

Edward B. (Ted) Davis

“A History of the Creation–Evolution Conflict”

Episode 27 (transcript of audio) of The Advent of Evolutionary Christianity
EvolutionaryChristianity.com

Note: *The 38 interviews in this series were recorded in December 2010 and January 2011.*

Michael Dowd (host): Welcome to Episode 27 of “[The Advent of Evolutionary Christianity: Conversations at the Leading Edge of Faith.](#)” I’m [Michael Dowd](#), and I’m your host for this series, which can be accessed via [EvolutionaryChristianity.com](#), where you too can add your voice to the conversation.

Today, [Ted Davis](#) is our featured guest. [Ted](#) is a Distinguished Professor of the History of Science at [Messiah College](#) in Pennsylvania, where he also directs the Central Pennsylvania Forum for Religion and Science. With support from the National Science Foundation and the John Templeton Foundation, Ted is currently writing a book about the religious beliefs of prominent American scientists. He’s the past-president of the [American Scientific Affiliation](#), a fellowship of scientists who share a common commitment to the Bible and to the practice of integrity in science. Here we discuss “A History of the Creation–Evolution Conflict.”

Host: Hello Ted Davis, and thank you for joining this conversation on Evolutionary Christianity.

Ted: Well hello, Michael Dowd, and thank you for inviting me to be part of this conversation.

Host: Before I ask you about your academic background and contributions, I’d love to hear just a little more personally, like your testimonial: How did you grow up religiously? And was science a part of it? Also, how did you come to the faith relationship that you now hold? But also, how did you come to the embrace of science that you now have?

Ted: Well, my interest in science goes back a long way, at least to elementary school. I don’t remember exactly when it began. I was always interested in astronomy, and I wanted to read as much as I could about science. I grew up at the home of a Presbyterian minister, so we moved around a little bit.

Host: You’re a preacher’s kid?

Ted: Yes, in the Philadelphia area. My father was an evangelical Presbyterian minister. After he retired, he was named the moderator of the Philadelphia Presbytery for a year or two. He was

always involved in evangelical causes within the Presbyterian Church. My own religious understanding was shaped in that home and in that church. I recall, specifically, beginning to understand the Gospel within an evangelical sense when I was a teenager, and embraced that. I responded to what I still believe, and believed at the time, was the love of God being extended to me through the sacrifice of Christ. So I've had that understanding of Christian faith most of my life. I've simply begun to reflect on that more, as an adult. I've been reading theology now, as opposed to the time when I really didn't read much theology; I just understood the gospel message as it was presented to me.

Host: I'm curious, when did you begin to feel *called* to the kind of ministry that you now have?

Ted: Well, it took a little while. I was in my early twenties when I began to realize that the direction I wanted to take was theology and science, or Christianity and science generally. Because of my interest in astronomy—partly for that reason—I studied physics in college. I had the opportunity to be an intern at the [National Radio Astronomy Observatory](#) in Charlottesville. I was a research assistant there for three different six-month periods. That gave me an inside view of what modern science really is about—how it's done, what the scientific life is like. I worked for some fairly well known people at that time, and some young people who later became very well known—one of them, in fact, is [Seth Shostak](#), who's now the director of the [SETI project](#) in California.

Because of my glimpse of this, I actually ended up concluding I didn't really want to become a scientist. I can't put my finger on it, but I just didn't quite have a feeling for the scientific life as much as I thought I would have. So I decided not to continue my education in physics beyond a bit of graduate work. I taught high school science: physics, chemistry, and some mathematics in Philadelphia for a few years. It was during that time when I became fascinated with questions about science and the Bible, and then with science and Christianity more broadly.

I remember another Christian science teacher, who just passed away this past year, the late Frank Roberts, who had a geology doctorate as well as a seminary degree. He introduced me to the [American Scientific Affiliation](#) while I was a high school teacher. And it was through the ASA, which used to have a Philadelphia section, that I learned about the work of people like [Richard Bube](#), [Bernard Ramm](#), and [Ian Barbour](#)—all of whom have been influential on the development of my ideas. So, it was at that point when I was teaching high school science and math that I realized I really wanted to learn more about Christianity and science. I also decided I wanted to teach about it at the college level. So I decided to pursue doctoral work in history and philosophy of science, and ended up in [Indiana University](#) in Bloomington.

I think that decision arose partly from realizing that one of the factors that had led me to major in physics in the first place was reading some popularizations of the history of physics when I was in high school, like: [The Evolution of Physics](#) by Einstein and Leopold Infeld, or [The Strange Story of the Quantum](#) by Banesh Hoffmann, and [Men Who Made a New Physics](#) by Barbara Cline—books like that. They're not professional histories of science. In many ways,

they're not very reliable on certain details. But they were well written and very interesting, and they drew me into that type of a conversation, of what would have been the development of these scientific ideas. As I realized in my last couple of years as an undergraduate, that's what really had attracted me into physics more than anything else: these great ideas about the universe. We can call it, broadly speaking, natural philosophy.

I also completed a couple of courses in the history of science as a senior in college, and I had very much enjoyed courses in art history and music history. In fact at one point, I did briefly consider becoming an art historian rather than an historian of science. So, it was the history of ideas and their expression in Western culture that I began to realize was my top interest—but especially the history of these ideas and their intersection with Christian thought. This was in the 1970s. At that time, there weren't any academic programs in science and religion, or perhaps I would have taken that route instead. I can't replay the history; I don't know how that would have come out. But it's true that historians of science have been writing about science and religion for a very long time. Indeed it's no accident that in the old Templeton course program (the program they had for developing courses on science and religion), when they picked model courses, they picked five—and three of those five were taught by historians of science. I don't think that's an accident. That particular academic field has been dealing with science and religion for longer than most other academic fields.

