

Ian Barbour

“God and Evolution”

with a short introduction to the series by Michael Dowd

Episode 1 (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.

Host (Michael Dowd): Welcome to “The Advent of Evolutionary Christianity: Conversations at the Leading Edge of Faith.” I’m [Michael Dowd](http://MichaelDowd.com) and I’ll be your host throughout this 38-session series, which can be accessed via EvolutionaryChristianity.com, where you too can add your voice to the conversation.

For those of you who that aren’t familiar with me, I’ll give you a little background. My wife, Connie Barlow (an acclaimed science writer), and I have lived permanently on the road since April 2002. Travelling all over North America, we’ve spoken to more than 1,500 different groups—from devoutly religious groups of all different kinds to nonreligious and even, occasionally, anti-religious groups. We’ve also spoken in over a 120 college and university classrooms, and environmental settings, and secular settings. So we speak to a broad range of religious and non-religious people. But our message is pretty much always the same: to tell the 13.7 billion year history of cosmos, Earth, life, and humanity as our common creation story—as a meaningful story, as a sacred story, as a story that can help us to see ourselves in a new way: in a way that inspires us to cooperate across ethnic, political, and religious differences in service of a just, healthy, and sustainably life-giving future for humanity and the larger body of life, of which we’re a part.

My passion as a Christian, as an evolutionary Christian, a Christian naturalist, is to share how an evidential understanding of reality can deepen and enrich and expand people’s faith. I’ve envisioned something like this series for the last few years—that is, bringing together the wide diversity of Christian thought leaders and ministers who are really on the growing edge of integrating our best science-based, evidential understanding of reality—that is, humanity’s collective intelligence—and integrating that intelligence within a Christian context in such a way that it enhances ministry—in a way that gives us a larger understanding of God. It gives us a deeper appreciation of traditional and biblical wisdom. This conversation is really the fruit of that vision that I’ve had for several years.

This series came about as a result of sort of a frustration that I had—of recognizing that, as far as the mainstream media goes, you would think that there were only two games in town. Either you’re a science-rejecting creationist or you’re a faith-rejecting atheist. It seems that those are the only two extremes that ever get reported. And yet there’s millions in the middle, possibly even the majority in the middle, who find a way of embracing both science and spirituality, both evolution and theology.

That is, for most of us, it goes beyond mere reconciliation. For me, for example, evolution strengthens, deepens, and enriches my faith. In fact, the thing that motivated Connie and I to live on the road for the last nine years is that back in 2001, just after 9-11, PBS showed what, to this day, is one of the best programs on television on evolution. It was a seven-part special whose last program was called, “What About God?” In that program, they interviewed science majors at Wheaton College. Wheaton College is an evangelical school in Illinois. The students were grappling with how to hold on to their faith with what they were being taught at this evangelical college, which was evolution—because at almost all evangelical colleges and universities, they teach evolution in biology class. So this program featured the students who were being told by their pastors (and in many cases, their parents) that evolution was of the devil and all the evils of the world could be attributed to Darwin. And yet they were being taught at their Christian college biological evolution as the foundation of the life sciences. In fact, it’s not just the life sciences; evolution as a paradigm is the foundation of the entire discipline of “big history,” which is the history of cosmos, Earth, life, and humanity told as one modern-day creation myth.

So these students were grappling with that, and at the end of the PBS program Connie looked at me and she said, “You need to be out there speaking to these students, because the best that they’re being offered is that their faith can be reconciled to evolution. And what you’re saying is that science can strengthen, and expand, and enrich their faith.” Within a few months it became clear that this is what we felt called to do. So, in April of 2002, we hit the road and we’ve been travelling North America ever since.

The purpose of these series of conversations is really three-fold. The first main intention that I had for this series was to show in as compelling ways as possible how it is that humanity’s collective intelligence—that is, our best scientific understandings of physical evolution, biological evolution, and cultural evolution—that this story, the big picture (what’s called big history, or the epic of evolution) not only doesn’t have to threaten religious faith; it can positively expand it and deepen it. I think what you’ll find is that this is true for all the speakers in this series.

The second intention that I have for this is to demonstrate that, whatever our differences (and we have some fascinating and sometimes rather infuriating differences)—whatever those differences, there’s far more that evolution-celebrating Christians hold in common, especially in terms of values.

Indeed, my third intention is to see what “core commons” might emerge from our interactions. Without either ignoring our differences or highlighting them, where can we claim to speak with one voice? In fact, I can confidently say that evolutionary Christianity points to those who value evidence as divine communication. We all have “deep-time eyes”—that is, a deep-time perspective given by science. And we all have a global heart—that is, we’re all committed to a just and healthy future for humanity and for the larger body of life.

