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#215 Lawrence Krauss' Response and Perspective

May 30, 2011



Hey Dr. Craig. Dr. Krauss has written a post-mortem of his debate with you last week. In it he raises a number of objections to your method and your arguments. I was wondering if you could respond to it. Here is the note:

Lawrence Krauss vs. William Lane Craig
by Lawrence Krauss

It sometimes surprises me, although it shouldn't, how religious devotees feel the need to regularly reinforce their own convictions in groups of like-minded individuals. I suppose this is the purpose of regular Sunday church services, for example, to reinforce the community of belief in between the rest of the week when the real world may show no evidence of God, goodness, fairness, or purpose.

Nevertheless I was not prepared for the self-congratulatory hype that I have seen spouted on the web, and have received in emails, including a typically disingenuous email from Wiliam Lane Craig to his followers regarding a debate I had with him in North Carolina last week. While carrying out the debate in the first place was something that broke my normal rules--as I said during the debate, I far prefer civil conversation and discourse as a way of illuminating knowledge and reality--I will break another rule and write this blog-like note on my own perspectives, in the hope that it may circulate and counter some of the nonsense that has propagated in the fundamentalist and religious blogs of late. Perhaps Craig will post this on his blog and send it out as well.

I believe that if I erred at all, it was in an effort to consider the sensibilities of the 1200 smiling young faces in the audience, who earnestly came out, mostly to hear Craig, and to whom I decided to show undue respect. As I stressed at the time, I did not come to debate the existence of God, but rather to debate about evidence for the existence of God. I also wanted to demonstrate the need for nuance, to explain how these issues are far more complex than Craig, in his simplistic view of the world, makes them out to be. For this reason, as I figured I would change few minds I decided also to try and illustrate for these young minds the nature of science, with the hope that what they saw might cause them to think. Unfortunately any effort I made to show nuance and actually explain facts was systematically distorted in Craig's continual effort to demonstrate how high school syllogisms apparently demonstrated definitive evidence for God.

Let me now comment, with the gloves off, on the disingenuous distortions, simplifications, and outright lies that I regard Craig as having spouted. I was very disappointed because I had heard that Craig was more of a philosopher than a proselytizer, but that was not evident the other evening.

Craig began with an attempt to demonstrate his scientific and mathematical credentials by writing a rather meaningless equation on this first slide, which he then argued would be the basis for his 'evidence'. The

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equation, in words said that if the probability, given the data, gave one a greater than 50% likelihood for God's existence, then this was evidence. He even presented this as a pseudo- Bayesian Argument.

The problem is that using mathematical probabilities in this fashion ONLY makes sense if you have a well defined probability measure, and if one can check that the conclusions one draws are not sensitive to one's priors. He did not explain this at all, nor do I think he understood it when I tried to explain it to him. For the rest of the evening Craig simply proceeded to spout his claimed evidence, and then proceeded to state that each gave him a greater than 50% belief in God. The whole purpose of the mathematical nonsense at the beginning was to give some kind of scientific credibility to a discussion which was anything but. It was disingenuous smoke and mirrors. (Moreover, as I tried to explain, in modern scientific experiments, merely finding an unexpected result, with say only a 20% chance of being wrong, is not sufficient to establish evidence. One needs to go to much higher levels of confidence, especially if the claim being made disagrees with all other evidence. It is hard to think of a grander claim than evidence for a divine being who creates the universe without apparent purpose, dominated by dark matter and dark energy and containing hundreds of billions of galaxies, lets it evolve untouched for billions of years, and then roughly a million years into human evolution decides to intervene at a time before Youtube or any other objective recording and archiving tool was available.)

Next, if one is going to frame the argument scientifically, as I argued is essential when discussing empirical evidence, which Craig later took great pains to disavow, one must point out that in science when one is trying to explain and predict data, one tries to explore all possible physical causes for some effect before resorting to the supernatural. Happily it is precisely this progress in our natural philosophy that ended such religious atrocities as the burning of witches. In each and every case the actual syllogism that one ended up with was:

1. Craig either doesn't understand how something could happen, or instead believes that events happened that confirmed his pre-existing belief system.
2. In the absence of understanding physical causes or exploring alternatives, this implies evidence for the existence of God.
3. Therefore there is evidence that God exists.