Host: Say a little bit more about that, because of course that's *your* academic field, the history of science. But you also teach courses related to science and religion—and of course you write about science and religion. You mentioned the [American Scientific Affiliation](#), which to my knowledge is the oldest American organization for Christians in the sciences. You also mentioned [Richard Bube](#), who was a huge influence on me. In fact, when I was a student at [Evangel College](#) and really grappling, really struggling with how to bring these two together, it was his writings, as the president of the [ASA](#) at that time, that helped me. I read dozens of his papers, and he was very influential for me—as it sounds like he was for you. So, say a little bit more about how that all comes together for you.

Ted: It's a natural fit for me. As I say, I encountered the ASA when I was still teaching high school, at the time when my interest in history of science was emerging, becoming clearer in my mind that *that's* what I wanted to do. It was the ASA that more than anything else had helped formalize that interest in history of science and Christianity for me. Richard Bube, if I remember correctly, either had just stepped down from being editor of the journal, or still was the editor of the ASA journal. But certainly for a number of years, he had edited the ASA Journal, which used to be called, [The Journal of the American Scientific Affiliation](#). It's now called, [Perspectives on Science & Christian Faith](#).

Bube was a solid-state physicist at [Stanford](#), who for many years taught a course on Christianity and science at Stanford—until the politically correct environment of Stanford forced him to stop doing that, some years ago. But until he retired, he was known as one of the leading people, from the evangelical Christian side, on dealing with issues in science. He wrote

several books, most of which were serialized first in the journal. One of those books called, *The Human Quest*, was especially influential on my thinking. That's a book where he shows, more than any book I had seen at that point, how theology can pose questions to science—just as science can pose questions to theology—and that there can be this very rich interaction between a traditional Christian theology and modern science. I guess it's not an accident that Bube was from the physical sciences, because most of the people who have written in important ways about theology and science have been physical scientists.

Host: You mean physicists as opposed to, say, biologists or anthropologists?

Ted: Exactly. I mean, people from physics and chemistry and cosmology, as opposed to biologists. I'm not saying anything against the biologists. I'm just saying, observationally, that's been true of the field in theology and science. I think it's probably because physicists are used to dealing with fundamental questions about nature.

Host: Ted, as a historian of Christianity and science, how does your scholarship contribute to our understanding of science and religion? What general goals do you hope to achieve in your scholarly work?

Ted: I have two main goals, Michael. First, I want to debunk the warfare view of the history of science and religion. And second, I want to help replace it with a far more accurate history—which will, *ipso facto*, be much friendlier to people of faith. By writing an accurate history, we're going to end up in a better place, because the warfare view is just so inaccurate.

Host: Well, Ian Barbour, who was my first guest in this series, of course talks about that conflict view—but I've never heard it before as “warfare.” I like that! Say more about this, what you call the “warfare” view of the history of science and religion. Where did that come from?

Ted: The reason why historians often refer to it as the warfare view or the conflict view is because of the title of one of the books that has espoused this view: a book by [Andrew Dickson White](#) called, [A History of the Warfare of Science with Theology in Christendom](#).

Host: When was that written?

Ted: Well, it took different forms. Its first form was a lecture that he gave at the Cooper Union in New York shortly after the Civil War, but it evolved into a two-volume work published in 1896. He was an historian, interestingly enough. I think he was at one point president of the American Historical Association, but he seems to have been an historian who consulted the original sources about as often as he watched television. He tended to rely on the works of other people who had quoted other people quoting other people, and he never really pulled those

chains back to the original sources, as far as I can tell from looking at his book. His footnotes give the very misleading impression that he has consulted all the sources, when he fairly often quotes things that people never said and describes their views as exactly the opposite of what they actually were. He does this with people even as important as John Calvin and John Wesley. It's a highly unreliable book. That's where the name "warfare" often comes from.

The roots of the warfare view are in Enlightenment atheism, and that gives rise in the late eighteenth and early nineteenth century to something that is perhaps best called, "the religion of science"—the type of thing that [Auguste Comte](#) was interested in. He wanted to see traditional religion replaced by science. The French, after the revolution, set up a calendar and public events based on a religion of nature or a religion of atheism, one or the other. It kind of has elements of both in it. As a way to do away with "the terrible trial," as Voltaire described the French Church, they wanted to do away with all the trappings of traditional Christianity.

That particular view, the atheist type of religion of science, sees science and religion as mutually exclusive ways of viewing the world—and it tries to replace traditional religion with science. It really is a kind of religion, as [Karl Giberson](#) has so well shown in his book, [Oracles of Science](#), which I know that he discussed in your interview. People such as Richard Dawkins, of course, don't realize this is what they're doing—or don't acknowledge that's what they're doing (replacing one kind of religion with another), but that's what they're doing. In that view, that's a hardcore warfare view.

Far more common, I think though, is what White was up to. White and another nineteenth century American, [John William Draper](#), who was a chemist at NYU, wrote sort of parallel books in the late nineteenth century, in which they presented, what I would call, a kinder, gentler view of the warfare view. This is the version that gives rise to the name 'warfare.' As I said before, it's that book by White, *A History of the Warfare of Science with Theology in Christendom* that presents this view. According to this version of the warfare view, religion is still important for moral reasons. We don't want to get rid of religion (unlike Dawkins). But *theology* must be swept aside to allow the endless progress of science. On this particular view, theology has never had a productive conversation with science. It's never inspired scientific activity or influenced a valid scientific idea. It's really done nothing but hold back the progress of science. A classic example here would be the trial of Galileo for heresy. I say, *that's* the view that's assembled more than anyone else by Draper and White in post Civil War America.

Now, the warfare view of [Dawkins](#) and [Coyne](#) is more hardcore than that. As I've indicated, they want to eradicate religion in the name of science.

Host: I think that what they're trying to do is keep supernatural, otherworldly religion—what they would think of as "mythic religion"—from steering the ship of civilization. That in the hands of religious fundamentalists—especially when you've got competing religious fundamentalisms around the world and you've also got weapons of mass destruction that are really small and really easy to obtain or getting easier to obtain all the time—I think their concern is that, *that* kind of mythic consciousness interpreted literally could be a danger to human civilization. I don't think it's religion, as such.

