

Evolution and Religion

A Dialogue

Michael Ruse

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CHAPTER ONE



Program One: Options

Good evening. My name is Redvers Fentiman and tonight, and for the next four Tuesdays, I invite you to join our popular, public-television-sponsored series of *Eternal Questions*. Our theme for this new program is “Science and Religion: Who Is Winning?” We have a terrific lineup of guests here to discuss this issue, and I am sure it will be a fascinating experience for us all. Introducing the discussants, on my far left, we have Professor David Davies, head of the Department of Evolutionary Biology at the Massachusetts State Institute of Science and the author of several books, most recently *Genes, God, and Gollum*. Then next to him, on my immediate left, is Martin Rudge, historian and philosopher of science at Robert Boyle, the well-known liberal arts college in Minnesota.

Then, crossing over, on my immediate right, is the Reverend Emily Matthews, Episcopalian priest and adjunct professor of pastoral counseling at Wycliffe College, here in this city. And finally, on my far right—I’m not yet talking about his politics or theology—is the Reverend Harold Wallace, head pastor of a very large Southern Baptist church, Rollingbrooke Stones, in Atlanta. I’m right, am I not, Dr. Wallace, in saying your church is very large?

Wallace: Please call me Hal. Yes, we have over seven thousand members, and twenty-three pastors, including me. We started with just a room and ten members twenty years ago and now we have an annual budget of \$14 million.

Rudge: I obviously went into the wrong business. I got a grant last year for \$5,000 and I felt lucky.

Davies: Yes, but you're not into the God business. You may be offering education, but you're not offering eternal salvation. You may flunk kids, but you don't burn them all to hell for eternity. You should get people really scared about the future and then watch how the money rolls in. In my business, all you have to do is find another disease and some sports figure is up there on television raising money for you. It's the same with religion. Look at who's the best-dressed person on this panel!

Matthews: Well, that's certainly not me! My partner had to bully me to not just wear a sweater and blue jeans. But you know, David, although as a priest I am deeply ashamed of the behavior of some of my fellow ministers—remember Jim and Tammy Faye Bakker—you're wrong tarring us all with the same brush. How would you like it if we said that all scientists are just cold materialists, who sell their souls to the highest bidder? Werner von Braun, the rocket scientist, who didn't care if he worked for Hitler or for the Americans, is hardly a model for all scientists. Most of us who are ordained ministers are very, very far from being rich. Like most everyone else, we just want to make a living so we can live decently.

In my parish, by far the bulk of the collection goes to service. We run a hostel and kitchen over in the ward—you know, where the strip clubs are—and we outreach to Ethiopia. I'm not saying that Professor Rudge didn't deserve his money, but with all due respect—and I speak now as someone who is a bit in the same business herself—it is not as if sitting on your bottom in a comfortable office, doing the kind of thing you like, is of the same value as curing a person sick with AIDS or offering a helping hand to the lonely and hurt and helpless, here in our ghettos or there in Africa.

Davies: I hate to be rude right from the beginning, or perhaps it is just as well to be rude right from the beginning, but, Reverend—

Matthews: Call me Emily.

Davies: Okay, Emily, but right from the beginning I have to say that not only do I not buy into that helping-hand stuff—or at least I do, but not in the way that you would do it—but I think that everything and anything to do with religion is not only a waste of time, but positively dangerous. If it just helped people feel better, then why not? I wouldn't ban pot and so why should I ban religion? But the thing is that pot is not dangerous, except possibly marginally to the smoker. But religion is dangerous: Northern Ireland, Israel, Iran, Pakistan, and on and on. You name it. Where there's conflict, there's reli-

gion. As the Nobel Prize-winning, physicist Steven Weinberg has said, “Good people will do good things, and bad people will do bad things. But for good people to do bad things—that takes religion.” And before you start in about soup kitchens and the like, I’d like to know about the strings. The hymns and the prayers that you have to hear before you can get a hamburger and fries. Do you have to light a candle before you can get ketchup?

Wallace: You know, what you and Weinberg say about religion is not just false, but rather offensive. I reject absolutely the idea that my people are doing bad things because of their faith. When Hurricane Katrina hit New Orleans, where were the physicists? Where were the philosophers? I don’t know. I didn’t see any, and if they had been there, I would have seen them. Teams from my church spent two months working there, operating a kitchen, finding clothing and bedding, opening a day-care center for the kids, and much more—much more than the government, I can tell you.

Fentiman: I can see that we have strong opinions here tonight, and I am sure that we all want to express them forcefully. But, we are not here just to talk about religion, but about religion and science. So, let’s focus ourselves on that. We are in the *Eternal Questions* series, and our topic is science and religion, and the conflict. Or not, as you might want to say.

Davies: But isn’t that the whole point? You think it’s an eternal question. I would challenge that right from the beginning. Why is it an eternal question? It was a question, but it’s been answered. Science is right and religion is wrong. Or more precisely, religion is wrong and dangerous and science is on the road to truth. In fact, I am very keen on Karl Popper. He said that you could never ever prove anything true, but you could prove it false. So I would say that science may never be true, but it’s the best way that we have of not being false. Discussion over.

Fentiman: Well, I hope not because we have four more hours after this one to discuss the issues, and it is costing our sponsors a lot of cash to put this on. So, I think we should labor on a bit because I doubt that everyone on the panel agrees with you. What I’d like to do, since I am the host, is structure the discussion a bit. Martin Rudge, we haven’t heard much from you. Just sitting on your bottom contemplating that next book, I guess! Anyway, I’d like you to kick off the debate. Perhaps you could just give us a bit of the history of things—science and religion—and spell out the options for today.

Rudge: Fair enough. Stop me if I start to sound a bit too professorial. Although, let me say that I don't take offense at what Emily said—not that I think it was meant very offensively—and indeed, I do worry about what an academic like me can contribute to society's well-being, let alone the horrendous problems across the world. One thing, it may not be much, is to take part in TV programs like this! We are talking about really important issues and, as we are going to see, these issues have serious implications for education, social policy, and a lot more—who should or should not go to prison, for example.