You’ll see that the diversity in this series is extraordinary. We’ve got two Nobel laureate scientists: Charles Townes and Bill Phillips. We’ve got two Templeton winners (actually three, because Charles Townes also won the Templeton prize). The other two are Ian Barbour and John Polkinghorne.

We've got four of the most respected voices within the evangelical community: Karl Giberson, Owen Gingerich, Ted Davis, and Dennis Lamoureux.

We've got three highly respected voices within the Catholic tradition: John Haught, Kenneth Miller, and Richard Rohr. And then also, two "Sisters of Earth": Gale Worcelo and Mary Southard, who also are Roman Catholic, of course. *[Editor's note: After this first episode aired, listeners pushed for the series to include more women. Four additional Catholic sisters were added: Gloria Schaab, Ilia Delio, Joan Chittister, and Linda Gibler.]*

And then, two of the most popular and best-selling authors within liberal Protestantism: John Shelby Spong and Matthew Fox—each of them having some 25 to 30 books that they've written.

There are also two of the leading process theologians, John Cobb and Philip Clayton, and four of the most respected leaders within the emerging church movement: Brian McLaren, Spencer Burke, Doug Pagitt, and Sally Morgenthaler.

Within the realm of progressive, or what is sometimes called "integral," Christianity, we have Jim Burklo, Tom Thresher, and Ross Hostetter, *[plus, Gretta Vosper and Paul Smith were invited later]*.

The field of evolutionary Christian mysticism brings Ian Lawton, Bruce Sanguin, and Kevin Kelly. And then, finally, there are "Great Story," or "epic of evolution," enthusiasts: Diarmuid O'Murchu, Michael Morwood, and myself.

I think what you'll find is that each of these thought leaders [will speak about] not just some expanding ideas about the nature of reality and the nature of what God's been revealing through science, but also how that can be practical in our lives so that we're called and empowered to live lives of greater Christ-like compassion, generosity, care, consideration, humility, authenticity, and love—that we love life in all of its fullness. And that we truly are able to have the eyes of faith, so that when bad things happen, when challenging things happen, when difficult things happen, we're able to see God at work, life at work, reality at work in a way that can enhance our lives. That's my hope. That's my prayer—that not only will you benefit intellectually from these series of conversations, but they'll make a difference in your personal life.

The practical benefits go beyond personal lives. To my mind, studying evolution is like following cosmic breadcrumbs home—home to God. I would say that only by looking through evolutionary eyes can we see our way out of the current global integrity crisis that is destroying economies and ecosystems around the world. This perspective, this common creation story—what God's been revealing through science—can help us to cooperate across ethnic and religious and political differences in service of a thriving future for all of us. And that, I believe, is what "thy kingdom come thy will be done on earth" is really all about.

So, how is this series going to work: Here's the overall shape of things. . . *[Editor's note: The details of the actual event in December 2010 through January 2011 have been removed from this transcript.]* . . . So that's it. And now,

I'd like to introduce you to Ian Barbour, our first presenter.

[Ian Barbour](#) is the granddaddy of this science and religious movement. His 1966 groundbreaking book, [Issues in Science and Religion](#), is widely credited, rightly credited, as really creating the modern science and religion conversation. As you will learn, Ian is 87 years old, and when I thought about whom to begin this conversation series with, there was really nobody that could begin it other than Ian Barbour.

Host: Hello, Ian, and thank you for joining this conversation on evolutionary Christianity.

Ian: Glad to be with you, Michael.

Host: Well, Ian, I want to say at the start, what an incredible treat it is for me to have you participate in this series of conversation because your book—written, I think, in the mid 70s, [Myths, Models, and Paradigms](#)—was one of the most significant books that I read during the entire, I would say, late 70s to 80s. You have been one of my intellectual heroes ever since then. That was my first encounter with your work, and then I went back and read some of your earlier writings.

Ian: Thank you for your kind words.

Host: Well, it's a real treat because, more than anybody else, you are considered sort of the grandpa of virtually all of us in this field of science and religion. And yet I don't want to assume that our younger listeners, especially, are familiar with you and your works. So, could you please give our listeners a sense of who you are in this movement and what you've contributed?

Ian: Well, let me start in 1946, when I was 23 years old. I already had a master's degree in physics from [Duke](#), and I enrolled in the [University of Chicago](#) in their PhD program. That was a really exciting time to be around Chicago. My first year I was a teaching assistant in a course taught by [Enrico Fermi](#), the guy who built the atomic pile under the stadium and the first sustained atomic reaction. I was taking quantum physics from [Edward Teller](#), who was in the class recruiting people to come down to [Los Alamos](#) to work on the hydrogen bomb, the fusion bomb. . .

Host: Oh my goodness!