You may be right. But as I read them, I don't think it's religion, as such. It's religious fundamentalism—that is, mythic language interpreted in a completely literal way, and that sees the in-group as *our* religious folk and everybody else is the out-group. You can be very kind and loving (and expected to be kind and loving) with the in-group, but you can be practically demonic towards the out-group—and that *that* thinking is not sustainable is the way I read them, at least.

Ted: I think that's a fair way to read them. But it's only a partial way to read them. I think reading them in historical context against this rise of Enlightenment atheism—and the way in which science is seen as a source of objective absolute knowledge, and religion is seen purely as an obscurantist or backward force—that is the problem. For Dawkins, religion is not good: religion is a “virus” and we need to eliminate it. He doesn't discriminate on the kinds of religion that he's talking about here, between what you would call fundamentalism and other kinds of religion. In Dawkins' view, someone like [Francis Collins](#) (who cannot fairly be called a fundamentalist at all) is just as deluded as someone like [Henry Morris](#), because the belief in God *itself* is delusional.

Host: Well, what's the fruitful way forward? Instead of a warfare model, what would be the most accurate and life-giving way of science and religion relating to each other?

Ted: I would say that the very first thing we have to do is fully clear away the warfare model. Not only do we have to confront the claims of people like Dawkins and the other New Atheists. We have to confront them, in my view, partly by having a robust natural theology, but also in part by having a robust critique of the nature of their enterprise itself. The nature of their enterprise as an enterprise which believes that atheism is not only the best metaphysical framework in which to place modern science, but the only one in which it makes any sense. That's what has to be confronted above all, with that type of [New Atheism](#).

I think it's also necessary to say something against the modern form of the White/Draper view—because, as I've said, the White/Draper view is not opposed to religion per se. It's opposed to what White and Draper called, “dogmatic theology”; they often used that description of theology. *Dogmatic* of course was always meant as a pejorative in the same way that the word *medieval* was a pejorative in the late nineteenth century. That's the time when people created the historically myopic idea of “the Dark Ages” and associated the word *medieval* with that. Theology was typically said to be dogmatic or medieval, as if that was all that one could say about it. As a result, you had to discard dogmatic or medieval theology in favor of modern views of God that are said to be much friendlier to science. That's the warfare view as White and Draper presented.

One of the few modern scholars who has recognized this is Stephen Gould. In his book, *Rocks of Ages*, Gould gets it—what he calls the “NOMA” view, “Non-Overlapping Magisteria.” He actually takes this from White. He understands that what White wanted to do was to say

that theology must not make dogmatic claims about reality. And then theology would be able to operate in a separate sphere, apart from science. Now, when he said “dogmatic claims,” he meant things like claiming that Christ had been raised from the dead or that Jesus was divine, things like that. For Gould, that’s part of what he meant by theology minding its own business: not making claims of that sort, which would intrude on the reality created by a naturalistic science.

It’s *that* type of warfare view, I think, that’s been so influential on so many scholars—including many of the leading liberal Protestant scientists and scholars of the past century. They’ve actually bought into the warfare view. I think what they’ve concluded, in effect, is that traditional theology has never really had a productive conversation with science—and that in order to have a productive conversation with science, we need a new kind of theology, a new kind of religion. That’s what White and Draper were arguing.

Host: So beyond this warfare model, beyond this two-worlds model: the work that you are doing and the work that the [American Scientific Affiliation](#) has done, and [BioLogos](#) and others working with conservatives and evangelicals, many of whom are threatened by this issue or also perhaps buy into the warfare way of thinking themselves—you are offering something very different. I want to invite you to speak to:

What is the model that you and other historians of science and other historians of science and religion are offering, in terms of a way to think about this that’s beyond the warfare model?

Ted: Most historians of science are not religious believers. But those of us who study the history of science and religion pretty much agree that historically there’s actually been a very rich conversation between theology and science. There have certainly been instances of genuine conflict, and Galileo in part got caught up in such a conflict in the seventeenth century. There’s no effort here to say that there was *no* conflict historically. What the effort does is to say that the conflict metaphor is woefully inadequate to describe *most* of what has taken place.

There’s so much that does not fit into that one box. The actual historical interaction has been far richer and more complex than the warfare model would ever be able to capture. It’s not a claim that there’s been a harmony either—historically between science and religion. Rather, the interactions themselves are incapable of being described by any single, simple metaphor. Sometimes this is called “the complexity thesis”—even though it isn’t much of a thesis, and it’s associated with people like John Hedley Brooke, a leading historian of science and religion.

Where there is a near consensus is the view that what White and Draper were up to is historically bankrupt; it’s just indefensible. Their glasses, if you will, were colored so badly that they literally could not see anything other than what they wanted to see. In many cases, what they actually created was a false history of science and religion—complete with a Columbus who tries to convince people that the world is round when everyone already knows that it is;

complete with a John Calvin who is supposed to have used the 93rd Psalm against the Copernican system, when he never mentioned the Copernican system at all. So these are the kinds of things that historians have shown about the White/Draper view. Both forest and the trees are wrong in that view.

To see the kind of approach I would take, it might be better if we understand some of the work I've done on early modern theology and science during the scientific revolution. With that work, I've been especially interested in the influence of "theology of creation" on conceptions of scientific knowledge during the scientific revolution. *Theology of creation*: by that I'm referring specifically to a dialogue that takes place both in late medieval theology and in early modern theology and also within natural philosophy itself. It is a dialogue between competing ideas of God's relationship to nature and to the human mind. Sometimes the terms *voluntarist theology* and *rationalist theology* are applied to the poles of this dialogue. It's a dialogue that takes place among Christian thinkers, because nearly everyone who thought about God and nature at that time was a Christian. But it's a dialogue that does have opposite poles.