In a funny sort of way, I kind of agree with David Davies that the science-religion relationship is not an eternal question. But, I say that from completely the opposite end from him. He thinks that it is over. I'm not so sure about that. But, I do think it had a beginning—up to the end of the Middle Ages, that is, until the Reformation in the sixteenth century, as well as what we call the Scientific Revolution—Copernicus to Newton—by and large, science and religion went hand in glove. To a large degree, the only people who could read and write were the clergy, and they were the only ones with the leisure to look into scientific questions. The Catholic Church was very pro science. Don't forget that Copernicus, the guy who put the sun at the center of the universe, was a minor cleric. And he died in good standing. No excommunication for him!

Davies: Yes, but don't forget Galileo—a hundred years later, made to get down on his knees and say the earth does not move and the sun is not at the center.

Rudge: I'm not forgetting Galileo. I'm just getting to him. Two things were very important for splitting science and religion. Obviously, the rise of the Protestants was one thing. It simply isn't true that back then they were all crude biblical literalists like we have in America today, but people like Luther and Calvin did take the Bible very seriously, and there is no doubt but that the claims in the holy book often clashed with the new science, and religious people felt tense. The science itself also contributed to the tension. Copernicus knocked the earth from the center of the universe. Up to then, everyone agreed with the Greek philosopher Aristotle that the earth had to be the center, because that is why heavy things fell down and not up. But with Aristotle pushed sideways in science, this put pressure on the Catholics, because their theology—thanks to Saint Thomas Aquinas in the thirteenth century—used a lot of Aristotle. The idea that while the physical appearance stays the same, the bread and the wine can really turn into the body and

blood of Christ—transubstantiation—is very Aristotelian. So as the science went, the religion felt pressure.

Funnily enough, scholars today think the Galileo episode was a bit of an anomaly. No one ever lost their life because of Copernicus. It used to be said that Giordano Bruno was burned at the stake in 1600 for being a Copernican. But that is not really so. He got barbecued because he claimed that there is life on other planets, and that was heretical. Galileo was a bit unlucky. He was made to recant in 1632. By then the Catholic Church was going full blast on the Counter-Reformation, and was trying to outdo the Protestants on being tough on claims that might threaten the Bible. But, Galileo's real sin was that he published in Italian and so made the ideas readily available and hence dangerous. Also, he was a bit of a pain in the butt. He really did portray his opponents as fools and knaves. He should not have been condemned, but still.

Wallace: Yes, but this is all very well. What about Darwin? There was someone who went absolutely against the Bible and, hence, against the Christian religion. They can't both be right. It's Jesus Christ or Charles Darwin. Take your choice. I know where I stand—with Pat Robertson: "God is tolerant and loving, but we can't keep sticking our finger in his eye forever."

Fentiman: I wonder if we can just leave Darwin out of the discussion for the moment, at least the details. I am hoping that we can get to Darwin next week and have a full discussion of him and his theory then. Just so you don't get too professorial, Martin, why don't you wrap things up a bit. Where do we stand now?

Rudge: The most popular classification, due to a man called Ian Barbour, a retired professor from Carleton College, a neighbor college of mine in Minnesota, has four divisions or options. First, there is the *warfare* division or metaphor. Here, science and religion are seen as being in a nonstop battle. If you are for Genesis, then you are against evolution. End of debate, or at least end of any attempt at finding harmony. The second division goes the other way completely. It is the *independence* position. It says that science and religion are simply talking about different things. They are chalk and cheese. They do not overlap and, hence, they could not conflict if they wanted to. This is often known as "neo-orthodoxy," because it is inspired by the great Swiss theologian of the first half of the twentieth century, Karl Barth.

The other two divisions are reasonably close together. One speaks of harmony or *dialogue*. Here, science and religion are considered to be separate, but

they can interact fruitfully. I suspect a lot of Catholics, including the present pope, Benedict XVI, feel drawn to this position. The final division is one of *integration*. It says that all knowledge is one, and ultimately science and religion will be seen as part of the whole. Followers of Alfred North Whitehead, the English logician who went to Harvard in the first part of the last century, are often put in this group. These are the so-called Process Philosophers.

Fentiman: That's a good start. Now, let's get the others back into the conversation. Starting out in left field with David Davies, where do you stand?

Davies: You all know where I stand. I am a conflict man all the way. Except, I think the conflict is over, because science has won hands down. But let's not just say that. Let's see why that's the case. First, although Martin has been glossing over this a bit, history shows this solidly. Back in medieval times, the church and science might have been buddy-buddy, but it was on the church's terms all of the way. Richard Dawkins, the English biologist, has rightly spoken of the poky little universe. You had a flat earth, with nothing much beyond Europe and the Near East, as we now know it, and the sun and the stars were just above, with God and the angels out there beyond and a lot of fire and the devil down below. There was a short history to the earth—I won't go into that now because we are going to talk about this topic next time—but most important of all, there were miracles everywhere. Not just the saints curing sick people, but old women putting curses on young women so they couldn't have babies, when they were not hopping on broomsticks to go off and have fun with the devil, with all sorts of omens appearing in battles telling you what was going to happen, with superstition rampant—potions, zodiac signs, mysterious fires, you name it.

What modern science has done is to wipe all of this away, but only with religion kicking and screaming the whole time. Darwin's great supporter Thomas Henry Huxley once said—and I have brought the quote along so I get it right—"Extinguished theologians lie about the cradle of every science as the strangled snakes beside that of Hercules; and history records that whenever science and orthodoxy have been fairly opposed, the latter has been forced to retire from the lists, bleeding and crushed if not annihilated; scotched, if not slain." He was absolutely right. I don't care who Copernicus was. It was what he thought and said that counts. He pushed the earth sideways, and, much more important, he made the universe vastly bigger—four hundred thousand times bigger, in fact. This came about simply because if Copernicus is right and the earth is moving around the sun, this motion should affect the way in which you see the stars. If you walk from front to

back of an automobile, now you see the hood and now you see the trunk. The point is that no one could see this effect with the stars—it's known as "stellar parallax"—and the only way you can explain its absence is by supposing that the stars are too far away to spot it. If you put an automobile between the goalposts at one end of the football field, and then go down to the other end and walk between the posts, you will see the car in much the same way left or right. It's too far away to spot the difference—same with the stars.