Ian: So it was an exciting time to be around. I was working, after I finished coursework, on an experiment in high energy physics. But then I decided I really wanted to go into teaching. I took a job at the [Kalamazoo College](#) in Michigan and ended up as the chairman of the physics department. But I was increasingly concerned about ethical issues arising from science and technology, but also about whether religious beliefs are credible in an age of science. So I took a leave of absence and went to Yale to study philosophy and theology. And I got so interested, I resigned from Kalamazoo and went on and got a divinity degree from [Yale Divinity School](#). Then I was offered a job at [Carleton College](#) here in Minnesota, teaching half-time in physics and half-time in religion. I sort of explored first how these two

halves of myself fit together, and then I realized that a lot of other people were interested in it. So I wrote the first main book, called [Issues in Science and Religion](#). It was published in 1966.

Host: I actually went back and that was the next thing that I read after [Myths, Models, and Paradigms](#). The next thing I read of yours was the [Issues in Science and Religion](#).

Ian: And then, rather later on, I was invited to give the [Gifford Lectures](#) in Scotland in '89 and '90. Those [lectures] were published as [Religion in an Age of Science](#) and [Ethics in an Age of Technology](#). So there are those two kinds of interactions that have really been the center of my life, both in teaching and in writing. In 1999 I was awarded the [Templeton Prize](#) for Progress in Religion.

So, anyway, I just celebrated my 87th birthday, and I'm enjoying retirement and keeping up on some of these issues. So I'm glad that I can enter into your dialogue.

Host: Well, thank you, thank you. That was a great overview. . . One of the things that you're well known for is a model that you proposed, often called the "four types" or "four ways" that science and religion typically interact. Could you talk a little bit about that model?

[Editor's note: The four types are: Conflict, Independence, Dialogue, and Integration]

Ian: Well, I think it's a good way of getting an overview that roughly provides categories for understanding. The most prominent [of the four types] in the media is the *conflict model*. You get the atheistic scientists on one side, who believe in evolution but not God. In the opposite extreme, you get the fundamentalist Christians (and even some of the "intelligent design" people), who believe in God but not evolution. Intelligent design people are much more sophisticated, in that they accept many areas of evolution but they think God had to intervene at specific points to kind of push the evolutionary process. So they're much more careful [in speaking about evolution] than are the biblical literalists. But that's the model that gets publicized, and I think it's partly because the media likes a good fight. So, if they can have a television program and they get two people who are going to disagree. So they pick the two extremes, and they leave out all the people in the middle who believe in both God and evolution.

One way to avoid the conflict is to put [science and religion] into completely separate boxes, and say they're not related to each other at all. Science and religion are totally *independent*. One asks *how* questions, about the details of the natural process. The other asks *why* questions: What is the ultimate purpose of it all? What is the meaning of the process? And that's a good starting point, because at least it gets you out of the conflict. If they're playing different ballgames, playing on different playing fields, so to speak, they're independent of each other. And it's a violation of the rules if you try to play baseball by football rules or football by baseball rules; these are just different games. I think that's a

good starting point because it avoids conflict —but the price is there's no interaction between the two.

[The “dialogue model”]: I mean, the very important parts of the dialogue that both you and I have been involved in: that requires some comparison of the methods, and there can be some similarities, some points where there are legitimate challenges to religion. I think that's what gets left out. You get people like [Richard] Dawkins, the Oxford biologist who says science proves that there is no God and that the universe has no purpose that can be based on science. I welcome what Dawkins [has to say] when he makes it clear that if he's saying “matter is all there is,” then that's a philosophical statement, not a scientific one. You don't get any article in *Physics Review* that says QED, there is no God or there is no purpose. So I welcome a materialist [into the dialogue] as long as it's clear that when he says there's nothing but matter, that's a philosophical statement. If you think that science has some limitations (as I do), for example, the fact that it doesn't deal with values, then that's where I like to start because it avoids each person's sort of claiming to be an expert in the other field. But I don't want to stop there [with dialogue], because there are important things to learn from science that the theologian needs to learn.

Particularly, the religious traditions that are based on scriptures that were written years ago—after all, the Bible was written in a day when it looked like there was a heaven above and a hell below. Astronauts have shown us that that's not quite right. Or the idea that death is a punishment for human sin—which you can get out of *Genesis*. I think that we know that death was around long before human beings were, and also that's a kind of a judgmental God who intervenes—and that's not the God I believe in. So I think one can get beyond just simply separating them [science from religion], and say there are legitimate interactions as long as you're careful to distinguish what you are saying. You're saying, let's say, the Genesis seven-day creation story is not to be taken as a kind of scientific revelation to these early writers—but this was their interpretation within the worldview that was dominant then of religious insights, of their religious experience—and always interpreted. Because I think even religious experience isn't an absolute. It's always interpreted within a tradition. So, I don't expect science to *prove* the existence God, but I do think science can teach a lot of important aspects, particularly this 4 billion years of earth history, 14 billion years of universe history. I mean that's an exciting story!