On the one pole, there are people who take what's called a *rationalist* approach. They tend to emphasize the idea of the human mind being in the image of the divine mind, and the divine language of mathematics being capable of giving us absolutely certain knowledge about the world. And so even after The Fall, we were capable of getting certainty about nature through mathematics. It was thought that God *had* to create through mathematical forms, and we could understand exactly what God had done to the last detail through the use of mathematics.

On the other hand, there's a voluntarist pole in theology, and that's the pole that emphasizes God's voluntary will—hence the terms *voluntarism*. It suggests, as one of the great scholars, M.B. Foster, put it once, that the activity of will is not wholly conformable to the activity of reason: that God has an activity of will that doesn't always match our rational expectations. Another way to put it, God does what he wants, whether or not we can understand it. That side tends to line up with an empirical approach toward nature in the seventeenth century—that we can't dictate to God how creation has to be done; we have to go out and find out for ourselves.

Reijer Hooykaas, the late Dutch historian of science, described the modern scientific method as "rational empiricism," a combination of reason and observation that reflects this dialogue of divine will and divine reason. The theologian Thomas Torrance liked to say that "nature is a contingent order," reflecting the fact that it is a created order, but a *freely* created order. It doesn't have to exist, and it doesn't have to be the way that it is. My work (and that of a lot of other scholars) has shown that something like this *did* take place during the scientific revolution, when the modern scientific method took over from Aristotelian methods. In other words, a theology emphasizing divine freedom in relation to nature and the human mind was closely linked with the development of the modern scientific method.

Host: Ted, I know that you've written on how you find evidence that Christianity *caused* modern science. Is that accurate?

Ted: Not exactly. I don't think that the story of the birth of modern science can be boiled down to the birth of modern scientific method per se as a single factor. I don't think that Christian theology is the sole causal factor in that conversation about the birth of, or even the early, modern scientific method. That would be what the late A. R. Hall once called, "a one-legged stool"—that is, to take a complex phenomenon and explain it in terms of one single factor, however important that factor may have been. I think that one can only *rarely* do this historically. You could say, for example, that if there had never been slavery in America, you probably wouldn't have fought a civil war. I would agree with that—but of course even there, there were other factors. So I didn't want to say *mono-causally* that Christianity caused modern science. I don't think that's right.

Host: Good. I'm glad to hear that, because I probably would've taken issue with that. But I would love to hear how you feel—or the evidence that you see—that Christianity has certainly contributed to the rise of modern science.

Ted: I think Christianity substantially shaped conceptions of scientific method and scientific knowledge during the seventeenth century. As I say, that conversation about divine will and divine reason didn't originate in the scientific revolution. It originates in late medieval theology. And the same exact conceptual language is being used by early modern natural philosophers. People like Galileo, Descartes, Boyle, and Newton are shaped by those very conceptions of the idea of God's will versus God's reason and how we're going to go about understanding the world. They take positions on this, which are not the same. So on the one end, people like Descartes and Galileo line up on the rationalist side of this. And you have people like Robert Boyle and Isaac Newton lining up on the voluntarist side.

Host: So Ted, I'm curious, how do *your* views relate to this modern dialogue? Where do you want this to go, or where has your scholarship led you in this?

Ted: I would say this, that if we're going to be looking as Christians for a theological context in which to place modern science, that theological context ought to be one that emphasizes divine freedom and creative power. A God who cannot determine the nature of nature is not able to create a contingent order. An example of this, on the other side, would be Plato's Demiurgos from his dialogue, *Timaeus*. In that story, as you may remember, Demiurgos begins with some givens. One of the givens is matter, unformed matter. He doesn't create that; it's given to him. Another given is the idea of the good, from which he derives various forms that are then imposed on nature. Another thing is something mysterious called, "The Nurse of Becoming," which is probably something like a principle of possible being. Then the god takes these things and puts them together and is unable to impose forms perfectly on nature, because nature is recalcitrant. Also, that god *must* create; he has no choice. The goodness of the god requires that he create something—and that he create it in a certain way.

That would be the rationalist pole of a creator—whereas, nature doesn't seem to be like

that. Nature *does* seem to be genuinely contingent. It doesn't seem to be something which has to exist for any rational purpose, and it doesn't seem to have to exist in a certain way. I would say that one of the most reliable results that we have from modern cosmology is that nature *is* contingent. We cannot say *why* nature has to exist. There's no *necessity* that nature exist. There's no necessity that it be of the kind that it is—that it indeed be so anthropically fruitful. That seems like a great cosmic accident to many cosmologists. So the contingent feature of nature is right at the forefront.

So I would say then, again, that if we're going to be looking for a theology in which to make a context for modern science, it's going to have to be one that doesn't lose sight of divine freedom and power.

Host: I interpret what you're saying is along these lines: that it's an important task for those of us who consider ourselves religious and theological to look at our religious understandings, our theologies, our concepts, and our doctrines in light of the evidence—what God's been revealing through evidence. Each generation needs to reassess how it understands the core central concepts of our faith tradition in light of the evidence. And that is, I think, a very fruitful, exciting project that we all can contribute to in one way or another.

Ted: I would agree with that. There's just different ways of going about that. But I would certainly agree with the general idea that it is possible that the assured results of science can in fact rule out certain types of approaches to theology and science. An example, of course, would be the fact that the universe is billions of years old—currently they would say something like 13.7 billion years old, and the Earth is something like 4.5 billion years old. And those two facts rule out taking literally the creation story in *Genesis* chapter I, under which God creates a world in six days a few thousand years ago. Almost certainly, that didn't happen. And so one has to look for something *else* as the content or message of *Genesis* chapter I. One possibility is that it is indeed a message for us from our creator, which I think it is. Then, one has to say, "Well, the message must be something else."

Host: I know one of the big shifts for me was around how to interpret that. I now interpret the story of God taking the dust of the ground and breathing into us the breath of life—I interpret that as a poetic way of describing this billions of years process of grace and creativity.