This is what I framed as the "God of the Gaps" argument and I continue to view, upon reflection, most of the claims of Craig as falling in this well-known theological trap.

Let me work backwards through his 5 "arguments":

1. The resurrection of Jesus, and that fact that the followers of Jesus were willing to die for their beliefs provides evidence of God: I admit that this claim is so sloppy and fatuous that in an effort to demonstrate some margin of respect for Craig I tried to avoid it for as long as I could. Craig argued that most New Testament scholars believe in the resurrection. Even if this were true, though Craig provided no evidence of this, this of course is simply proof that New Testament scholars have an a priori faith that guides them. It is like claiming that most Islamic scholars may believe that Mohammed actually ascended to heaven on a horse. In the first place, there are no definitive eyewitness accounts of these events, and in the case of the claimed resurrection the scriptures were written decades after the claimed event, and the different accounts are not even consistent. Not only are there serious theologians who doubt the resurrection, there are historians who doubt the historical existence of Jesus himself. Whatever one's views in this regard, however, one must ask oneself the simple question: Is it more likely that all known physical laws were suspended so God could demonstrate divinity--and moreover demonstrate this in a hackneyed way that recreated previous resurrection myths, down to the number of days before being raised from the dead, of several previous, and now long-gone religious cults--or is it more likely that those who were preaching to convert fabricated a resurrection myth in order to convince those to whom they were preaching of Christ's divinity? Finally, the remarkable, and completely trite claim that the fact the Christians were willing to die for their beliefs demonstrates the validity of these beliefs would be laughable, if it weren't so pitiful. Especially, as I indicated during the event, in light of the fact that people were recently willing to fly planes into skyscrapers because of their beliefs in a religious framework that I know Craig has openly disavowed. Throughout history people have been willing to die for their beliefs, and it is often the beliefs one is willing to die for that are most suspect. Did

Roman soldiers believe in Romulus and Remus. Did Viking warriors believe in Thor. Did Nazi soldiers believe in the superiority of the Aryan race. I found and still find Craig's statement not only facile, and not even worthy of a high school debater, but I find the claim offensive.

2. FineTuning: The appearance of design is one of the most subtle and confusing aspects of our Universe. Charles Darwin, with his Origin of Species, brilliantly and masterfully explained how the modern world, with its remarkable diversity of life forms may have the appearance of design without any design at all. It was one of the greatest and most striking scientific discoveries of all time, and it is the basis of modern biology and medicine, leading to countless other discoveries that have continued to save countless lives. Craig is aware, from his superficial reading of cosmology, of fine tuning problems in Cosmology, which he then immediately argued requires the existence of intelligent life, implying purpose to the universe. Not only does he fall prey to the same fallacy that those who, before Darwin enlightened us, ascribed design in biology fall prey to, he also continually misrepresented the nature of any apparent fine-tuning of quantities that we currently may not understand from first principles. I tried to explain to him that the current entropy of the universe is not fine tuned, nor need the initial entropy be fine tuned, because Inflation provides a mechanism to wipe out initial conditions and produce huge amounts of entropy, without God. I tried to explain to him that the Cosmological Constant, which is perhaps the most confusing finely tuned parameter we know of in the Universe, is fine tuned in a mathematical sense, compared to the naïve value we might expect on the basis of our current understanding of physical theory. While it is also true that if it were much larger, galaxies would not form, and therefore life forms that survive on solar power would not be likely to form with any significant abundance in the universe, I also explained that if the Cosmological Constant were in fact zero, which is what most theorists had predicted in advance, the conditions for life would be, if anything, more favorable, for the development and persistence of life in the cosmos. Finally, even if some parameters in our currently incomplete model of the universe do appear fine tuned for human life to be possible, (a) we have no idea if other values would allow other non-human-like intelligent life forms to evolve, since we have no understanding of the locus of all possible intelligent life forms. And, beyond this, just as bees are fine tuned to see the colors of flowers which they can pollinate as they go about their business does not indicate design, but rather natural selection, we currently have no idea if the conditions of our universe represent a kind of cosmic natural selection. If there are many universes, for example, as may be the case, and as are predicted in a variety of models, none of which were developed to address God issues, we would certainly expect to find ourselves only in those in which we can live. All of these are subtle and interesting issues worthy of discussion by knowledgeable and honest intellects. I found Craig to be lacking in both of the qualities during his discussion of this issue.