In that context, many of the religious insights can be reformulated within this new and exciting wider context. That's where I've appreciated your writing [Michael], too, because you tried to do that. I think that's what quite a few of us have been trying to do—to say, as long as we don't expect science to solve everything (which is a temptation, because science is very powerful and it's easy to think it's going to have the answers to everything), but to see it has some limitation. And, same with the religious tradition: it has its limitations. It isn't a good source for understanding the workings of nature.

Host: Yes. Probably the best thing that I've read exactly on that point is University of Miami philosopher [Susan Haack](#)'s book [Defending Science Within Reason: Between Scientism and Cynicism](#). A lot of us who are working in this field of science and religion and how the two can integrate (how they can be in a mutually enhancing dance) get charges from conservatives that, “Oh, that's just scientism.” Sometimes that criticism can be accurate,

but sometimes it's wildly inaccurate. I think it's important to find where the two can be in fruitful dialogue—as you say, that third model of Dialogue: that each has things to say to the other about phenomena where their interests overlap.

Ian: Yes. I take scientism to be the view that science is the *only* method of understanding reality. It's more than science because it is saying science is the exclusive path to understanding, and that is not itself a scientific statement but a philosophical interpretation. I think that's a good way to put it. Cynicism is one outcome for many scientists who think the world is purposeless. I don't think all materialists are necessarily cynics, but some certainly are; some see a purposeless universe and think that any values we have, we have to make up for ourselves. They see some goals that are important in life. But for many it does lead to either a kind of either a stoic toughing it out—a courage to exist, despite despair—or it leads to a more pessimistic view.

We mustn't blame scientists too much because I think I'm very dedicated to science, as you are, but *scientism* is a little bit going beyond what science itself says. The limits of science, for me, are beautifully illustrated by a little parable told by the physicist [Arthur] Eddington. The parable is about a fisherman with a net with one-inch mesh. After repeated trolling he says, "There are no fish in the seas smaller than one inch."

Host: Oh, that's a great analogy...

Ian: So he wasn't able to catch them.

Host: Yeah.

Ian: So I want to both respect the power of science—which is immense—but also its limitation if it becomes sort of a total philosophy of life.

Host: Yeah, exactly. There's another form of cynicism, which is sort of the cynicism coming out of postmodernist circles that basically says, "Science is just another language game and it's got all these limitations." That form of cynicism really doesn't *get*, in my opinion, the worldwide, self-correcting enterprise that we call science—which is really an exercise in collective intelligence.

For most of human history, different cultures had different mythic takes on reality: [how things are](#) and [which things matter](#), as philosopher of religion [Loyal Rue](#) talks about it (also [here](#)). They used different metaphors, different analogies. They had different models that they were working in, and of course they were reflecting on a very different world, in different parts of the world. What science is, at least one way of thinking about science, is that it's a global enterprise that tries to discern, "Is this true in a measurable, empirical way?" that we can all agree on—no matter what our philosophy or religion or background or nationality. Or is it merely *said* to be true because some charismatic or authoritative person said it, or because it's been passed down for so many generations by tradition that we assume it must be true?

The other thing that often gets dropped out of the conversation—so often, even on both sides—is the necessity that we humans have for interpreting. We can't *not* interpret. We're always meaning-making. Science can give us descriptions of reality, but the idea that those descriptions then necessarily lead to a meaningless universe is itself an interpretation.

Ian: Right, right. But we can still, I think, learn an awful lot from science as long as one recognizes these limitations. I think we've had to think of *design* in a whole new way that's different from both the [Dawkinses](#) of this world and even the "[intelligent design](#)" people (like [Michael Behe](#)), and that is that if we look not at *static design*, as the classical Christian view thought—one pattern, once and for all, put into effect by God and that's it, everything created in its present form—if instead we realize that the pattern is changing over time. In this long evolutionary process, that design is not seen in the particular organism as much as [the direction of the whole process](#).

Even there you don't look for a simple direction. [Stephen Jay Gould](#) once said that evolution is not like an arrow, or even like a tree; it's more like a bush that goes in a lot of different directions. There is an overall trend, probably, towards complexity and towards consciousness. So there is a trend, but you're not looking for a static design once and for all. You're looking for an open-ended dynamic process—sort of a work in progress, continuing creation, if you want. I think it gives us really a much grander picture of a God who created things to create themselves, who created things that could organize themselves, rather than imposing a fixed once-and-for-all pattern. And it's not over yet!

Host: Yes, exactly.