Ted: Perhaps it is, or perhaps it's something else. But it's hard to take that passage in its entirety as a literal blow-by-blow creation story, given what we know about the universe and the Earth and how long they've been around. So it's hard to take literally. Science can certainly rule out some possible ways of approaching it. The danger comes, I would say, when people think that science must be the dominant dialogue partner. The danger here is in assuming that there is no such thing as a transcendent Creator, who is in fact capable of acting outside of or apart from nature at certain times—and, indeed, who is the source of nature itself, the source of the order that we find.

As I said before, I don't believe that it's possible to get a genuinely contingent order without having a God who's able to determine the nature of nature. A God who indeed has the power to raise Christ from the grave, is the kind of God who has the power to determine the nature of nature. That's what the Christian account says: that God has raised Christ from the grave. The kind of nature we have is the kind of nature I would expect such a God to create. A God who can determine the nature of nature, in the first place, is also the kind of God who can re-order nature into a new creation, as he did with Christ. So, that's where I would say, we must not allow an inappropriate kind of naturalism to ride herd on theology.

Host: What would happen if we did? I mean, what's the negative consequences you see?

Ted: Well, I don't think we have Christian faith (to be honest) if we don't understand that the Church began with the belief that Christ had been raised from the grave—not in a symbolic way, but in a quite literal way that just shocked the pants off of the Jewish authors of the Gospels. After all, they had not been expecting this. They were fearful, as you and I would certainly have been. They were fearful after the crucifixion, and they remained skeptical that Christ had returned. But when they actually experienced him in their presence—in some cases, as Paul says, more than 500 at one time—they became convinced that indeed God had done a great act here. And that indeed had implications for who this man Jesus was.

Over the subsequent years, the Church formalized a doctrine of the deity of Jesus and the Incarnation, but I believe those are already implicit in the language of the Gospels and the *Letters* of Paul and Peter. That sort of an event, I think, *defined* Christianity. I really believe that without the Resurrection of Jesus, there would never have been a Christianity at all. That was not just some imagined experience of this, but a literal experience of this.

I don't know, Michael, whether you're familiar with the book by [N. T. Wright](#), called [The Resurrection of the Son of God](#).

Host: Yes, I *am* actually. I haven't read the whole thing but ...

Ted: That's an extraordinarily powerful book. In my opinion, as a historian of Christianity and science, the section on "Easter and History" near the end of that book—if I had written that part of the book myself (which I do not have the professional competence to do), but if I had written that part of the book myself, I would not have changed one single word of that whole section. That's the only book I can think of about which I would say that. Wright's instincts about the biases of Enlightenment historiography are absolutely on target. In my view, his argument that the actual bodily resurrection of Jesus was both a sufficient condition and also a necessary condition for the empty tomb stories and the post-resurrection appearances—as he puts it in the book, I'll just quote him; I'll quote one paragraph of his:

The claim can be stated once more in terms of necessary and sufficient conditions. The actual bodily resurrection of Jesus (not a mere resuscitation, but a transforming

revivification) clearly provides a *sufficient* condition of the tomb being empty and the ‘meetings’ taking place. Nobody is likely to doubt that. Once grant that Jesus really was raised, and all the pieces of the historical jigsaw puzzle of early Christianity fall into place. My claim is stronger: that the bodily resurrection of Jesus provides a *necessary* condition for these things; in other words, that no other explanation could or would do. All the efforts to find alternative explanations fail, and they were bound to do so.

Now, of course I can’t elaborate on that without reading people half the book. *[laughter]* It’s not something that we’re going to be able to do here. I do find that section extremely well done. It’s not really possible for a person to take a truly objective view of something like this. As he says, it’s not so much ...

‘proof’ of the Resurrection, in terms of a neutral standpoint. It is, rather, a historical challenge to other explanations, other worldviews. Precisely because at this point we are faced with worldview-level issues, there is no neutral ground, no island in the middle of the epistemological ocean, as yet uncolonized by any of the warring continents.

Host: I get asked a lot on this question. Typically for me, it’s not a fighting point. I allow for people to have a variety of interpretations of how they think about the Resurrection and how they understand it historically and evolutionarily and that sort of thing.

I want to come back to some of *your* work that we really haven’t touched on yet, in terms of your own understanding of the Scientific Revolution. You’ve written extensively on [Robert Boyle](#) and edited a major work (*the* major work, probably) on him. You contributed to an understanding of [Isaac Newton](#), including the chapter you wrote for the book [Galileo Goes to Jail and Other Myths about Science and Religion](#). So if you could say a little bit about those two, as we begin to wind this conversation down.

Ted: Well, sure. I’ve often been asked why I spent so much of my life working on an edition of the works of Robert Boyle, with a great English scholar: [Michael Hunter](#). How does that fit into my known interest in Christianity and science? Well, to me the answer is obvious. Robert Boyle was probably the most important writer on theology and science of the seventeenth century. I just can’t think of anyone else in quite his category. He thought a great deal about this, and it drove him to write a lot of things. When he was about twenty years old, he wrote in a diary, “He whose faith never doubted, may justly doubt of his faith.” That’s the kind of attitude he took toward *any* issues. He hadn’t really thought about science at that point in his life. He wasn’t writing about science when he said that. He was just thinking of being a thoughtful Christian, generally. He wanted to examine his faith and know that it was his own, and not someone else’s. He did much of his writing on science in relation to Christianity in exactly that kind of an attitude. So he wrote many works on theology and science that have passages in them that are still worth going back to today for their insights.

As for Newton, this is a guy who is much misunderstood today. I had the privilege of

working in graduate school under the greatest Newton scholar of his generation—and perhaps the greatest Newton scholar who’s ever lived. That was the late [Richard Westfall](#). He wrote the definitive biography of Newton, with Cambridge University Press. It’s called, [Never At Rest](#). He is the person more than anyone else who introduced us to the details of Newton’s theology and the level of his interest in alchemy. So, this is a great Newton scholar that I worked under. Yet ironically, the one area on which Westfall and I disagreed was whether or not there had been an interesting interplay between theology and science in Newton’s work. Westfall never thought there had been. And in turn, Westfall depicted Newton as a kind of proto-Enlightenment deist—a man who thought of a distant God who wasn’t intimately related to the Creation.