The thing is, now from being this tight little universe, this poky little universe, we now suddenly have a huge universe and the earth is just a speck. The earth has no privileged position. It's not at the center and before long, people made the universe infinite and the sun was not at the center either. Suddenly, our home is not important. At the same time, all of these signs and things from the heavens are being given explanations—what we scientists call *natural* explanations. They were being shown not to be miraculous, but to be the effects of what we scientists call *laws*. These are not legal or moral laws like "Don't kill." They are scientific laws—unbroken regularities, like Newton's laws. They tell us about the way that the world works—the way in some sense that the world *must* work. Bodies fall to the ground. They must fall to the ground. Of course, not everything does fall to the ground. A boomerang doesn't. So then you look for reasons that make it an exception.

Science does not allow exceptions without reasons. That's why miracles are out. Miracles are exceptions because God makes them that way. And that is just not a scientific way of doing things—and a good thing, too. On the one hand, if you demand reasons, then usually you will find them. On the other hand, if you don't demand reasons, then soon enough, you are going to find fault and get into prejudice. Think of medicine in the nineteenth century. In cholera epidemics in New York, inevitably it was the poorest people who suffered most. So the rich Protestants all said, oh well, God is punishing these Irish for being Catholic. Now we know that it had nothing to do with being Irish or being Catholic or whatever. The poor people were drinking water that was contaminated by the toilets. The rich people were not. It was as simple as that. Or rather, it wasn't simple to find out, but it was there to be found out—a scientific answer.

But there's more than just that. I don't think of myself as a particularly modest man, but there's something modest about science and not about religion. Religions tell you, believe this or believe that, or go to hell. Hate homosexuals or you're doomed. Kill the infidel or you're doomed. Make women stay home or cover themselves in black robes or you're doomed. Like I said, I am a Popperian. Even the best science might be wrong. For three hundred years, nearly all people thought that Newton had got it right—absolutely,

completely right, for all time. Then along came Einstein and oops, maybe the Newtonians weren't so right after all. And the same could happen to Einstein or the double helix or plate tectonics or whatever. You can always be sure that you are wrong. You can never be absolutely 100 percent sure that you are right. That's the modesty of science and that's the reason why science and religion are not only different but bound to be opposed. Science must be open to check—it must be “falsifiable.” Religion is never open to check—it is “unfalsifiable.” That is why science is for winners. Religion is for losers. But, more than that, science is for winners because it is more honest than religion—always was, always will be.

Matthews: I just have to say—

Rudge: A couple of points—

Wallace: I can see your background! David Davies. You really are a fiery Welshman.

Davies: Actually, I'm Jewish. My great-grandfather was called Davidovitch or some such thing. It got changed at Ellis Island. But I'm glad that point's come up. I am not a practicing Jew. In respects, I am not even that keen on Israel. But I can see the need for it. My ancestors spent generations being despised and bullied and used and beaten and killed—and then came the Holocaust. What was the main force behind all of this? Religion, religion, religion! We were thought to kill babies for our ritual practices. We were accused of murdering Jesus. We were . . . well, it makes me sick. Martin Luther was the world's biggest anti-Semite before Hitler—all done in the name of religion. For me, science is something clean, something that washes away that kind of thinking. It's difficult, it's hard, it's often disappointing. But, it's the grown-up way of doing things. For me, science isn't just something. It's a morally good something.

Fentiman: Right. Well, I'm going to intervene here. Next up is Hal Wallace. But I can see that Martin is bursting to say something. So, just as long as they are points of correction or amplification—

Rudge: Absolutely, because in many respects, I agree with Dave. I do think that science has swept away miracles. But I do want to say first that that stuff about the flat earth is simply nonsense. It's a fiction from the nineteenth century. Nobody in the Middle Ages thought the earth was flat. Everybody knew

about the eclipse and the earth's circular shadow on the moon. Everybody knew that objects disappear over the horizon. The whole point of the Aristotelian world system is that the earth is a sphere, right at the center of another sphere that carries the stars. In fact, Aristotle's theory was known as the two-sphere theory.

Second, the medievals did not have a poky little universe. Before the Middle Ages, the great scientists had been the Arabs. They had worked out that the radius of the outer sphere of the stars from the center, from the earth, is 98 million miles in our units. Not much poky there, although I do agree that the big thing that Copernicus did was to extend the size of the universe hugely and that was significant, if not for the literal word, for the effect it had on people's imaginations. Just like Darwin and time. Oh, and incidentally, if you are going to throw in a third point, the Catholic Church—then and now—has always been violently against astrology. It is not a fan of zodiac signs. Astrology implies that our fates are sealed at birth, and that denies free will. And that's a no-no for Christians.

Fentiman: Well, thanks for that. Now, over to Pastor Hal.

Wallace: Of course, I want to disagree completely with Professor Davies. So much so, that you might think we stand back-to-back and share the conviction that science and religion must always be in conflict. Except, I know that religion has been the winner! Of course, I'm not a flat-earther, and I don't think the earth is the center of the universe. Copernicus was obviously right about this. I'm still not that keen on the Catholic Church, although, like a lot of evangelicals, I do think that Pope John Paul II was a truly great man. When he spoke out against abortion and against homosexual marriage—I just can't call it gay marriage because it just seems to me to be so sad—I think he was doing the work of Jesus. I absolutely do not think that God was punishing the Irish for being Catholic, although I am equally certain that God will punish each and every one of us who does not turn to him and acknowledge him as Lord. Finally, I am certain that I am a much greater supporter of Israel than Professor Davies. I just know that it is God's work that is happening over there.

I'm pro science and so is my congregation. We have a large number of doctors—really good ones, who are pediatricians and gynecologists and surgeons and so forth—and we have vets and chiropractors and others in the health-care business. Also, we have a large number of computer people of one sort or another. And this is not to mention our teachers, including our science teachers. My doctorate was given to me by Central Southern Baptist

Seminary, but I myself have earned a master's in nuclear engineering. I was all set to work in that field until my final year, when I found Jesus and decided to devote my life to him. So, we, in my church, are very much in favor of science. Even though I disagree almost completely with Professor Davies, I am not a conflict person like him. I don't think that science and religion have to be at war. I am much more of a dialogue person, or at least that is where I would think I would fit. Science and religion are both good things and they have much to say to each other.