3. Absolute Morals: Craig argued that the existence of absolute morality gives evidence for God. Once again this is simple minded. Indeed in a meeting we convened at my Origins Project of distinguished philosophers and neuroscientists we debated the subtle issues of morality and human evolution, the possible variants of morality, and a host of other issues, without once ever resorting to God. As I tried to explain to Craig, paraphrasing from Steven Pinker, if there were a God, either God would have the choice to determine what is right and wrong or not. But in this case, if God determined that raping and murdering 2 year-olds is morally acceptable would it be so? If not, as reason and experience suggests, then God really has to resort to other considerations, kindness, compassion, etc (except for the Old Testament God!), on which to base God's decisions. But if that is the case, why not just dispense with the middle-man? Lastly, if there is evidence that God provides absolute Morality, it is missing from the world of our experience, where different religious groups, all of whom claim divine inspiration, have incompatible moral views, often leading to horrendous and violent acts against women and children, for example. Indeed, the Old Testament is full of such acts.

4. Contingency: Frankly the argument that humans or the universe do not have to exist but they do as providing evidence for God is something I find unfounded, so I will not devote any more words here to this subject. Many 'contingent' phenomena occur by natural causes, from earthquakes to snowflakes and I do not have to invoke God's will to explain them. What applies to earthquakes and snowflakes applies to the Universe. Just because I cannot yet explain the origin of the Universe does not imply the existence of God...again God of the Gaps.

5. Our Universe had a beginning, therefore God must have created it: Actually the issue of the beginning of the Universe is the only truly interesting question worth discussing here. A host of scientific arguments need

to be discussed here, and there is no doubt the question of chicken and egg is a vexing one for cosmologists as well as theologians. However, let me make a few points here: (1) All things that begin may have a cause, even if the cause is rather obscure and purposeless. However, what is important to note is that every known physical effect whose cause we understand has a physical cause. There is no reason therefore to assume the same will not be true of our universe itself. (2) There are no arguments that our universe need be unique and not derived from something pre-existing, or even eternal. Indeed, the Ekpyrotic Universe promoted by Turok and Steinhardt, which I don't find compelling, argues for potentially eternal periods of expansion and contraction. Craig doesn't understand the physics. (2) I continued to try and explain that quantum gravity may imply that space and time themselves are created at the moment of the big bang. This is a rather remarkable statement if true. But if it is true, in the absence of time itself, how one can ascribe arguments based on causality is unclear at best.

This last point illustrates what I tried hardest to explain. Classical human reason, defined in terms of common sense notions following from our own myopic experience of reality is not sufficient to discern the workings of the Universe. If time begins at the big bang, then we will have to re-explore what we mean by causality, just as the fact that electrons can be in two places at the same time doing two different things at the same time as long as we are not measuring them is completely nonsensical, but true, and has required rethinking what we mean by particles. Similar arguments by the way imply that we often need to rethink what we actually mean by 'nothing', from empty space, to the absence of space itself.

What I hoped I could convey to the truly open minded intellects in the audience, of which of course Craig was not one, was that the amazing effort to understand how the universe works reveals wonders far more remarkable than those presented by Bronze age myths, developed before we had any clear understanding of how the universe works. Simply arguing that one doesn't understand the results, or doesn't like the results and therefore one has to resort to supernatural explanations, which was the crux of Craig's rather monotonous repetition of his syllogisms, is indeed intellectually lazy, as I did say at the time.

I have taken great effort to describe our actual understanding of the Universe and its implications for understanding how it might be possible for something to come from nothing, i.e. non-existence, in my new book, which will come out in January of 2012.

http://scienceblogs.com/pharyngula/2011/04/lawrence_krauss_vs_william_lan.php

Grace,

Kiefer

 United States



DR. CRAIG'S RESPONSE

A Dr. Krauss was evidently smarting after our debate on "[Is There Evidence for God?](#)" at North Carolina State! I have delayed responding to his comments, so that cooler heads might prevail.

When Is There Evidence for God?