Now, Westfall did not argue anything about the “clockwork” image for Newton. But a lot of other people, who don’t know Newton nearly as well as Westfall knew him, have made the claim that Newton invented the clockwork image: the idea that the universe is a great clock that ticks on forever, that God doesn’t need to do anything to this clock, and God doesn’t operate the clock on a regular basis. That’s an idea related to deism, ultimately, and the idea also that there’s no spiritual presence in the universe in an ongoing way. Now ironically, Newton in fact rejected that. He explicitly rejected that idea, as seen in the correspondence that he supervised between Gottfried Leibniz and Samuel Clarke.

Clarke was a close confidante of Newton. Clarke was a theologian much younger than Newton who functioned as Newton’s second in a debate that he had with Leibniz. We know that Clarke’s replies to Leibniz were, in effect, written by Newton or gone over heavily by Newton—so that everything Clarke says, he speaks for Newton. And in this debate that Newton and Clarke and Leibniz have, Newton explicitly rejects the idea that the world is a clock at all. “The world is not God’s clock” is basically what he says; God relates to the world in a much more intimate way than that. So that’s one of the popular myths about Newton, that he was the author of the clockwork image and the idea that God is this cold clockmaker who doesn’t do anything with the world—when in fact, Newton thought God had his hands on the world all the time. A few years after he wrote his famous book on *Mathematical Principles of Natural Philosophy* (from which we get modern physics), he almost certainly had the idea that God himself was directly causing gravitation—that there was no mechanical cause of universal gravitation, that a cause that penetrates to the centers of bodies (as he says later in the General Scholium to a later edition of that book), when he speaks about a cause that penetrates to the centers of bodies, he’s almost certainly talking about the omnipresence of God. God is moving the bodies of the universe around in ways that he wants to. Whereas Leibniz considered that notion to be, what Leibniz calls, “a perpetual miracle”; it makes the world a perpetual miracle. From where Newton was coming from, I think that was accurate. It is a perpetual miracle. The world is a perpetual miracle.

Host: I like that concept. I don’t know that I’ve heard that before, “perpetual miracle.”

Ted: John Calvin once said, “The world is a perpetual miracle.”

Host: It forces you to rethink what we mean by the term *miracle* when you think of that. It's like perpetual grace.

Ted: Yes, yes it does, and Newton explains himself. He explains himself in a passage that I don't have in front of me: basically, he goes back to the meaning of the Latin word. The English word *miracle* comes from the Latin participle *miraculum*. It's the participle of the deponent verb *mirari*, which means "to wonder, to be amazed." And so a miracle is something which causes wonder and amazement. This indeed ought to be a source of wonder and amazement—this universe in which we live.

Host: Amen! ... Ted, I know another topic you've written about in the history of science and religion (especially here in the United States) is the period in the 1920s: the Scopes Trial, of course, in the mid 1920s. And it was a very controversial time for evolution in the Christian faith. But I'm wondering how much things have changed since then. Can you speak a little bit to your scholarship there and also your understanding now?

Ted: I've not written directly about the trial itself—but I have written about, what you could call, the iceberg. The Scopes Trial in a sense is the tip of the iceberg. We look back today at the 1920s, about science and religion then, and we immediately think of that event. That's what we see; that's what's above our waterline. Whereas behind that, there was a great controversy raging among American Christians concerning how to understand modern science, how to respond to it. It was a highly polarized time. On the one hand you had scholars calling themselves *modernists*, as the term they used in self-description and which applied to a school of thought that had existed since the late nineteenth century. In their view, science (as a form of knowledge) meant that Jesus was not divine, that he had not been raised bodily from the grave, that there was no objective efficacy to prayer, that there was no substitutionary atonement. Science meant all of those things for them. Indeed there was a leading modernist scientist, a biologist named Edwin Grant Conklin, who was one of the people who went to Dayton, Tennessee to be a witness at the Scopes Trial. Conklin gave a lecture about this, called "The Religion of Science" in about 1925, when he basically said all of those things.

On the other hand, you had responding to the modernists, people who called themselves *fundamentalists*. That word was first used in 1920, and it was used self-descriptively, again, to describe a group of conservative Protestants who rejected what they considered to be the excesses of modernism. In order to defend traditional Christian faith, they felt themselves obliged to reject evolution in its entirety and any form of theistic evolution. As William Jennings Bryan said of theistic evolution: he put it something like this, "it's an anaesthetic that deadens the pain while the patient's faith is removed." Bryan thought that evolution itself was the cause of religious modernism. As he said at one point, evolution was the cause of "the progressive elimination of the vital truths of the Bible." So evolution was demonized by Bryan, and that's an attitude that's still very prominent today among critics of evolution. At the time, then, within Protestantism, I would say there were those two dominant views: that one had to reject

traditional Christianity in the name of science, or that one had to reject modern science in the name of Christianity. It was highly polarized.

Host: Sounds like today.

Ted: It does sound like today, in some respects. I like to say that it's changed a lot today. But at first I have to grant that it doesn't look like it has, to many people—because you still do have the descendants of the fundamentalists of the 1920s who have, if anything, gotten even more conservative in their responses to modern science. The scientific creationists for example, people represented by [Ken Ham](#), with [Answers in Genesis](#) and the [Creation Museum](#) near Cincinnati, they would not have embraced the views of Bryan. [William Jennings Bryan](#), in their view was far too liberal as accepted in modern times. It was because Bryan accepted an ancient universe and an ancient earth.

Bryan didn't have a problem per se with an Earth that was millions of years old. Whereas, the Young Earth creationists insist that a young Earth is part of their necessary reading of the Bible and necessary theologically because of the issue of death before the Fall. [Their argument is] if there had been animal death before the Fall, God would not have the character of the kind of God that they want to worship. In their view, even an old Earth is unacceptable— theologically and biblically. So if anything, they're even more conservative than Bryan.

