclusion, because the simpler explanation fully accounts for what has so far been observed. As another example:

When Isaac Newton proposed his Law of Gravity, he did not add clauses such as ‘except when applied to objects of a certain shade of purple,’ despite (presumably) not having tested objects of every colour. Nor did he add in a clause saying, ‘until 3rd April 2032, when all gravity will cease.’ Clearly, no experiment Newton could have performed would have differentiated his ‘plain’ version from one with a time-limit. However, the colour-dependence or time limit would be extra layers of complexity for which Newton had no evidence. Since there are an infinite number of possible time limits, to propose any one of them would be senseless. Newton's only logical course of action was not to include any reference to a time limit in his law.<sup>3</sup>

Here we see the philosophical justification for parsimony: “It is possible to conceive of a vast—possibly infinite—variation of ideas, the majority of which are mutually exclusive and have no possibility of evidence either for or against them...Occam proposed that it is both illogical and irrational to react with anything but disbelief to such ideas.”<sup>4</sup> As applied to religious beliefs, some scientists believe that there are aspects of the natural world, such as certain complex parts of certain organisms, that defy scientific explanation and therefore must be the product of some supernatural intervention. They then point to this as evidence of the existence of God. Indeed, sometimes invoking God might seem “simpler” than competing naturalistic explanations and therefore compliant with the Law of Parsimony. There are, however, at least two problems with

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<sup>3</sup> “Occam’s Razor.”

<sup>4</sup> “Occam’s Razor.”

such arguments. Firstly, such explanations are in fact rarely “simple,” because, as Richard Dawkins frequently points out, an intelligent, omnipotent God would almost certainly have to be vastly more complicated than anything we know of in the natural world. Secondly, assigning the label “God” to some “metaphysical intervention” is intellectually dishonest, because doing so often serves as an excuse to hold a vast array of other cultural beliefs associated with the word “God,” which certainly cannot be arrived at by induction from observed evidence (e.g. God listens to our prayers; Jesus was born of a virgin, performed miracles, died on the cross for our sins, and if you believe all this you will go to heaven when you die), and of which there are infinite possible variations. Was such intervention the work of Yahweh, Zeus, Lord Brahma, or the Flying Spaghetti Monster? In the face of these infinite options, and without any evidence to prefer one over the others, “the chances of [any one] being correct are infinity to one against (i.e. zero).”<sup>5</sup> The only reasonable response, therefore, is to hold no belief at all.

A scientific principle closely related to parsimony is the falsifiability criterion. This principle says that a statement is not a valid hypothesis if it cannot ever be proven false.

Bertrand Russell sublimely illustrated this principle with his famous “Celestial Teapot” analogy:

If I were to suggest that between the Earth and Mars there is a china teapot revolving about the sun in an elliptical orbit, nobody would be able to disprove my assertion provided I were careful to add that the teapot is too small to be revealed even by our most powerful telescopes. But if I were to go on to say that, since my assertion cannot be disproved, it is intolerable presumption on the part of human reason to doubt it, I should rightly be thought to be talking nonsense.<sup>6</sup>

Russell argues that such Christian concepts as God, the immortal soul, and free will are unfalsifiable.<sup>7</sup> No observation or experiment could ever demonstrate that there could not exist an all-knowing metaphysical being called God. However, the same thing could be said of invisible,

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<sup>5</sup> “Occam’s Razor.”

<sup>6</sup> Bertrand Russell, “Is there a God?,” 1952, quoted in Richard Dawkins, *The God Delusion*, (New York: Houghton Mifflin, 2006) 52.

<sup>7</sup> Bertrand Russell, *Science and Religion*, (New York: Oxford University Press, 1997) 145.

intangible leprechauns, yet no one believes in those. Such things are principally unfalsifiable. Notice that the same would be true even if God (or the invisible leprechauns) occasionally interacted with and influenced the physical world, because still no amount of observation could ever prove that such interaction had never occurred at some unobserved time and place. However, again, intuition tells us that, in the absence of positive evidence of such occurrences, it is only reasonable to assume that they have never occurred. Note, also, that even if such interactions with the physical world were observed, we are simply back to the situation discussed in the previous section, where we cannot conclude from such observations whether God, leprechauns, or something else is responsible for such events, and therefore the only rational response is agnosticism.

It may be argued that it is not unreasonable or in any way a contradiction for a scientist to hold metaphysical beliefs that do not comply with these laws of scientific inquiry. After all (it may be said), the fact that these laws limit what may be considered *scientific* beliefs does not bear on whether a scientist can hold other types of beliefs. But such an argument misses the point. These laws do not simply limit what may be called “scientific” claims. They are philosophical principles that set the boundaries of what we can claim to know, and that are part of the scientific method for that reason. Notice that, as I discuss theories, like Russell’s teapot, that these principles preclude, I do not merely say that to believe such claims would be unscientific. Rather, I argue that our intuitions tell us that it would be unreasonable to hold these beliefs at all. Thus, it is inconsistent for a scientist to hold unparsimonious and/or unfalsifiable beliefs, because the philosophical principles on which science is founded (and therefore which a scientist ought to accept) tell us that to do so is not just unscientific, but absurd.

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