I realized from the start that the question proposed for debate was unusual in that it did not ask whether God exists, but merely whether there is evidence for God. So what does it mean to say that there is evidence for the hypothesis that "God exists"? Probability theory defines this as saying that the probability of God's existence is greater given certain facts than it would have been without them ($\Pr(G | E \& B) > \Pr(G | B)$). Far from being "meaningless," this construal of

the question under debate should be non-controversial. Moreover, it does not presuppose a frequency model of probability, as Dr. Krauss seems to assume.

Dr. Krauss seems to think that I was arguing on the basis of the above that the probability of God's existence is greater than 50% ($\Pr(G | E \ \& \ B) > 0.5$). But I explicitly said in my opening statement that I would *not* be discussing that probability. For that would involve assessing the so-called prior probability $\Pr(G | B)$ of God's existence given the background information alone, thereby turning the debate into a debate over God's existence, which was not the topic. Dr. Krauss seems to think that the prior probability of God's existence is very low. I happen to disagree; but that assessment was irrelevant to our debate topic that evening.

Dr. Krauss caricatures my arguments as "God of the gaps" reasoning. But, as I explained, whatever scientific evidence I presented was not for God but for religiously neutral statements like "The universe began to exist" or "The fine-tuning is not due to physical necessity or chance." These are obviously statements to which scientific evidence is relevant. They may then serve as premisses in a philosophical argument for a conclusion having religious significance. There is no gap here wanting to be filled. Moreover, as the second of these two examples illustrates, a defense of these premisses obviously involves an exploration of alternatives. Rather than misconstrue my arguments, Dr. Krauss needs to engage directly with the evidence I presented for these two premisses.

The Existence of Contingent Beings

It is distressing to me to see how completely an intelligent physicist misunderstood this classic argument for God's existence. If even *he* can't understand it, what hope is there for undergraduates? We can only hope that they have encountered the argument in an Intro to Philosophy course at some time and so have some inkling of what it is about. Obviously, one cannot explain why there are any contingent beings at all by appealing, as Dr. Krauss would, to a contingent being beyond the universe.

The Beginning of the Universe

Dr. Krauss belatedly presents three objections to this argument which he did not raise during the debate: (1) Every physical event has a physical cause. Notice that this is not an objection to either of the two premisses in the deductive formulation of the argument I gave. Therefore, it does nothing to defeat the conclusion that the universe has a cause. Once we have reached that conclusion, the question will then arise whether this cause can be physical. On the standard Big Bang model it cannot be physical, since spacetime begins at a cosmic singularity before which there was nothing, that is, not anything at all. That would give us good reason to think that not every physical effect must have a physical cause. I argued that even on viable non-standard cosmogonic models, the implication of the Borde-Guth-Vilenkin theorem is that the universe and even the multiverse, should there be such a thing, had an absolute beginning. Therefore, we have good grounds for thinking that the cause is not physical.

(2) The Ekpyrotic Cyclic model of Paul Steinhardt and Neil Turock (which Krauss himself does not accept!) will avoid the beginning of the universe. The Ekpyrotic Cyclic model is precisely one of those higher dimensional "brane" cosmogonies covered by the Borde-Guth-Vilenkin theorem.¹ Therefore, it cannot be past eternal. (And I don't understand the physics?)

(3) In certain quantum gravity models, space and time are created at the moment of the Big Bang itself. Exactly! That is why semi-classical models like the Hartle-Hawking "no boundary" proposal or Vilenkin's "quantum tunneling" model support the premiss that the universe began to exist. What they do not and cannot do is explain how being can come from non-being. Dr. Krauss promises to tell us in January of 2012. I wait with bated breath.

Dr. Krauss adds that if time begins at the Big Bang, then we may need to re-think what we mean by causality itself. I suspect that he thinks so because he is working with some physically reductionistic analysis of causation. He is doubtless correct that such analyses will be exposed as untenable when called upon to explain the origin of the universe.² But however challenging the beginning of the universe may be for such reductionistic analyses, it will not do anything to overturn the metaphysical principle that *out of nothing nothing comes*. Since I hold that the universe came about through an exercise of agent causality simultaneous with the beginning of the universe, Dr. Krauss would have to show that similar challenges would arise for my view.