And then you also have the views of Richard Dawkins, which have much more prominence today than they would have had in the 1920s. You know, you don't have a large crop of New Atheists in the 1920s.

Host: Certainly not national best-selling or international best-selling authors.

Ted: That's right. There are one or two people you could find—for example, the physiologist [Jacques Loeb](#) at the University of Chicago, who was the doctoral director for [John Watson](#), the creator of behavioral psychology. Jacques Loeb believed in something he called “the mechanistic conception of life”—that there we are really no more than chemistry and physics. So that view was out there and got some attention, but it wasn't an aggressive anti-religious view trumpeted in people's faces in the way that Dawkins has made it so in recent years.

So you could say on first glance, yes, things are even *more* polarized now than they were in the 1920s, when that conversation was between fundamentalists who thought the Earth was young, against modernists who didn't believe in the divinity of Jesus but who were religious. On the other hand, you can say it's *less* polarized. When I say that, I say “within the American religious community.” There's far more religious options than just fundamentalism and modernism around the landscape today—and *they* have shaped responses to science. An example of this would be someone like [John Polkinghorne](#). In my opinion, he's the best writer on science and Christianity of his generation. He sees modern science as a way of coming to form correct impressions of the world—as a search for “motivated belief,” as he calls it. He sees theology in the same way, as a search for motivated belief, and he calls them “cousinly

enterprises.”

Host: Well, we’ll be hearing from Sir John here in another three days.

Ted: Terrific!

Host: Well, Ted, there are two last questions that I would love to hear your response to. One is along these lines: If there were one thing that you would take from your scientific and scholarly understanding of this science and religion issue, and get pastors to bring to their congregations, what would it be? That is, What is really important to you personally as an evangelical, that you would love other evangelicals to benefit from?

Ted: The God who raised Christ from the dead is also the maker of heaven and earth. And indeed if you read the prologue to John’s Gospel, more than this, the maker of heaven and earth is Him who was crucified for us, is the divine Word. And so, the God who made the world is one and the same with that man whom we nailed onto the cross at Calvary, and who was raised again on the third day. So that insight for me brings together both “books” of nature and scripture.

Host: The way you just articulated that sounds to me like what any preacher would now say in an evangelical context. It doesn’t bring in an evolutionary understanding at all, necessarily.

Ted: Well, I don’t think evolution is necessarily very important in relating to this, myself. I know that your enterprise—you’ve called it “[The Advent of Evolutionary Christianity](#)”—to be honest, Michael, the term “evolutionary Christianity” doesn’t really *do* anything for me. It obviously does for some others involved in these conversations. I just don’t relate to that term myself. I don’t see any value to it for my own thinking about these things.

I can understand the term “evolutionary Creation”: that would make more sense to me because then we would be talking about a Creation, which has been accomplished through evolutionary processes. That would make sense to me. But the term “evolutionary Christianity” doesn’t really make much sense to me. I don’t think that evolution should *drive* a Christian theism in any particular way. I’d rather that a Christian theism is there, and then Christian theism is the metaphysical framework into which we place evolution—or anything else.

Host: I guess what I’m meaning by the term “evolutionary Christianity” is this: To my mind (and certainly, I would imagine, to the vast majority of people who have been part of this series), the difference in thinking about Christianity *prior* to an understanding of the universe in billions of years and of a creative emergent process versus the thinking about Christianity *after* those understandings probably should be different in some way—or certainly *is* different in the minds of many people. Now, it sounds like that, for you, an understanding of Christianity *prior* to an

understanding of evolutionary emergence and an understanding of Christianity *after* that, really doesn't make a difference—not for you.

Ted: It certainly makes a difference in [theodicy](#).

Host: In theodicy—meaning, how we understand evil and God's relationship to it?

Ted: Precisely. If the world is, as described literally in Genesis, a few thousand years old, with humans coming on the scene at the end of the sixth day, a few hours or a few minutes after the mammals: in that scenario, it's a lot easier to understand the traditional theodicy—according to which there was no suffering and death in the Creation prior to human sin. That's a theodicy that doesn't work for me, if the universe is very old, for example. So, yes, I think that the acceptance of evolution and the acceptance of an ancient universe *does* carry with it some implications for how one interprets the Bible at that point and how one forms a theodicy. But I don't see that as impinging at all on the resurrection of Jesus and the Incarnation or on the claim that this crucified Christ is the one through whom the world was made. I just don't see them impinging on that in a direct way.

I think that those theological truths are independent of an evolutionary picture of nature. They may well make it either more or less difficult to understand an evolutionary picture of nature. I think, frankly, they make it a little easier to understand an evolutionary picture of nature—but I don't think that the evolutionary picture of nature drives those theological points, and I don't think it should. I think Christianity would have been here whether or not anyone ever heard of evolution. And Christianity will be here even if the idea of evolution is someday replaced by something else.

Host: Okay, cool. That's a very different perspective than my own. My take or my interpretation of the work of the [ASA](#), for example, has been that there's something vital that God has only revealed in the last several hundred years that couldn't have been revealed to the biblical writers, and *that* can actually enhance our faith. That can actually enrich our faith traditions generally, but also our personal faith, our own walk with God. I'm hearing that that's not necessarily the case for you, which is fine. But it confronts me with a misunderstanding of—not necessarily what the ASA is about—but certainly what is your own calling within that larger context.

Ted: As we say in our own literature, the ASA is “a fellowship of Christians in science and related disciplines who share a common fidelity to the Word of God and a commitment to integrity in the practice of science.” That phrase certainly says something specific, but I also think it leaves a lot things not directly said, as well.

Host: Yes, exactly.