Ian: The other insight that I think religious views can benefit from understanding is the idea of levels of organization. That's become much more prominent in recent scientific thought. I think you call it the "nested hierarchy"?

Host: Yes, yes, "[nested emergence](#)" (also [here](#)). Speak to that if you could—please.

Ian: Well, I think the idea of [emergence](#) of new levels (both in evolutionary history and in the growth of an embryo)—that new levels of organization come into being that cannot be simply reduced to lower levels. It's easy to sort of go along with the tendency of some scientists to a kind of reductionistic view that religion is just psychology, and psychology is really just neurons and chemistry, and chemistry is really just physics. So, [they would say] if you understand the physics, you understand everything. I think we can legitimately resist that and say that at higher levels you need concepts that can't even be expressed in lower-level terms.

But you also need the idea of [top-down causality](#): that things that go on in the higher level influence lower levels. So wholes influence the parts. Of course it works the other way too. You can say, in many respects, the parts *do* determine the whole or do influence the whole. But they don't necessarily determine it. And this is where, I think, we can resist genetic determinism, which says the genes do everything and there's no possibility of

freedom, or that anything that looks like it's going on at a higher level is really an illusion. So I would say you've got to think of bottom-up causality—or bottom-up influence, at least—and that's a lot of what you do when you study at the molecular level. But, you can also look at [systems theory](#) [that instructs that] the patterns of the whole are more than just the sum of the parts. There is a sort of holistic view where you need to look at the wider context of any part. And then I think that the theologian can legitimately extrapolate. This is not to say that it proves that there's a still higher level. But the theologian, who for other reasons, based on religious experience in a historic community can find new ways to talk about God. I think the idea of top-down causality (in which what goes on at the higher level influences what goes on a lower level without violating the lower level laws)—I think that's the lesson of [complexity theory](#). The upper level phenomena set boundary conditions for the equations that govern the lower level laws, but they don't totally determine it. So I think you can defend human responsibility and freedom against the genetic determinists who would say "It's all in your genes and freedom is an illusion."

Along with it, I have one footnote, Michael: that this leads to what I would call "explanatory pluralism." You need a variety of different types of explanations. And they don't conflict with each other; they complement each other. That is explanatory pluralism. [John] [Polkinghorne](#)'s example is, "Why is that water boiling on that stove?" At one level you can say, "It's because the heat from the gas is raising the water above its boiling point." Or you can say, "It's because my wife wants tea." These don't conflict of each other; they are different contexts of explanation.

Host: I love the phrase, "explanatory pluralism." It gets at that notion that there's always more than one way to interpret anything, and there's different scale. I remember watching in [the short movie] [Powers of Ten](#) years ago that when you look at something from different scales, you see it differently. There's a different relationship. As you said, there's upward and downward causality.

I think it's a healthy thing to remind ourselves that there's no one explanation, there's no one frame or perspective, that's going to be totalizing—or that's the only one, or the only helpful one, the only useful one.

Ian: These may sound like abstract ideas. But I think they really come to bear on how one understands human nature, first, because there I think the whole evolutionary story shows our interdependence with other forms of life—ecology, particularly, that we're part of the web of life. And I think we've got to find human uniqueness in other places from the way of tradition did. The tradition in classical Christianity drew a very sharp line between humanity and other creatures—particularly by the sort of body–soul dualism, that is, an immortal soul in us that no other creature has. Such a view sort of sets us apart from nature, and it's not surprising that we didn't do much to preserve nature. We thought ourselves, the human drama, [as central], with nature as just sort of the background, the stage on which the drama of human redemption is carried out. It's not surprising we didn't treat nature very well. Add onto that the industrial revolution and so forth, where nature [is thought of] as just a resource.

If we are to see ourselves as part of the process, then nature is more than a resource. It's another part of the web of life. Human uniqueness must be found in other places—I would say, probably in human language and the capacity for symbol making: that's probably the most distinctive thing. [Frans de Waal](#) at [Emory University](#) has done all these interesting experiments with chimps that show they have a social order and they grieve over harm done to another chimp. They really have a kind of empathy that is, I think, sort of the roots of human love and human capacities.

Host: One of my great mentors, [Thomas Berry](#), who just died last year, continually reminded people of the downside of having, what he called, radical discontinuity between humanity and the larger body of life. To the degree that we think that we're separate from the body of life, that we're somehow special in a way . . . I mean, all creatures are special, all species are special. They all have their own unique roles within the body [of life]. But to put us above it all, and that our role is to dominate the process: that's really a source of many of our problems. One of the things that I found tremendous value in is this notion that we *are* the universe, becoming conscious of itself—that there's been this 13.7 billion year process of divine creativity that has resulted in a part of the universe in this solar system that can reflect on itself and its nature.