So where do I differ from the professor? Well, of course, there are things I would want to say about religion. I think he's completely wrong to say that religion—Christianity, in particular—is responsible for the evils done to people, especially the evils done to Jews. If anything, the big influence was Charles Darwin, of all people! He led straight to Hitler, through the transfer of the struggle for existence to social issues. Hitler's own testament, *Mein Kampf*, often sounds like something from the *Origin of Species*. Might is right, nations struggling against nations, and the Germans being superior to everyone else. If you think of the real monsters of the twentieth century—Hitler, Stalin, Mao—they were all contemptuous of religion and wanted to substitute their own faith of one sort or another. But leave all of this. Let's get back to our topic of science and religion. One major problem—you might think *the* major problem—I have with Professor Davies' views is that I think he is just plain wrong about a lot of the science. His beliefs about biology, for instance. But since these will come up later—next week, perhaps—let's leave these too.

Rudge: What we can't leave is your easy connection between Darwin and Hitler. Every genuine scholar knows that matters are far more complex than you have said. For a start, recent scholarship suggests that the main influence on Hitler was a kind of German romanticism of the late nineteenth century—what is often centered on the German people, or *Volk*—something incorporating some half-baked philosophical ideas from Wagner and his operas, that was a real font of ideas for the Nazis. For a second, all of that stuff about societies struggling owes little to the writings of Charles Darwin and much more to others, notably the mid-Victorian man of letters Herbert Spencer. I know that ideas of this kind are often known collectively as “social Darwinism,” but they are not very Darwinian at all. And, for a third, a lot of people who jumped from biology to society were anything but bloodthirsty fiends like Hitler and his crew. For instance, the Russian anarchist Prince Peter Kropotkin thought that humans and other animals have an innate tendency to help each other—mutual aid—and,

hence, there is no need for societal rules and constraints. Crazy, you might say, but done in the name of biology.

As far as Hitler is concerned, no one thinks he did any systematic reading or thinking, and he just pulled phrases and ideas out of the air as it suited him. The autobiographical parts of *Mein Kampf* are mainly fiction, so why not the rest?

Fentiman: Okay, let's get back on track. Pastor Hal, you were telling us where you stand on the science-religion relationship.

Wallace: In a way, the really big issue is the whole question of *naturalism*. Phillip Johnson, the retired law professor and author of *Darwin on Trial*, has been my guide here. He distinguishes between what he calls "Methodological Naturalism" and what he calls "Metaphysical Naturalism." Methodological Naturalism is the assumption that the world—the physical world, that is—works according to unbroken law. There are no *supernatural* forces at work. So if something strange happens, say a liquid changes from red to blue before your eyes, you know that it must be because of a chemical reaction in the liquid or—less likely perhaps—someone is manipulating the lighting in the room, or something like that—smoke and mirrors, as you might say. It is the working principle of scientists, or at least most scientists. In a dramatic sort of way of putting things, it is the methodological assumption of atheism. God or gods are not playing tricks. No miracles.

So much for Methodological Naturalism, now what about Metaphysical Naturalism? Metaphysical Naturalism is the belief that there really is no God or gods. There is nothing beyond what you see. Of course, in this day and age what you see can come through very complex and sophisticated machines. You don't look at a peach, say, the Georgia fruit, and see a DNA molecule. But the molecule is there, in some sense to be found through the senses. The Metaphysical Naturalist—someone like the biologist Richard Dawkins or the philosopher Daniel Dennett, and I suspect Professor Davies over there—says that that is all. The Metaphysical Naturalist really is an atheist.

Johnson refers to himself as a Theistic Realist. He means that he believes that God really truly does exist. As you can imagine, I am pretty happy with that myself. The point here, though, is the relationship between Methodological Naturalism and Metaphysical Naturalism. You might think, well okay, I'm going to be a Methodological Naturalist, but that says nothing about Metaphysical Naturalism. I'm going to keep God out of science, but I still worship and adore God and believe in his existence. A kind of independence view, if you like. But, Johnson argues, the

point is that things don't really work that way. Once you get into Methodological Naturalism, then Metaphysical Naturalism is a step—a too-easy step—next. Someone like Professor Davies says, keep God out of biology, and the next thing he is saying is that there is no God. What he does from Monday through Saturday starts seeping into what he believes on Sunday. Although, I suppose that if he were a practicing Jew, it would be the Sabbath instead. But you know what I mean.

I'm not sure I want to go all of the way with Johnson. I think he's absolutely right that Methodological Naturalism generally leads straight to Metaphysical Naturalism and that's a bad thing. The question for me is how we should define or understand Methodological Naturalism to avoid this problem. I want to do science! I agree with Johnson that there are certain events in nature that simply do not come under the normal laws of nature. I guess we'll be talking more about these in the next program. But, do we want to say that these events are also part of science or do we want to say that science stops there and something else takes over? That something else, obviously, being God and religion. Some people, perhaps this includes the well-known Christian philosopher Alvin Plantinga, want to say that science should be expanded to include these events and their causes. The events are part of nature even if the causes are supernatural. He says that since everything is due to God all of the time—remember the hymn, "He's got the whole wide world in his hands"—we should not distinguish between events caused by law and events not caused by law. He calls this "Augustinian science."

Some people, and I feel happier about this, want to say that science should not include miracles, but that science should recognize more openly its limitations. Most Methodological Naturalists would not only deny the miracles of Jesus, but would deny the very possibility of the miracles of Jesus. If Jesus was born of a virgin, they would say that there must have been a natural cause, although probably they would say that because there couldn't be a natural cause—if the ovum started spontaneously to divide, since women carry only the X chromosome, the female chromosome, the offspring would have to be 2X, which is female—Jesus couldn't have been born of a virgin. I want to stop that move by saying that Methodological Naturalism has its limits. The Reverend William Whewell, a nineteenth-century Anglican clergyman, used to say about the origins of organisms that "when we inquire whence they came into this our world, geology is silent. The mystery of creation is not within the range of her legitimate territory; she says nothing, but she points upwards." I agree with that exactly.

I would say that I am all in favor of Methodological Naturalism, but that it's not as powerful as most people think.

