

# **Not the God of the Gaps, But the Whole Show**

**Scientists are wrong to call the Higgs boson 'more relevant than God'**

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The recent verification (to within a whisker) of Peter Higgs's prediction made in the teeth of weighty skepticism is rightly celebrated as the inspiring stuff of which great science is made – the payoff for the intellectual commitment and scientific prowess of a dedicated international team of specialists working for many years.

The Higgs boson has been dubbed the 'god particle' much to the dismay of many physicists, including Peter Higgs and Lawrence Krauss. Yet the latter, perhaps unintentionally, gives a new twist to the 'god particle' epithet in his Newsweek article:

Humans, with their remarkable tools and their remarkable brains, may have just taken a giant step towards replacing metaphysical speculation with empirically verifiable knowledge. The Higgs particle is now arguably more relevant than God.

Krauss has not taken that giant step himself, since his statement, far from being a statement of science, is another metaphysical speculation – a mixture of hubris and an inadequate concept of God.

What does Krauss mean by 'more relevant than God?' Relevant to what? Clearly the Higgs particle is more relevant than God to the question of how the universe works. But not to the question why there is a universe in which particle physics can be done. The internal combustion engine is arguably more relevant than Henry Ford to the question of how a car works, but not for why it exists in the first place. Confusing mechanism and/or law on the one hand and agency on the other, as Krauss does here, is a category mistake easily made by ignoring metaphysics.

Krauss does not seem to realize that his concept of God is one that no intelligent monotheist would accept. His 'God' is the soft-target 'God of the gaps' of the 'I can't understand it, therefore God did it' variety. As a result, Krauss, like Dawkins and Hawking, regards God as an explanation in competition with scientific explanation. That is as wrong-headed as thinking that an explanation of a Ford car in terms of Henry Ford as inventor and designer competes with an explanation in terms of mechanism and law. God is not a 'God of the gaps', he is God of the whole show.

Indeed, it was belief in an intelligent Creator that convinced the great pioneers, Galileo, Kepler, Newton, Clerk Maxwell, Babbage and many others that science could be done. C. S. Lewis put it this way: 'Men became scientific because they expected law in nature and they expected law in nature because they believed in a lawgiver.'

The Nobel prizewinner Melvin Calvin traces the rise of modern science to the conviction

that the universe is governed by a single God, and is not the product of the whims of many gods, each governing his own province according to his own laws. This monotheistic view seems to be the historical foundation for modern science.

All this notwithstanding, Lawrence Krauss thinks that the Higgs boson 'brings science closer to dispensing with the need for any supernatural shenanigans all the way back to the beginning of the universe'. Yet, even Isaac Newton did not imagine his discovery of the law of gravitation banished God like that. On the contrary, Newton was motivated by his magnificent discovery to write his magnum opus, the brilliant *Principia Mathematica*, expressing the hope that it would persuade the thinking person to believe in God.

The more Newton understood of the mathematical structure of the universe, the more he admired the creative genius of God, not the less. Surely it is obvious to all but the willfully blind that the more we understand of engineering, the more we admire the genius of a Rolls or a Royce, not the less. And the more we know about the Higgs boson ...?

Furthermore, dismissing God by pejoratively describing his activity as 'supernatural shenanigans' is not perhaps the wisest approach for someone who appears to think, if I don't misunderstand him, that the Higgs field is a 'nothing' out of which the universe (self-contradictorily) creates itself by means of 'a purposeless quantum burp'. Natural shenanigans?

Also, such reductionist analysis provides no more clue to the meaning of it all than an analysis in terms of particles of paint would help us understand the ceiling of the Sistine Chapel – to say nothing of the absurd idea that the paint particles created the painting in the first place. Analysis of particles of paint may help you create a new paint, but not a new painting.

If the universe, as Krauss alleges, is ultimately the product of a purposeless quantum burp, then so are we and so are our minds. Thus Krauss, in a delightful irony, gives us good reason to doubt the reliability of our human cognitive faculties and, consequently, to doubt the validity of any concepts, beliefs or arguments that they produce, including those involved in the Higgs boson, atheism – and, of course, shenanigans. It is Krauss's atheism that is at war with his science – not God. The philosopher Ludwig Wittgenstein pointed out that the meaning of a system will not be found within the system. The meaning of the universe will be found where Newton and Clerk Maxwell found it: in God. So what can we say about the Higgs boson? Simply this: God created it, Higgs predicted it and Cern found it. We rightly celebrate the last two – what about the first?

Clerk Maxwell's answer is above the door of the most famous physics laboratory in the world: the Cavendish in Cambridge: 'The works of the Lord are great, sought out by those who have pleasure in them.'

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