The Fine-Tuning of the Universe

Prof. Krauss now appears to deny (not merely tries to explain) the fine-tuning of the universe. This is very surprising, since otherwise sober scientists would not be flocking to Many Worlds hypotheses to account for the fine-tuning if there were really nothing crying out for explanation. In the debate itself, I gave as examples of fine-tuning the subatomic weak force, the cosmological constant, and the low entropy condition of the early universe.

Dr. Krauss would appeal to inflationary scenarios to explain away the initial low entropy condition. But as Roger Penrose has insisted, any such explanation is “misconceived,” since the second law of thermodynamics will require that whatever condition existed prior to inflation in a single universe scenario will have a lower entropy than the post inflation phase,³ and in a multiverse scenario one must deal with the “invasion of the Boltzmann brains,” an objection which I pressed in the debate and on which Dr. Krauss was strangely and noticeably silent.

As for the cosmological constant, what Prof. Krauss fails to appreciate is that that constant exhibits what Robin Collins calls “one-sided” fine-tuning, that it is say, while it may be decreased without detriment to life, it cannot be much increased without catastrophe. It is exquisitely fine-tuned for intelligent, interactive agents in that its life-permitting range is unfathomably tiny compared to its range of possible values.

Dr. Krauss doesn't respond to the example of the weak force. These three examples are just a few of the many constants and quantities that must be finely tuned if the universe is to permit intelligent, interactive life.

Dr. Krauss also denies that the universe is fine-tuned for life because “we have no idea if other values would allow other non-human-like intelligent life forms to evolve.” Why has this simple answer not convinced the majority of cosmologists today to simply dismiss fine-tuning? The reason is because in the absence of fine-tuning not even chemistry, not even matter would exist, much less planets where life might evolve and flourish. The simple answer underestimates the truly disastrous effect of altering the constants and quantities. Dr. Krauss may realize this, for he tries to justify the simple answer by saying, “we have no understanding of the locus of all possible intelligent life forms.” Now here we have a plain misunderstanding on his part. In dealing with fine-tuning we are not concerned with the loci of *all possible* life forms, but only with loci governed by *the same laws of nature* as ours (but with different values of the constants and quantities). That is why we can predict what the world would be like if the values of the constants and quantities were slightly altered. And the point is that almost all such worlds are bereft of intelligent, interactive agents, so that a world chosen randomly from the ensemble of worlds has no meaningful chance of being life-permitting.

Finally, Dr. Krauss appeals to the Many Worlds hypothesis to explain any fine-tuning that exists. He opines, “If there are many universes, . . . we would certainly expect to find ourselves only in those in which we can live.” This assertion is either trivial or patently false. The sense in which the consequent is true, namely, we cannot observe a universe incompatible with our existence, is trivial and independent of the antecedent clause. But if Dr. Krauss means to say that our observation of a highly improbable, fine-tuned universe is explained by a self-selection effect, namely, that observers must observe the universe to be fine-tuned, then his assertion is false because, as I explained in the debate, observable worlds populated with Boltzmann brains have not been shown to be improbable, in which case we have no reason whatsoever to expect to find ourselves in a world in which we embodied, interactive agents can live.

Objective Moral Values and Duties

Dr. Krauss apparently takes my Divine Command Theory to be a sort of voluntarism, according to which God arbitrarily makes up moral duties. But so to think is to be inattentive to what I said. On my view God is the paradigm (not merely an exemplification) of perfect goodness. He is essentially kind, compassionate, impartial, generous, and so forth, and His commands necessarily reflect his character. Therefore, there is no possible world in which He commands murder and rape to be our moral duties.

Why not dispense with God? Because then one has lost any foundation for *objective* moral values and duties. Notice that Dr. Krauss was at a complete loss to tell us why on his naturalistic view morality would be anything more than the subjective by-product of biological and social conditioning.

Dr. Krauss' final complaint, that different religious groups have different moral views, is just irrelevant, first, because we are

dealing, not with moral epistemology, but with moral ontology, and, second, because the existence of incorrect moral views does nothing at all to invalidate the view which is, in fact, correct.