Rudge: You mention Plantinga. He thinks that sometimes science just can't explain things, and he says that's okay. People like Dave and me want to say that that is just the attitude that you should not have. You give up too soon, when there might be a solution. We say that his attitude leads to premature "science stoppers." Can't find an answer? Must be a miracle! We say: nonsense! Keep working and the answer will come. Even if it doesn't, the answer's there.

Wallace: But that just proves my point. You people define out the very possibility of miracles. Science stoppers may be a problem for science, but whoever said that Almighty God had to go along with the rules of the National Science Foundation?

Fentiman: Can I just get a word in here? To move things along, Reverend Hal, where do you locate yourself on the spectrum? You said something earlier about not being a conflict person—

Wallace: I am getting to that. I think that science is science and religion is religion. They are not the same. But, they do certainly complement each other. So, there's dialogue. It's the old metaphor of two books, the Book of the Bible and the Book of Nature. Another hymn, this one incidentally by a great Anglican, John Keble:

There is a book, who runs may read,
Which heavenly truth imparts,
And all the lore its scholars need,
Pure eyes and Christian hearts.

The works of God above, below,
Within us and around,
Are pages in that book, to shew
How God himself is found.

Fentiman: I am a little sorry that you didn't sing it for us! Perhaps next time we can try for a barbershop quartet! Now, let's turn to our other minister, the Reverend Emily Matthews. I take it—goodness, what do I call you? I can hardly call you Father Matthews. Mother Matthews?

Matthews: Why don't we just settle for Emily. I am glad to get my turn, because obviously I'm going to disagree with David Davies, but I'm going to disagree with Hal, as well. I'm much more into integration. Let me say right from the beginning that I have been very much influenced by Alfred North Whitehead and I think that his "Process Philosophy" is the right way forward, theologically. I realize that this philosophy can be horrendously difficult to follow, particularly with all of the new words that its devotees have coined, but I understand it to mean that all things are moving, are in a process of development or becoming. This applies to God himself, as well as to his creation. Obviously, this means that I reject some of the traditional Christian views of God. Saint Augustine said that God is all-powerful and all-knowing, and that in some sense, he is eternal. He stands outside time and is unchanging. I think this is completely misguided, and reflects Augustine's enthusiasm for Greek philosophy—particularly the philosophy of Plato, who lived four hundred years before the Common Era—rather than the message of Jesus of Nazarus, who is the Christ, who is the son of God. For Whiteheadians, God is not all-powerful in the traditional way. Rather, God is in the process along with humans. He can help, he can influence, but he cannot determine. In a sense, as the Lutheran theologian Philip Hefner has said, we humans are cocreators, along with God.

I want to stress that I don't think I am just modifying Christianity to suit my own ends. I think that Augustine was wrong. He was wrong in a lot of things, but especially here. He ignores entirely the notion of "kenosis." This is the idea that God in some sense empties himself, he voluntarily—especially in the person of Jesus—makes himself limited. Philippians 2:7 says explicitly that "Jesus made himself nothing" or "he emptied himself." I think that this is the only way we can explain the agony on the cross. God the Father did not have to die. God the Father is eternal and cannot suffer. But God came down to earth, made himself human—made himself God the Son—and put himself in the order of time, and suffered and died on the cross. If that is not making oneself nothing, I don't know what is.

For me, this kind of thinking is the only way I can make sense of the terrible events of the last century. How does one explain Auschwitz? How does one explain the death of those children in the camps? How could a good god have let Anne Frank die of typhus at Bergen-Belsen? Only if you are prepared to say that God was with them at Auschwitz. God, too, died of typhus at Bergen-Belsen. The great Jew Elie Wiesel says that God died at Auschwitz. He did, but he has risen again and continues to share our suffering and work with us to bring things to completion. For me, it was not just chance that

Anne Frank wrote her diary and that it was found and has been one of the truly inspirational works of our time.

Rudge: This is all very well, and I agree that it is a noble vision—although I am not sure that Anne’s death is quite balanced by her book and its influence—but, in any case, I don’t see what it has to do with science and religion. In what sense are you an integrationist? Hitler killing Jews was not science. So how does making this compatible with your theology make for an integration of science and religion?

Davies: I would say that Hitler killing Jews was science. Bad science, namely assuming that Jews are different from other human beings, especially Germans.

Matthews: Actually, I’ll want to pick up on that point in one of the later programs. But for now, let me speak to Martin’s complaint. It’s true, I haven’t yet got to integrating science and religion. It’s at this point I want to bring in feminism.

Davies: Here we go. I knew we’d get to that sooner or later, probably sooner.

Matthews: And I knew that sooner or later, probably sooner, we’d get your prejudices out on the table! Although, I expect you’re not the only one. You have twenty-three pastors in your church, Reverend Hal. How many of them are women?

Wallace: As it happens, we have not yet felt the call to ordain women. Although, we do have many theologically qualified women active in our youth groups. We are very proud of the fact that we have more women on our staff with doctorates than the men.

Matthews: Proud? That’s not the word that comes first to my mind. But let’s leave that for now. I suspect these issues will arise again before we are done. Let’s get back to my position. The historian Carolyn Merchant has shown that the so-called Scientific Revolution—the Copernicus-to-Newton stuff—was much more than a simple scientific change.

Rudge: I wouldn’t exactly say the change was simple!

Matthews: Fair enough—was much more than a straight scientific change, however significant. The really big thing was the change of metaphors. Up through the Middle Ages, the dominant metaphor had been the world as an organism. People thought that the globe on which we live was living—it had life, it had a soul, the *anima mundi*. This was a very old idea that goes back in fact to Plato—so I'm not against Greek philosophy generally—that says that the earth is an organism. It's all in the dialogue the *Timaeus*, which was by far the most popular dialogue in the medieval period. It's not a silly idea by any means. The earth goes through phases—winter, spring, summer, and so forth—just like we get up and live the day and then sleep, and then start all over again. The earth is nourished by the sun. The springs of water well up and form rivers going down to the sea, and fertilize the land. You dig into the earth and you find its veins—think how we use just that word for things carrying blood and for seams of coal and metal—and so on and so forth. It was of course deeply feminine—the earth is always our Mother and never our Father—because we humans are nourished by the earth and we are born from it.