Ian: Right, and we have [atoms in our hands that were forged in those primeval stars](#) — that's going way back even.

Host: Exactly!

Ian: The animate world, too, that we depend on and that we're the product.

Host: Yes.

Ian: I think that [the evolution story that Thomas Berry presents is a very exciting one](#). He certainly spent most of his life broadening it and spreading it abroad. Because I think it does have to be presented in an exciting way: often it's through poetry, as well as through reasoned argument. I think we need to do much more—in my case, in the Christian church—to express that side. How often do you hear a sermon on the doctrine of creation as compared with something to do with redemption and sin, the punishment of sin? Instead you can picture a loving God who is more intimately related to the process. So I do think also the concepts of God need to be reformulated.

Host: Amen.

Ian: And I think you pointed out that the Christian tradition has over-emphasized transcendence—God up there, intervening in the world sometimes. [Instead we] need to give [our concept of God] a greater sense of immanence *in* the world. I think maybe you go further than I do in stressing the immanent side because we certainly have neglected it in the past...

Host: I'm not sure that I do. You mentioned that in an email and I thought to myself, "Hmmm... I want to talk to him about that." I use this analogy of nesting dolls—dolls within dolls, spheres of creativity within larger spheres of creativities, ranging from subatomic particles, to atoms, to molecules, to cells, to organisms, and so on. [I imagine God as a sacred proper name—a personification, if you will, of Ultimate Reality](#), that includes nature, that includes what we call the universe, yet also transcends anything we can know, think, or imagine.

For me one of the things that this [epic of evolution](#), this [sacred universe story](#), originally introduced to me through [Thomas Berry](#) and [Brian Swimme](#)'s work—what it's done for me more than perhaps anything else related to theology is it's brought God back. The immanence and omnipresence of the divine was pretty much lost when we had this mechanistic model (this understanding that nature is like a complex clock), which sort of relegates God to being the creativity that brought the clock into existence back before, but is not creatively involved [now].

I think that's a trivial understanding of God. It's more like thinking of God not as creator but God as engineer: God who figured it out ahead of time and just all created it. I like to think that each moment in the last 13.7 billion years has been a creative moment for God, for ultimate reality, and that God is creating each step of the way: so that the creativity of the divine is an ongoing process that we now can participate in. When we're led by our hearts and when we're led to work for justice and peace and sustainability and the health and the wellbeing of the larger body of life—upon which we're totally dependent and of which we're a part—we are participating in this billions of years old divine creative process. For me, that's a far more intimate God than imagining a God that was creative once 14 billion years ago or outside the process.

Ian: Well, I can affirm that. I guess the question is, if one speaks of personal characteristics as sort of a personification, I resonate to that because we never do fully understand God. We have to use models. That book you referred to that I wrote many years ago models both in the physical world (the electron is both a wave and a particle, and you can't quite fit them together). We need diverse models. Most religious traditions have some personal metaphors and some impersonal ones, and it's a little hard to fit them together. But I'm a little bit afraid that the impersonal ones (like the phrase "creative process") seem to swallow up the more personal ones.

I think a God of intention, particularly a God of love (and this is where I particularly think one has to question the omnipotence of God)—I think this is where I find the process philosophy of [Alfred North Whitehead](#) and [Charles Hartshorne](#) and theologians like [John Cobb](#) today, who say (particularly in the light of evil and suffering in the world) that we need to stress God's love more than God's power. This ages-old problem of how you fit together an omnipotent God and the evil in the world and a loving God—and I would rather give ground on the omnipotence than the love. I think the tradition has had too much a model of God as the king who intervenes unilaterally from outside—a God of coercion, not a God of persuasion. This is where I've learned from the feminist theologians that power can be empowerment from within, not control from without.

Host: Amen.

Ian: I think the whole evolutionary picture makes the problem of evil and suffering and death a little more tractable. You have to have death if you're going to have room for new individuals, new species to emerge. So that far from being a punishment for sin, [death is a necessary part of the process](#). And suffering, too, [is necessary] because there's bound to be conflicts if there are real centers of power [outside of God]. And it's also, I think, putting more stress on God's temporality. Traditionally, God's eternity has been the dominant feature, occasionally interacting with the world. Although, also, you've got to say that the tradition did talk about [God] sustaining the world, but that wasn't much of an interaction. I think this bipolar picture of God as being eternal in purpose and in character and nature, but also as interactive with the world and, in particular, being *affected* by the world—even the Thomists said, “God never changes and is not affected by the world.” Yet, the insights from process thought would say, “No. God is in interaction; it's a two-way interaction.” God's experience changes as the world changes. God does not have one fixed plan in the beginning, but it's a trial and error process. It may not be as powerful a God, but it's a different form of power. It's not saying God is impotent, but he's not omnipotent either. God has the power of alluring the world towards a new future. So, I think one's got to rethink the ideas of God—and I do take the problem of evil and suffering very seriously. I think that's the biggest challenge, probably. There's a tragic element in human capacity for evil.

