

Charles Darwin: Evolution & Wonder

TRANSCRIPT

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KRISTA TIPPETT, HOST: I'm Krista Tippett. Today, "Evolution and Wonder: Understanding Charles Darwin." We'll explore the world in which Darwin formulated his ideas, a world of changing science and society, the era of Jane Austen, as well as Karl Marx. Darwin took religion seriously, but he understood creation as a self-organizing process. He rejected the idea of a God who had fixed every flaw, injustice and catastrophe at the beginning of time.

MR. JAMES MOORE: Darwin's understanding of nature never departed from a theological point of view. Always, I believe, until his dying day, at least half of him believed in God. He said he deserved to be called an agnostic, but he did make the point later in life that "when I wrote *The Origin of Species*, my faith in God was as strong as that of a bishop."

MS. TIPPETT: This is *Speaking of Faith*. Stay with us.

I'm Krista Tippett. This hour, a fresh look at Charles Darwin. From the Scopes trial to school board controversies in our day, Darwin and his theory of evolution are portrayed as a refutation of God. We'll learn about the world in which he formulated his ideas, and we'll hear his own words. Darwin, it turns out, did not argue against God, but against a simple understanding of the world, its beauty, its brutality and its unfolding creation.

From American Public Media, this is *Speaking of Faith*, public radio's conversation about religion, meaning, ethics and ideas. Today, "Evolution and Wonder: Understanding Charles Darwin."

[Announcements]

MS. TIPPETT: Charles Darwin published *The Origin of Species* in 1859. He was the son and grandson of physicians, a gentleman in early-19th-century Britain. He grew up in the world of Jane Austen's novels, a world of manners, politeness, and of a rigid class structure.

This social structure was held to be divinely ordained, like every condition of plant and animal, fixed and static and eternal. The Protestant Reformation of the 16th century had brought biblical certainties to lay people in their own language, and they read the story of creation more literally than the classic theologians had.

Though he was a passionate, amateur naturalist, the young Darwin was headed for a career in the church. But first, at the age of 22, he seized a chance at adventure, a place on the near-five-year scientific journey of *H.M.S. Beagle*. This took Darwin across the globe and to the southernmost tip of South America. There he observed a vast and vigorous spectrum of life that filled him with amazement and with questions.

READER: How have all these exquisite adaptations of one part of the organization to another part, and to the conditions of life, and of one distinct organic being to another being, been perfected? We see these beautiful co-adaptations most plainly in the woodpecker and mistletoe, and only a little less plainly in the humblest parasite which clings to the hairs of a quadruped or feathers of a bird, in the structure of a beetle which dives through the water, in the plumed seed which is wafted by the gentlest breeze. In short, we see beautiful adaptations everywhere.

MS. TIPPETT: Our guide to understanding Darwin this hour is his biographer, James Moore, a Cambridge research scholar who's studied and written about Darwin for three decades. But Moore grew up in a fundamentalist home in Chicago, where he learned to think of Charles Darwin as an enemy of God. Darwin had feared that his ideas would be characterized in this way. After he returned to England from South America, he waited nearly 20 years to publish his theory of *The Origin of Species*. He once wrote to a friend that this felt like confessing a murder. I asked James Moore what Darwin meant by that.

MR. MOORE: We have to look at the mood at that time and in all of the years Darwin was being educated. God was in his heaven, all was right with the world, at least in England, people knew their places. Things were changing, but it was widely believed that both society and the natural world were held stable, fixed, by God's will. And this world was justly and correctly administered by God's agents on Earth, his priests. Species did not change spontaneously and naturally, because nothing in this world happened purely naturally and spontaneously. God was in charge.

When Darwin confessed to murder, he was saying that nature is self-developing. God, according to Darwin, had established laws by which matter moves itself and changes into new forms we call species. Darwin was not denying God's existence. The murder was not the murder of God.

MS. TIPPETT: Now, I think that at that time, in Victorian Britain, the whole field of biology was captive to creationist theology, but I don't think it had always been that way. Is that right? I mean, was that particularly true in that era?