Then all of that was changed, and the organic metaphor was rejected. Thanks to Galileo and Newton and the others, especially Descartes, the earth was no longer an organism. It was a machine. It was a clock that worked according to fixed rules or laws, that was predictable, and that was in itself not living. It was created by God, that is true, but the earth itself was now lifeless. And, of course, this meant that you could do anything you wanted to it. If you were damming up a river, you had no need to pay respects to the earth's needs or welfare. If you were digging a mine, you did not have to worry about violating the earth's innards. It was simply there for our use and exploitation.

Of course, today we all see what a disastrous metaphor that has all proven to be. Global warming is just the start. Vast areas of the world have been reduced to barren rubble or desert, unfit for human habitation. Jungles have been cleared and destroyed. The seas are polluted beyond belief. It used to be that off the coast of Newfoundland, the fishermen could virtually walk on the sea, there was so much cod out there. Now the seas are closed. The fish are gone. The waters are silent. And it is the same in one place after another. DDT robbed us of the birds. Fertilizers rendered the soils barren and made dust bowls of the Midwest. Mining has stripped the lands and the coal, and oil has polluted the atmosphere. We need to respect and love our Mother. Thank God—and I mean thank God—some people now recognize this. Speaking now as an ardent ecofeminist—a woman who respects and loves her Mother—my sisters and I have now embraced the *Gaia hypothesis*. This

is the brainchild of the great English scientist James Lovelock, a Fellow of the Royal Society, who argues that the world is an organism and we should respect and love it.

Like everyone else, I, too, have brought my passage to quote. This is from Lovelock's *Gaia—A New Look at Life on Earth*. He writes: "The entire range of living matter on Earth, from whales to viruses and from oaks to algae, could be regarded as constituting a single living entity capable of maintaining the Earth's atmosphere to suit its overall needs and endowed with faculties and powers far beyond those of its constituent parts." He goes on to say that Gaia can be defined as "a complex entity involving the Earth's biosphere, atmosphere, oceans, and soil, the totality constituting a feedback of cybernetic systems which seeks an optimal physical and chemical environment for life on this planet." The other person who is developing this is Lynn Margulis.

Davies: Oh, the ex-wife of Carl Sagan.

Matthews: I'm not going to rise to that. In this discussion, Lynn Margulis is no one's wife or ex-wife. She is one of the most brilliant scientists of our age. I am sure that this will come up at a later point.

Fentiman: So, pull it together now.

Matthews: My position simply is that we live in a developing world, and that God is part of it. He lives throughout all reality.

Wallace: Sorry, I've got to get in here. That is total heresy. God is not the world. The world is his creation. He is separate from this. To argue otherwise is to be a pantheist, like the Dutch philosopher Spinoza.

Matthews: I'm not a pantheist, and indeed I'm not sure that Spinoza was a pantheist. Technically, I am what is known as a "panentheist." The American philosopher Charles Hartshorne wrote about this. I think that God is everywhere, but that he is sustaining the Creation. He is with of it, but not part of it. The world is an organism. It exists independently, just as we humans do. God strives to bring it to fulfillment, but the world and we humans must work with God to realize the ends. In this sense, science and religion work together. If you think about it, I couldn't be anything but an integrationist. I'm a holist, I'm an antireductionist. I'm an emergentist. The whole is bigger than the parts!

Davies: The trouble with people like you is that you just keep chopping and changing things to suit your needs. Now, God is eternal. Now, he isn't! Now, God is all-powerful. Now, he isn't! I thought religion was supposed to be about the eternal verities. How can it keep changing as you suggest?

Matthews: Giving you the courtesy of thinking that this is a serious question and not just a rhetorical attempt at refutation, I am going to give you the answer I once heard Langdon Gilkey give to a professor of anatomy who was ribbing him on just this point. He asked the anatomist: "Well, tell me, how is your Department of Bleeding going these days?" The anatomist pulled up in indignation and replied: "We haven't had a Department of Bleeding since the eighteenth century." To which Gilkey responded: "Then why do you keep claiming that religion and theology must always stand still? Science and medicine change over the years as we get better understandings. Why should it be any different for knowledge of the Divine? In both cases, as new ideas and new techniques come in, we try to give a better account than previously." And that is precisely how I think I can move beyond Augustine and Aquinas and on to Whitehead. He was not more brilliant than the earlier thinkers, but he did have many hundreds of years of thought and discovery to build upon.

Fentiman: Well, after that, anything is going to be a bit of an anticlimax. Sorry about that, Martin Rudge. But, it's your turn now.

Rudge: Don't feel sorry for me. Like the marriage at Cana, the best is left until last.

Davies: Explain.

Rudge: The Gospel according to John tells us that the first miracle Christ performed was at Cana. He was at a wedding and the wine ran out. At the urging of his mother, Jesus had the pitchers filled with water and turned them into wine. The point was that they were better than the wine that had gone before. So when you say that something is like the marriage at Cana, you mean the best is left until last. But, when you spell it out like that, it's not that funny. So I won't try any more jokes like that.

Davies: Thank goodness. In any case, I thought you were an atheist.

Rudge: Actually, I think of myself as more of an agnostic—I really don't know the answers—although I prefer to call myself a “skeptic.” Agnostics so often strike me as people who don't really care about the issues. I care desperately; it is just that I don't have the answers. And by the way, although I realize that my Cana joke may not have been that funny—at least, when it was spelled out for people like David Davies—I am not going to apologize for making biblical references. It may not be very politically correct, it may violate the separation of church and state—and I, of all people, think that that's important—but, the Bible is part of our cultural heritage. Dead white males and all.

So to be perfectly candid, and no doubt to be insulting and certainly to be guilty of the same sin all over again, I think that anyone who does not know the basic biblical references is a bit of a philistine. We all live in a society that, for all its faults, gives us freedom and the time and health to follow our interests. In return, we should understand and appreciate the beliefs and references of those who made it possible. And no one can know anything about the history of the United States without knowing about the key significance of Christianity. It was this that sustained our predecessors through the awful and hard and boring and dangerous mission of making America the land that it is. So, we all have an obligation to know about the beliefs of our founders, and I don't just mean those that signed the Declaration of Independence. Oh, and by the way, Dave, I'm not ramming my beliefs down your throat. Philistines come from your part of the Bible.