Host: This is one of the reasons why I really love [Frans de Waal](#)'s work, also. I've read a number of his books—most recently, [The Age of Empathy: Nature's Lessons for a Kinder Society](#). Just the other day, Connie and I were watching a [Stanford University commencement speech](#) by [Robert Sapolsky](#). He's a neurobiologist and also a primatologist. And he was talking about the uniqueness of humans: where we're alike, profoundly alike, other higher primates, and where we are very different. One of the things he was talking about was the capacity for what we would call evil. For what we could even call the rudiments of genocide within apes, within chimpanzees.

Ian: But along with that, [Frans de Waal](#) emphasizes the cooperative side. Just last week in Atlanta [at the American Academy of Religion, de Waal was the keynote speaker](#). He showed wonderful videos of chimps cooperating—different tasks where they had to work together to accomplish the task (neither one could do it alone). So they coordinated their rope pulling, for example. But then also, even a primitive sense of fairness: that one chimp would get all excited when another chimp was treated unfairly. A chimp who had been promised a reward, and the experimenter did not give the other chimp the reward that had been promised. The second chimp would be quite distraught that the first one had been [treated unfairly]. So it wasn't just on behalf of being treated unfairly himself or herself, but this capacity for empathy and for seeing things through another person's eyes. That's a very interesting...

Host: Yes. This idea that [moral behaviour emerges](#)—this emergent understanding that morality emerges from our mammalian, primate, hominid, human lineage. I think, personally, that’s one of the most exciting areas for theologians to begin to wrestle with, and for those of us within the religious circle to really take a look at, because the idea that morality is what sets us apart I don’t think is tenable anymore.

Ian: Well, de Waal does *not* say that the full human understanding of morality—which includes rational decision and includes forms of love that probably go beyond the chimps and the bonobos—[are present in chimpanzees]. But at least the important roots of empathy, which involves the ability to see things through another person’s eyes, [are present in chimps]. The chimps recognize themselves in mirrors, and de Waal says that’s sort of one of the roots of human morality.

Host: There’s no doubt that language, symbolic language, has brought into existence a whole complex range of feelings, feelings states, actions, and morality and ethics (and things like that) that’s more complex than we find anywhere else in the animal kingdom. But that idea of it being a continuum, I think, is important.

Ian: Well, this maybe too big a topic late in our interview, but I do agree that both scientists and theologians today are giving more emphasis to the role of emotions in human life and also in higher animal forms. It used to be that we thought of emotions as hindering our rational processes and something to be put to one side. Scientists used to say that, too. But in the neurobiology field, it’s clear that there are important emotions that are cognitively significant. They help your understanding.

[\[Antonio\] Damasio](#)’s work, for example, showed there are at least two tracks in the brain: quick action (largely emotional from some of the lower brain centers), and slower but more rational articulation of reasons and decisions —and you need them both. The emotions can be very important in evolutionary survival. The empathy within the emotions, which we do have some control over (but less than we think, probably), that we can redirect them towards other ends. And again, I think, the theologians have said that the image of God in man in the *Genesis* verse in chapter 1 and 2: some people have thought, well, it’s human rationality that mirrors God. Others have said, “No, it’s human relationality and human love that are much more important than just rationality.” That is, we’re not just rational creatures.

So I do think that recovering the importance of emotions—not just as sort of an add-on that clouds the water, though obviously sometimes emotions can lead to violence and can lead you to things that you later regret. But, nevertheless, emotions can be a very powerful force. And, again, in religion you need to express those emotions. That’s why congregations with some enthusiasm . . . music helps one express emotion in the various forms that music can take. Some of our Protestant mainline denominations are pretty cold and abstract. You can envy the enthusiasm, if not always the theology, of groups in which the spirit seems to move to action, and to dance and to singing, and to joy and so forth.

Here again, the concept of God—if it’s a loving God, and love and joy are the main characteristics, rather than blame and guilt and making people feel sinful and repentant.

There's a role for repentance, but I think we've overstressed repentance as the chief task in the religious life. There are things we need to repent of—but there are also things we need to be thankful for and joyful about, and hopes and aspirations: that this is where the ability to look into the future a little further and plan ahead is important. Memory and anticipation, which achieve new heights in human thought: memory as you get recorded books and culture, the whole cultural store of memory. Anticipation is not distinctive of humans alone, but is carried to new heights in human life because [hopes] can be verbalized and you can use symbolic representations of an action without doing it yourself. So these are all things that I think point to both the continuity of human and nonhuman life but also the new possibilities.