MR. MOORE: We have to use the word "creationist" or "creationism" very carefully. Historically, Christians and Jews and Muslims are all creationists because they believe that God brought the world into existence. A creationist was not a person historically who had any particular views on the origin of biological species, but as one who held certain theological views about the universe and about the soul. The definition of "creationist" became narrowed in the 17th century and in the 18th century. At this time, people were discovering a great deal more about the natural world and were classifying individual species and grouping these species in larger groups and larger groups. And it became a matter of belief during the 17th and 18th century that each of these species, each of these biological species of plants and animals, hundreds — tens of hundreds, thousands of species had been individually created by God in their first pair in the Garden of Eden, and the poetry of John Milton in *Paradise Lost* gave a great deal of color to that.

MS. TIPPETT: Milton's *Paradise Lost* was among the four books Darwin took along on *H.M.S. Beagle*. Here are some verses.

READER: Let us make now Man in our image, Man
In our similitude, and let them rule
Over the fish and fowl of sea and air,
Beast of the field, and over all the Earth,
And every creeping thing that creeps the ground.
This said, he formed thee, Adam, thee, O Man,
Dust of the ground, and in thy nostrils breathed
The breath of life; in his own image he
Created thee, in the image of God
Express; and thou becamest a living soul.

MR. MOORE: There's a literalism in this poetry that Christians took to be part of the explanation of the origin of biological species. So by the time Darwin is born in 1809, it is a common assumption in all churches and by all Christians that the original pair of every species had been brought into existence not so long ago by God. This was a modern belief. It was not a common belief before the 17th century.

MS. TIPPETT: And I think that's really interesting. What you're describing is, as people began to learn, as science kind opened up and people began to learn more about the natural world, there was an attempt to fit that knowledge into the biblical stories, but the result of that was to make those more rigid than, in fact, they were. I mean, I think previously also even theologians read Genesis not as a scientific text — I mean, didn't try to make it a scientific text, read it as a theological text with a theological purpose.

MR. MOORE: Ordinary people read the Bible with their ordinary spectacles on. The people who told them what the Bible says were very, very important. In the Protestant Reformation, those people were not to be the church dictating how you read the Bible, but the individual believer. So the Bible became an open book much more than it had been, when it was translated into the vulgar language, the ordinary language of people. And I believe the Catholic church was right to this extent, that this really did open up a Pandora's box of possibilities because with every person becoming his or her own interpreter, there was scope for really quite extraordinary clashes about what God is telling us through this book.

And as far as the creation story is concerned, of course, we don't know what God has created without looking around us in the world. So with voyages of discovery, with intense national investigations, we began to build up a picture — people began to build up a picture of an extraordinary diversity of life on Earth. And that had to be fitted into the ordinary person's view of the Bible.

MS. TIPPETT: Biographer James Moore. In Darwin's time, literal readings of Genesis were based on an assumption that the Earth was no more than 6,000 years old. Darwin addressed this assumption directly in *The Origin of Species*.

READER: The belief that species were immutable productions was almost unavoidable as long as the history of the world was thought to be of short duration, and now that we have acquired some idea of the lapse of time, we are too apt to assume, without proof, that the geological record is so perfect that it would have afforded us plain evidence of the mutation of species. But the chief cause of our natural unwillingness to admit that one species has given birth to other and distinct species is that we are always slow in admitting any great change of which we do not see the immediate steps. The mind cannot possibly grasp the full meaning of the term of 100 million years. It cannot add up and perceive the full effects of many slight variations accumulated during an almost infinite number of generations.

MS. TIPPETT: I'm Krista Tippett and this is *Speaking of Faith* from American Public Media. Today, "Evolution and Wonder: Understanding Charles Darwin."

In our time, Darwin is widely depicted as a godless naturalist. The publication of his theory of natural selection is imagined as an instantaneous parting of the ways between science and religion. But in reality, the great scientists, who inspired Darwin, Copernicus, Galileo, and Newton, saw the pursuit of science as a divinely ordained gift and responsibility. My guest, Darwin biographer James Moore, has written that *The Origin of Species* was the last great work in the history of science in which theology was an active ingredient.

MS. TIPPETT: This is something that, you know, we have no historical memory of in our present culture, but it's very clear when you start reading this book that there's this painstaking care that he makes with every observation of the natural world. It's almost like he's anticipating the theology that he is challenging or trying to open up, so he's kind of at this moment where you say as the two — as religion and science were joined and then there starts to be a divide. He's right there before that divide actually kind of takes place. I mean, is that right?

MR. MOORE: Darwin's understanding of nature never departed from a theological point of view. Always, I believe, until his dying day, at least half of him believed in God. He said he deserved to be called an agnostic, but he did make the point later in life that "when I wrote *The Origin of Species*, my faith in God was as strong as that of a bishop." So Darwin's many references to creation, there are over 100 references to creation in *The Origin of Species*...