Fentiman: Right, folks. Great stuff, but let's calm down and keep to the topic. Martin, where do you stand on the science and religion issue?

Rudge: It seems almost too pat to say this, but I'm drawn strongly to the one slot still left empty, the independence option. I agree 100 percent with David Davies that science and religion can clash. Here, we are echoing Richard Dawkins, who has stressed this point strongly. I think one of the worst books I have ever read is Richard Dawkins's best seller *The God Delusion*. The level of discourse would make a bright sophomore cringe. But agreeing with Dawkins is not always a silly thing to do. In fact, when it comes to Christianity—son of God, died on the cross and then resurrected, and so forth—I probably have no more belief that Dawkins or Davies. Belief or not, there's a clash. The fact is that you cannot believe in the modern theory of evolution and be a Young Earth Creationist—that is, someone who thinks the earth is only six thousand years old, that the total

creation took six literal days, and so forth. That's just not on. My favorite example of a clash comes from the Mormons—the Church of Jesus Christ of Latter-day Saints out in Utah—and their beliefs about North American Native people. They think that the “Red Indians” are the descendants of some of the lost tribes of Israel—Ephraim and Mana, to be precise—and that those left are the dark-skinned and degenerate “Lamanites.” In the light of modern science, which shows absolutely no biological connection between Jews and American natives, but serious links to peoples who might have entered North America from Asia via Alaska, you simply cannot take the Mormon claims seriously. You either go with modern anthropology or with Joseph Smith and Brigham Young, but not both.

So, conflict is right on the table. That is established. The question is whether that is the end of the story, as Dave here argues. I don't think it is. Remember that I don't want to defend Christianity—let's stay with that—as something true and real. I have already said I myself don't think it is. The point is whether someone can be a Christian—someone who does think that Christianity is something true and real—and accept modern science all of the way.

Obviously, it all comes down to what you mean by “Christian.” Given what we've heard already in this discussion, that point is almost a truism. If you are like Hal, then whatever he may say, I think you are plunged into the conflict almost immediately. I've looked at his church website and I know that as part of their faith commitment, they single out evolution explicitly as false. But leave him and the Southern Baptists, and go the other way. If you have a kind of watered-down Unitarianism, then you can obviously accept all of science. If you say that you don't know if God exists and if he does, it is all subjective—God is what God means to you—and Jesus was just a good guy and the miracles did not occur or if they did they were natural—a passing comet parted the waters of the Red Sea—then you can have all of the science that you want. It seems to me that this is the position of people like the biologist Ursula Goodenough. They want to have a kind of spirituality without the spirit, or at least without the Spirit with a capital S. You can hug trees and can get into the Gaia hypothesis, and have physics, chemistry, and the lot. It helps if you talk in deep tones about things like emergence and holism.

Davies: What is this “wholism” that you keep talking about?

Rudge: Sorry, it is one of those words like “hegemony” and “hermeneutics” that intellectuals like to throw into conversations today, without much

knowing what they mean. It was a term invented by the South African statesman Jan Smuts, who fancied himself as a bit of a philosopher. It means that you cannot understand something by just looking at the parts. You must look at the whole. In other words, it is the opposite of “reductionism.” Incidentally, to confuse things even more, it is spelled without a beginning *w*, as *holism*.

Back to the point I want to make. I just don’t think that watered-down stuff about feelings and hugging trees and wearing herbal sandals is Christianity. It is thin to the point of nonbeing. I may be a nonbeliever, but I’m a pretty conservative nonbeliever. I think the Christian, at a minimum, has to accept God, Jesus as the son of God, death on the cross and subsequent Resurrection—whatever that might mean—forgiveness of our sins, and the possibility of eternal salvation. That’s my quarrel with Stephen Jay Gould. In his little book, *Rocks of Ages*, he talks of science and religion being two *Magisteria*—ways of looking at things that cannot by nature clash. But then, he waters down religion to vague ethical sentiments. People who want to believe in things like the Resurrection are apparently silly. As far as I am concerned, that is the whole point. The Resurrection may be false, but I want a space for people to believe in it as well as science. False, but not necessarily silly. So my question is whether you can have a genuine traditional Christianity—remember I am staying with this religion, and by traditional I mean the Christianity of Augustine and Aquinas, Luther and Calvin too, if you like—and hold on to science?

I think you can. Traditional Christianity has never insisted on an absolutely literal reading of the Bible. It has always been understood that interpretation is needed, and sometimes is absolutely necessary. Saint Augustine was clear on this. Even in his day, four hundred years after Jesus, there was still debate among Christians as to the attitude they should take toward the Old Testament. This collected the sacred writings of the Jews, but the Jews were the people who had urged the crucifixion of Jesus and rejected him as the messiah. Some groups or sects, including one known as the Manicheans, thought strongly that, given history, Christians had no business accepting the Old Testament, and they made almost a profession of finding flaws in the writings, such as the two inconsistent accounts of the Creation, as given in Genesis 1 and 2.

As a young man, Augustine was attracted to the Manicheans and, like them, he rejected the Old Testament as false. When he converted to Christianity, as part and parcel of the deal (as one might say), Augustine had to reverse himself on the veracity of the Old Testament. There were good reasons to do this. Most importantly, the Old Testament makes sense of the New

Testament: Why did Jesus have to die on the cross? To wash away our sins. Why are we, the creation of a good god, sinful? Because Adam ate the apple. But, having to this point spent his time poking fun at literal interpretations of the Bible, Augustine, always warned his fellow believers of the problems with literal interpretations. It is true that the great reformers, Luther and Calvin, were much keener on reading the Bible as it is, but they, too, recognized the need to interpret. Calvin spoke of God accommodating his language to the common people. There was no point in God using the terms of sophisticated science because no one would have been able to understand it.

Davies: Yes, but even if you allow that Christians have the freedom to interpret the Bible to such an extent as to allow modern science—and I should say that I'm still not absolutely convinced on this—you still have the miracles. Physiology tells us that when somebody dies, they die. What about Lazarus and Jesus? It seems to me that this is just as much of a conflict with science as the Mormons and their crazy ideas about the Navajo.