The Historical Facts concerning Jesus of Nazareth

It is truly sobering to find an eminent physicist, one who teaches at a major state university, asserting such nonsense as that “there are historians who doubt the historical existence of Jesus himself.” If such an intelligent person can be so ignorant of historical studies and so easily induced to embrace this sort of drivel from the internet and YouTube, what hope is there for the average man?

Prof. Krauss once again shows himself to be inattentive to my argument. I did not assert that “most New Testament scholars believe in the resurrection.” I have no idea whether that is true. Rather I said that most New Testament scholars accept the historicity of the three facts I mentioned concerning the fate of Jesus: (i) the discovery of his empty tomb, (ii) the post-mortem appearances of Jesus, and (iii) his disciples’ coming to believe that God had raised him from the dead. These three facts are multiply and independently attested in very early sources and are consistent in their core. That’s why most historical scholars accept them on historical grounds, not out of theological conviction.

I then claimed that the resurrection of Jesus is the best explanation of these facts. Dr. Krauss evidently misunderstands the two steps of the argument. The willingness of disciples to die on behalf of the truth of their proclamation of the resurrection is evidence for fact (iii) mentioned above, not for the resurrection itself. Their willingness to die shows the sincerity of their belief, in contrast to the old conspiracy theories. Dr. Krauss claims that it is more probable that some conspiracy theory is true than that a miracle occurred. This merely reiterates his allegiance to Hume’s argument against the identification of miracles, which he mentioned in his first speech and which, as I explained, has been exposed as demonstrably fallacious in light of modern probability theory, most recently, for example, by the agnostic philosopher of science John Earman of the University of Pittsburgh in his *Hume’s Abject Failure*.⁴ (By the way, Dr. Krauss’ intimation that belief in Jesus’ resurrection derives from the influence of pagan myths is also based on scholarship that is over 100 years out of date.⁵) Dr. Krauss really doesn’t know what he’s talking about in this area.

Concluding Remarks

I think it is evident that all of Prof. Krauss’ easy refutations misfire. Dr. Krauss is absolutely correct that these arguments involve subtle and interesting issues, and I hope that in the future he will make a genuine effort to engage more substantively with them.⁶



Notes

¹ See discussion of this and other models in William Lane Craig and James Sinclair, “The *Kalam* Cosmological Argument,” in *The Blackwell Companion to Natural Theology*, ed. Wm. L. Craig and J. P. Moreland (Oxford: Wiley-Blackwell, 2009), pp. 101-201; see further William Lane Craig and James Sinclair, “On Non-Singular Spacetimes and the Beginning of the Universe,” in *Scientific Approaches to Classical Issues in Philosophy of Religion*, ed. Yujin Nagasawa (London: Macmillan, forthcoming).

² See Quentin Smith, “The Concept of a Cause of the Universe,” *Canadian Journal of Philosophy* 23 (1993) 1-24.

³ Roger Penrose, *The Road to Reality* (New York: Alfred A. Knopf, 2005), pp. 762-5.

⁴ John Earman, *Hume’s Abject Failure: The Argument against Miracles* (Oxford: Oxford University Press, 2000).

⁵ For an entertaining popular level exposé of this hypothesis, see Mark Foreman, “Challenging the *ZEITGEIST* Movie: Parallelomania on Steroids,” in *Come, Let Us Reason*, ed. Paul Copan and William Lane Craig (Nashville: Broadman and Holman, forthcoming).

⁶ All five of these arguments are explored in considerable depth in *The Blackwell Companion to Natural Theology*, ed. Wm. L. Craig and J. P. Moreland (Oxford: Wiley-Blackwell, 2009). On the contingency argument see Alexander Pruss, “The Leibnizian Cosmological Argument,” pp. 24-100; on the beginning of the universe see William Lane Craig and James Sinclair, “The *Kalam* Cosmological Argument,” pp. 101-201; on fine-tuning see Robin Collins, “The Teleological Argument: An Exploration of the

Fine-Tuning of the Universe," pp. 202-281; on the moral argument see Mark D. Linville, "The Moral Argument," pp. 391-448; and on the resurrection of Jesus see Timothy and Lydia McGrew, "The Argument from Miracles: A Cumulative Case for the Resurrection," pp. 593-662. As hard as it may be for the uninitiated to believe, Dr. Krauss has scarcely scratched the surface of these arguments.

- William Lane Craig

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