MS. TIPPETT: Yeah, you really — I mean, when you really read the text, you are aware of the struggle. He is wanting to be respectful. He takes very seriously the religious and cultural assumptions that he realizes he's disturbing.

MR. MOORE: This is what I tell my students, if you are a creationist or you're inclined to be sympathetic with what we now today call creationism, read *The Origin of Species*. Darwin wants to convince you in this book that God has established laws of nature on Earth, as in the heavens, and these laws produce the forms of life that we observe. And the principal cause of this, for Darwin, is what he calls natural selection.

MS. TIPPETT: At the beginning of *The Origin of Species*, he has a quote from Francis Bacon, and I want to read it and I'd like for you to explain what this was describing in terms of a way of looking at the world and why Darwin might have put it at the beginning of *The Origin of Species*.

Bacon wrote, "Let no man think or maintain that a man can search too far or be too well studied in the book of God's word or in the book of God's works, but rather let man endeavor an endless progress or proficience in both."

MR. MOORE: This is Francis Bacon, the philosopher, the statesman, writing in the 17th century. The two books for Francis Bacon are the word of God and the works of God, the Bible and the works of God in nature.

MS. TIPPETT: The works of God is everything we see around us, right? The world.

MR. MOORE: The natural world.

MS. TIPPETT: The natural world.

MR. MOORE: And for Bacon, it's important that the works of God teach us how to interpret the word of God. So what we see in nature...

MS. TIPPETT: Rather than the other way around, isn't it, because I think if there is an attempt in our time to look at this, it's the other way around, to interpret...

MR. MOORE: It's reversed.

MS. TIPPETT: ...the works of God through the word of God.

MR. MOORE: There's been a reversal, and people have gone off on some extraordinary tangents in so doing. For example, opposing Newtonian astronomy on the grounds that the book of Genesis rules it out. So right at the front of *The Origin of Species*, Darwin has a quotation, the revered Lord Bacon, to show that the Bible and natural history should be studied together.

MS. TIPPETT: Now, as you say, with Darwin — we associate Darwin's name with the split, but until then, even some of the scientists that we think of as having been opposed to the church, I mean, Newton, Galileo; they also were in that tradition of seeing their work, understanding the world, the created world as they might have described it, as illuminating Christian tenets in the Bible.

MR. MOORE: Absolutely. Absolutely. It's very important to realize that in return for telling us how texts of the Bible should be interpreted, people who investigated nature, call them naturalists, were also expected to supply evidences of God's beneficence, power, and wisdom in the works of nature. So the marvelous way in which a bivalve shell is constructed, or the wonderful joint in your elbow, or the patterns of life, the beauty of butterflies, all of these things can be studied by naturalists and said to be evidence of the Creator's wisdom and beneficence.

MS. TIPPETT: And Darwin really is in that line. I mean even though — that was his inheritance, in a sense.

MR. MOORE: Darwin's starting point were these wonderful, the term was adaptation, the wonderful adaptations of organisms to their environment. Things seem to be made perfectly to live where they are: fish to swim, ducks to paddle, and so forth. These traditionally were evidences of the Creator's wisdom and goodness. Darwin says, "We can explain how nature produced these adaptations to environment. We can explain how the beauty of a butterfly is useful to that butterfly in pursuing its way of life. I can come up with causes for this and it's up to you to believe that God created these things through these causes or not."

Darwin evokes the works of God, the works of natural theology, the greatness of nature, at the beginning of *The Origin of Species*, because he really does believe those works in nature are beautiful and astonishing, and the adaptations of their — he's at one with the spirit of natural theology. Just read his prose in *The Origin of Species*. It exudes wonder of nature, but he can explain how it happened.

MS. TIPPETT: I wonder if you would tell some of the stories that you've told in your writing, just some of the kind of turning points for Darwin, moments during the voyage of the *Beagle*.

MR. MOORE: Darwin sailed on *H.M.S. Beagle* in 1831, a fairly conventional product of Cambridge University. He had been brought up in one corner of one culture in Western Europe. He had never seen a person without clothes on, never seen a woman without clothes on. And suddenly he's thrust into a situation where, immediately on landing in Brazil, he sees slaves being traded. He sees people in chains and in servitude to other people. His whole family hated slavery, but now he confronted it. And it was about this time that he wandered off into the forest for the first time and sat down on a mossy log and made notes in his field notebook, and he actually uses the word from the Bible. He says, "Hosanna." He sees the palms around him, as on Palm Sunday.