Ted: Actually the ASA Statement of Faith goes well beyond this. The ASA Statement of Faith makes direct reference to the Apostles' and Nicene creeds as containing the essentials of Christian faith. The position of the ASA is not much different from that of Asa Gray, the first American Darwinian. He gave lectures to Yale Divinity School in 1880 in which he basically said that an evolutionary picture of nature did not alter "the essential contents of Christian faith." He said those essential contents of Christian faith were, as he put it, "briefly summed up in the [Apostles'](#) and [Nicene](#) creeds." The ASA Statement also makes direct reference to nature being "a contingent order." This, again, does reflect that term as used by Tom Torrance, and it *does* reflect the theology I articulated earlier about how in order to have a contingent order, you really need to have a God who's able to determine the nature of nature, in whose image we share, to some extent. So that's a classical theology of Creation.

Now, many people might say, criticizing us from the theological right, that the acceptance of evolution by many ASA members—many *do* accept evolution, and others do not—but the acceptance of evolution might drive one into theological unorthodoxy. Well, it depends on what you mean by that. For example, if theological orthodoxy requires the acceptance of a literal first pair of humans, evolution makes it very hard to understand how that could be true. Perhaps it *is* true. People like Denis Alexander think it can be reconciled with the picture of a historical Adam and Eve. I'm not so sure about that. I think it's hard to see how that would work. If one is committed to a literal first person (first couple, Adam and Eve), then, yes: accepting evolution might make it very difficult to see how that could be. So one could say that that's theologically unorthodox. But that's not something that the ASA as an organization has a stake in—that is, whether the specifics of a historical Adam and Eve is the case. What we have a stake in is orthodox theology of Creation and of the person of Jesus, as articulated in the Apostles' and Nicene creeds. It is the idea that the universe is actually a divine Creation and that Christ was actually the Incarnate God. Those are classical propositions, and the ASA is dedicated to putting theology and science together in a classical picture, as I've just articulated it.

Host: Interesting. I tend to see all creeds as reflecting the best understanding of what God had revealed up to that point. I imagine—who knows what's going to happen—but I imagine that we will see some amazing creedal affirmations in the future that integrate what God's been revealing *since* then. I have this quote from [Gil Bailie](#), and I don't know whether this is something that would resonate with you or not, but it's certainly been useful for me in terms of thinking about topics we're just talking about, and now in terms of creeds. He says:

It was not those closest to the historical Jesus who first gave the gospel its geographical breadth and theological depth. It was Paul, who had never known him. In addition to that, impressive achievements in biblical scholarship have, in many ways, brought our era closer to the constituent events of the Christian movement than were, say, the Gentile Christians of the second century. If the life and death of Jesus is historically central, then people living ten thousand years from now will be in a better position to appreciate that than we are. Furthermore, when they look back they will surely think of us as 'early

Christians' – living as we do a scant two millennia from the mysterious events in question. They will be right, for the Christian movement today is still in the elementary stages of working out for itself and for the world the implications of the gospel. There isn't the slightest doubt that the greatest and boldest creedal assertions are in the future, not the past. It may be only at rare moments that this flawed and unlikely thing we call 'church' even remotely resembles something worthy of its calling, but it is nonetheless embarked on a great Christological adventure. Even against its own institutional resistances, it is continually finding deeper and more inspiring implications to the Jesus-event.

Ted: Well, in terms of the attitude expressed there, it's hard for me to disagree with. I *do* think that we reflect on the meaning of our faith, and it's inevitable that we're going to do that, and it's inevitable that we're going to think we've learned some new things through time. I don't want to suggest that I'm locking the Apostles' and Nicene creeds into some unhistorical framework. What I *am* suggesting, though, is that the insights expressed in the Apostles' and Nicene creeds *do* go back to the earliest years of the Church. They're older than the creeds themselves, and they *do* reflect what Polkinghorne would call the "bottom-up experience" of having been with this person Jesus. The one part I disagree with that I heard in that quotation has to do with the idea that Paul simply made Christianity something that it had not been for the disciples of Christ. I don't agree with that.

Host: Oh, no. He didn't say that. He was saying that "the one who gave the gospel its geographical breadth and theological depth" was Paul—who didn't actually live with him.

Ted: I understand that. But I'm hearing an implication there that's often made by biblical scholars: the idea that there's a Pauline Christianity and that there's a separate Christianity in the gospels.

Host: Oh, I see what you're saying—sure.

Ted: And I don't agree with that. I think when Paul was presenting Christianity, as he says in one of his letters, he presents it right through the life, death, and resurrection of Jesus. "The gospel as it was given to me," as he puts it in one of his letters.

Host: Well, Ted, there's one last question that I just would love to ask you and that is this: Where do you find the greatest hope, right now, for science and evangelical Christianity becoming less divisive?

Ted: To paraphrase what Darwin said in *The Origin of Species*: I look with promise to the future, to young and rising biblical scholars and theologians who might be able to put together a biblical theology that is also clear on the issues of the person of Jesus and the resurrection of Jesus, that also accepts the idea that humans and other animals have common ancestors. I

think the science is more and more showing that we *do* have common ancestors. The genetics, above all, show that this is the case. There needs to be a much greater acceptance of this by evangelical biblical scholars and theologians. That is a place where I think the science does need to push the theological side. That's a different matter entirely than a kind of religion based on the process of evolution, or trying to draw heavy insights from the process of evolution. I think it's just dealing with what the actual facts are. I think one must always want to be willing to deal with actual facts in the evangelical faith.

Host: Yes. I speak about [facts as “God’s native tongue” \(1, 2, 3, 4\)](#). What God has revealed through genetics should make a difference in our theology, it seems to me.

Ted: Yes. I think we do have to wrestle with that. That is going to be where the action is going to have to be for the next generation of evangelical biblical scholars and theologians, in my opinion—when it comes to science. There are lots of other issues that theologians are going to need to deal with that don't have anything directly to do with science. But those issues *do*, and I think that, for the most part, evangelical biblical scholars and theologians have not wrestled with that information. They have tended to reject that information, rather than wrestle with it.

Host: Well, Ted Davis, thank you so much for sharing your rich historical understanding of these issues, as well as for your bridge-building work in the world and for sharing your ideas and experience here today on the leading edge of faith.

© Michael Dowd 2011. All rights reserved.