Host: Yes. When you were talking about the value of process thinking around God and the problem of evil: I just wanted to mention that two of the other participants in this series are [Philip Clayton](#) and [John Cobb](#), both of whom really are grounded in that perspective. And when you were talking earlier about the difference between reduction and emergence, and this nested creativity, I was reminded of a chapter that I read in a book that was edited by Philip Clayton, [The Oxford Handbook of Religion and Science](#). There I loved [Ursula Goodenough](#) and [Terry Deacon](#)'s chapter, called "[The Sacred Emergence of Nature](#)." It's such a wonderful explanation from a science-based perspective of this incredible process of emergence.

Before we conclude this, Ian, I would love to ask you somewhat of a more personal question. One of the things that I'm sort of floating out, to see if it works for the various thought leaders involved in this, is at least a first offering, a first draft, of what I think would be an articulation of what we do hold in common. And I wanted to run that by you and see if it resonates with you, or if you have a different way of thinking about what unites sort of the broad range of those of us who embrace both science and religion, both evolution and our faith. And that is, I think it can be said pretty confidently that we all have evidential deep-time eyes: evidential (evidence based), deep time (meaning long term). So, a science based, evidential understanding of the deep-time past (billions of years of history) and the fact that the universe is going to continue for billions of years into the future: I think that all of us participating in this series have deep-time eyes gained by evidence.

The other thing that I think is something that we hold in common is that we all have a global heart and commitment. That is, we all have a commitment not just to our own soul's salvation, not just to our religious group or to our nation, but that we're also all committed to a healthy, vibrant future for the Earth community, or the larger body of life. Whatever else our fascinating differences may be, I think we hold those two things in common. And I want to just check to see if that resonates with you or if you have a different way of saying it.

Ian: Well, I think finding common ground is important. I think with the world in crisis on some kinds of issues, we need to make common cause. If [Harvard evolutionary biologist] [E. O. Wilson](#) wants to talk about endangered species and the threats to the Earth, and our need to take evolution seriously, and our need to take ecological interdependence seriously —that's fine. I do think it makes some difference what interpretative framework one puts it in.

Are they in terms of degree of hope? I don't think you have to be a cynic if you leave God out, and you have to be open to new formulations of what God is like (and all of our models are very inadequate). I do think it makes a difference. And I think probably you're right that the unity needs to be more around these values within any particular system. I don't want to press "process metaphysics," for example, as the solution to everything. There is some reaction against any system these days because reality is too diverse to force into the cubicles of any systematic categories. One has got to be a little bit open to using a diversity of models—pluralistic explanatory schemes—we were mentioning.

But I do think that it does make a difference *how* these values are grounded. There needs to be at least, I would say, some kind of cosmic support for those values. Possibly one can obtain a good bit of this just by looking at the evolutionary picture. But I think, as you say, the interpretive framework is brought *to* one's view of the world as much as it's derived *from* it. It needs to be sensitive to the evidence, I think your "evidence based" [description of what we hold in common] is sound, but it also needs to recognize that interpretative frameworks are important and are not fully determined by the evidence.

I'm a little less optimistic than [Thomas Berry](#) is, or perhaps [than you are](#), that this convergence of different worldviews on the importance of global integration will lead to a positive outcome. But hope is important, and without that hope maybe we won't be motivated to do it. Amazing things can happen when new structures are formed out of a chaotic path. This happens in the physical world and in systems theory, and now on the world scene. I'm all for your project as long as it realizes that we do have some real differences and that we need diverse models. I would say, particularly, that we need both personal and impersonal models of God. Most traditions have those two models. We need to talk about the creative process but in a way that leaves room for some of the more comforting aspect of the past.

Host: I fully agree with that. In fact, in the course of what you were just sharing, I thought of perhaps a third thing that unites us, in terms of the thought leaders that are involved in this conversation—something along the lines of recognizing the legitimacy, and indeed the importance, of interpreting the evidence in an inspiring way.

Ian: Yes.

Host: The last sort of personal question that I want to ask you is, How has an evolutionary understanding of reality—how has a science based understanding of reality—enriched your faith, or helped you live a better life, a more integrous life, a more Christ-centered, Christ-like life (to use traditional language)? How has it bettered you or in some way made a difference in your own faith walk?

Ian: Well, as I look back, I would never have plotted any particular course. But I'm glad that my combination of intellectual curiosity and personal concern has led me into many interesting conversations—including this one.

Host: Yes. Well, thank you Ian Barbour for your great work in the world, for being an inspiration to at least two generations of us that have followed in your footsteps. And thank you for sharing your thoughts with our listeners today on the [leading] edge of faith.

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