Rudge: Actually, although there were Navajo in the southern part of what we now call Utah, the Omaha were the first Indians that the Mormons encountered on their trek west. Then, hardly surprisingly, it was the Utes. But, get back to miracles like the Resurrection. That seems to me to be a really important question. I think you can go two ways on this, and it all rather depends on your interpretation of "miracle." So far, we have been talking as if miracles always mean breaking laws. But that's not quite accurate. If you are in the tradition of Augustine, then you downplay the breaking of natural laws aspect and concentrate on meaning. A miracle is less something that is a violation of physics, say, and more something that means something to people at the time or later. If someone is cured of an illness after prayer, it's irrelevant whether or not God broke the causal chain or whether there was a real medical reason for the spontaneous cure. The point is that it means something; namely, that the person was cured after prayer.

The same is true of the Resurrection of Jesus. It is irrelevant whether physically he rose from the dead. Don't get into the business of thinking that perhaps he was in a catatonic trance when he was taken down from the cross or whether his stinking body was or was not in the tomb on that Sunday morning. The point is that the disciples, who were downcast, were suddenly filled with hope and love, to an extent that they went forth to spread the gospel. And if someone says that this is a well-known psychological phenomenon, then so much the better. It simply doesn't count against the meaning of the Resurrection.

The other way, usually associated more with Aquinas, is to accept that miracles do indeed involve the breaking of law. Note that this does not always cause problems. We've already mentioned transubstantiation, the turning of the bread and the wine into the body and blood of Christ during the Catholic Mass. This doesn't break laws as we can see them, because no one ever says that the breadlike and wine-like substances disappear. More generally, however, what you have to do is invoke the distinction between the Order of Nature and the Order of Grace. Normally God works through unbroken law. But when it came to human salvation, where he himself had to come down to earth and become human, it was necessary to have lawbreaking miracles. This is the Order of Grace. Don't look in your funeral parlors for the spontaneous reappearance of life, because it just won't happen. But, it was necessary that it happen this once—more if you take other miracles into account—a couple of thousand years ago in the land of Palestine. Some Christians, of course, rather muddy all of this by assuming that lawbreaking miracles are still going on, but I can only defend the position so far. Although, note how reluctant the Catholic Church is to accept miracles and visions and so forth.

Fentiman: I'm still not sure, Martin, that you've told us why you're an independence person. Let's agree that you've made a space for science and religion, but you haven't really told us why you think they must be independent.

Rudge: Fair enough. My position, and we've already mentioned people like Karl Barth on this—in fact, I think that Gould was right in principle if not in execution—is that science and religion speak about different things. This is where I am in square opposition to Richard Dawkins in *The God Delusion*. Science and religion can be in opposition—Noah's Flood is simply inconsistent with modern geology—but, essentially, Dawkins is just wrong when he claims that religion is an empirical matter. God—the God of the Christians and the Jews and the Muslims—is not something unseen like a dinosaur or an electron. If he does exist, then he is wholly other. For a start, we humans are contingent. Hard as it may be to imagine, David Davies might never have existed—just not there at all. God, however, is a necessary being. He stands outside time and is, thus, eternal. Just as $2 + 2 = 4$ is necessary—it never became true and it will never become false—so God exists necessarily. He is not just very old, but beyond age. You might think that this does not make sense, but it is part of Christian theology. This also defines our relationship to God. Because he is necessary and we are not, we must have been created by an act of free will. We do not follow as a matter of course, like Pythagoras's theorem

follows as a matter of course from Euclid's axioms. God did not have to make us, but he did—out of love, argues the believer.

Hence, the whole business of putting God claims on the same level as material claims is what the philosophers call a “category mistake.” It is like asking if Tuesday is tired. Tuesday is simply not the sort of thing that can be tired or not tired. Likewise, God claims have to be different from claims about the physical world, the object of science. Langdon Gilkey—Emily has mentioned him already—who was a theologian for many years at the University of Chicago School of Divinity and was probably the most eminent spokesman for the neo-orthodox position in America in the second half of the twentieth century, used to speak of “how questions” and “why questions.” Think of somebody asking you what you did yesterday afternoon. How did you fill your time? You could say: “Well, I went on a picnic with my family, and we took the Chevy, and we ate ham sandwiches and drank Coke. Then we paddled in the stream, and then we went back home and got caught in a traffic jam.” Or you could talk about why you went on the picnic: “My kids and I put on a picnic in order to celebrate my wife's birthday. We wanted to show her how much we love her and how appreciative we are of what she does for us.” Two different answers—both perfectly good, but about different things. They not only don't clash, they couldn't clash. The same is true of talk about the physical world and talk about God. Chalk and cheese, as we've said.

Davies: I'm not sure about the not-clashing bit. If you told me that you'd gone to a sewage farm then, unless it turns out that your wife is a sanitation engineer, I wouldn't accept that you were celebrating her birthday. Or perhaps you philosophers are even odder than I already think!

Wallace: I'm still not convinced that you've really gone much beyond Gould. You know where I stand—at least, I guess you do, since you've been looking at my church's website. I want to say that God is creator of heaven and earth. I want to say that humans are made in God's image. I want to say that God laid down laws of conduct and that we humans disobeyed him and that we are sinful. I want to say—and you yourself have agreed that as a Christian I should say this—that because of Jesus's sacrifice, there is a place for us in heaven and hope of eternal salvation. What about all of this? How can you make room for all of this, given your understanding of science? More than this, and here I may be agreeing with Professor Davies of all people, I am uncomfortable with making God so wholly other. Saint Thomas Aquinas said we can know God analogically. He is not our physical father, but we know

him as a father—creating, loving, caring, and so forth. Tell me how this fits into your theology.

Rudge: Well, it's not my theology, but what I take to be conventional Christian theology. I would say—

Fentiman: Sorry, I am going to have to cut off the discussion here. Let's hold this thinking, if you don't mind. I am afraid that today we are out of time. From, starting at my far left, David Davies, Martin Rudge, Emily Matthews, and the Reverend Hal Wallace, this is the host of *Eternal Questions*, Redvers Fentiman, wishing you good night, and inviting you to join us next week, when the same panel will be turning their attentions to the evolution and creation controversy.