READER: In Bahia, Brazil, April 1832. Sublime devotion the prevalent feeling. Started early in the morning. Pleasant tide and much enjoyed the glorious woods. Bamboos 12 inches in circumference. Several sorts of tree ferns. Twiners entwining twiners. Tresses like hair. Beautiful Lepidoptera. Silence. Hosanna.

MR. MOORE: Later he reached the southern tip of South America, Tierra del Fuego, and here he sees what he calls real naked savages for the first time. He sees a full-term pregnant woman, with rain and sleet dripping from her body. He hears what he describes as animal-like sounds coming from these people. He had no concept that any language could be expressed in that way. And, of course, he said, "Where do these people come from? How can he, who sips sherry with the great professors in Cambridge, be the product of the same God in the same world that creates these people, so primitive?" And it planted a thought in his mind that never went away: "How can you account for the diversity of human races?"

And then, you know, finally the other great experience was passing through an earthquake in Chile. He was just sitting on the forest floor one day and the whole earth moved beneath him. And this was not only terrifying, but it made him feel the fragility of human life, that here he was, a young man caught in immensities which he believed to be ruled by God through natural laws. And then he reached Concepción, in Chile, and he saw that the whole cathedral had been leveled. This great house of God had been knocked down by the same forces that elevated the Andes and changed whole geological environments.

At the end of his life, he was asked what stuck in his mind about his experiences in South America and on the *Beagle*. And he remembered climbing to the peak of the Andes in Peru or Chile — I can't remember — and then turning as he reached the peak and looking behind him, and he said, it was like the Hallelujah Chorus in the Messiah, playing with full orchestra, blaring in his head, because he was on top of the world. He was looking down almost like God upon this creation, which he had begun to sort out in his own mind as he'd been climbing, as it were. But at the end of his life he was asked, "What's the most extraordinary experience you had?" And he remembered climbing to the peak of the Andes. And then he slept on it, and the next day he came back to the person he'd said that to, and he said, "No, it was the rain forest. It was sitting there and feeling that there must be more to man than the breath in his body."

READER: Among the scenes, which are deeply impressed on my mind, none exceed in sublimity the primeval forests undefaced by the hand of man. Whether those of Brazil, where the powers of life are predominant, or those of Tierra del Fuego, where death and decay prevail, both are temples filled with the very productions of the God of nature. No one can stand in these solitudes unmoved and not feel that there is more in man than the mere breath of his body.

MS. TIPPETT: From Charles Darwin's *The Voyage of the Beagle*. This is *Speaking of Faith*. After a short break, we'll explore how Darwin's science liberated humanity from belief in a God implicated in every injustice and every catastrophe.

At speakingoffaith.org, take a narrative tour through [Darwin's private notebooks](#). These early writings shed light on his thinking before he published his major works on evolution and the ancestry of man. Listen to this program again, download an MP3 to your desktop, or [subscribe to our free weekly podcast](#). Listen when you want, wherever you want. All this and more at speakingoffaith.org. I'm Krista Tippett. Stay with us. *Speaking of Faith* comes to you from American Public Media.

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[Announcements]

MS. TIPPETT: Welcome back to *Speaking of Faith*, public radio's conversation about religion, meaning, ethics and ideas. I'm Krista Tippett. Today, "Evolution and Wonder." We're seeking to understand the world that formed Charles Darwin, and what his observations about the natural world really said about God. My guest is Cambridge research scholar and Darwin biographer James Moore.

Moore was raised in an American Midwestern culture imprinted by the Scopes trial of 1925. That trial arose over a law in Tennessee which forbade the teaching of "any theory that denies the story of the divine creation of man as taught in the Bible and to teach instead that man has descended from a lower order of animals." The theory in question came from Charles Darwin's *The Descent of Man*. This was Darwin's sequel to *The Origin of Species*. It completed his description of creation as a self-organizing progression into every plant and animal and, finally, humanity.

James Moore has written that Darwin's idea of creation by evolution was a belief born of theological humility. Darwin sensed nothing natural and benevolent in the Victorian idea of a Creator God who had fixed every condition of life once and for all at the beginning of time. And Darwin returned from the voyage of the *Beagle* to an English society, which was erecting debtors' prisons and workhouses to ward off human chaos.

MR. MOORE: London was in turmoil when Darwin reached metropolis.

MS. TIPPETT: What year are we talking here?

MR. MOORE: Darwin finally arrives in London in March 1837. George IV is soon to die. Queen Victoria is soon to accede to the throne. There have been crop failures. People have been flocking to the cities, trying to scrounge a living. There's terrible overcrowding. You can see this on every street corner.

Darwin's friends paid taxes to support the poor, welfare. And welfare handouts were growing year by year, as more and more people fell on hard times and flocked to the cities. What to do with the excess number of people? If you gave them food, so the theory went at that time — this was very middle-class theory, they would simply produce more babies. Pauper boys and girls could eat well enough to reproduce, and the burden on middle-class taxpayers becomes greater and greater as the years go by. The answer being given at this time was that life should be made so difficult for the recipients of welfare handouts that they don't reproduce. In other words, they go into places called workhouses. There were workhouses in the United States, most countries. These were places where the sexes are kept separate, and any sustenance they get, they have to work for. So workhouses were being built all over the country and poor people were opposing them.

There were riots in 1839. The troops were sent in later on. In 1842, Britain came closer to revolution than any other year of the 19th century. And the years from 1837 to 1842 were the years of Darwin's most radical thinking about humanity's place in nature. These were the years in which he kept clandestine notebooks speculating how all of the phenomena he saw around him, in society as well as in natural history, could be explained by God's laws. And the central law is the law of the struggle for existence, and Darwin gets this out of Whig Poor Law ideology, and Reverend Thomas Malthus in particular, an Anglican clergyman.

MS. TIPPETT: I'd forgotten that he was an Anglican clergyman.

MR. MOORE: Yes.

MS. TIPPETT: So Malthus described how population growth would always be too much and it would be checked by famine and war, but he was also saying that these things were a manifestation of God's wrath.

MR. MOORE: For Malthus, the gap between population growth and increase of food supply is God-ordained. God has ordained this tremendous fecundity amongst human beings in order to get us to till the land, to give us the incentive to feed ourselves. We're always going to have to struggle to do that. And also the incentive to restrain ourselves sexually. This is a law of nature and it's for our own good. Lots of Christians believe that. Malthus believed that. And even people who weren't particularly Christian, freethinking, radical intellectuals, Darwin's friends in London, believed that too.

Darwin seizes on this and thinks to himself, "My Lord, if it's bad for people, think how bad it is for animals and plants because they cannot exercise moral restraint, they just constantly reproduce." And so he says it's a much, much worse struggle out there for everything else in the world, and what good can come of that for them? What good can come for them is progress. The struggle produces

adaptations to environments. All the things that Christian preachers had talked about as glorifying God's wisdom and beneficence, Darwin said these things are produced by a bloody, agonized, protracted struggle out there. And in the end, of course, you get adaptation to environment, things swim and fly and support themselves, but scratch the surface and it's a bloody warfare.

MS. TIPPETT: See, what's intriguing to me here is that — this religious idea that Darwin toppled, that everything that was had been ordained by God, fixed, that not only that there were all the forms in nature, but I think the social order of society, including, as somebody like Malthus would come in, even the social order which was destructive, in which people died. So the religious talk about Darwin's legacy as of how he challenged perhaps the sovereignty of God or an idea of the sovereignty of God, but he also liberated God from being responsible for iniquity and suffering, in a sense. Do you know what I'm saying?

MR. MOORE: Darwin didn't believe that God was Himself directly responsible for each slug and snail, each catastrophe, each premature death, each — as Darwin once said, "each gnat snapped up by each swallow." God didn't ordain these things. These things were the consequences of patterns, laws, ways of going about existence, that God had established at the outset of creation, about which Darwin didn't have anything to say, really.

And in a way, you could say he gets God off the hook because, on the one hand, you can admire all the tremendous adaptations and the progress in the natural world and ascribe this to laws proscribed by God. On the other hand, you can say that you have to balance out that good with the pain that we experience. Darwin doesn't offer any form of compensation. He doesn't say there's going to be a heaven for dogs or for horses or for people. He does suggest that in future our descendants will look back upon us in the way that we look back upon the apes. They will be that much more advanced than the rest of us. And that was just a piece of Victorian optimism, you know, it was...

MS. TIPPETT: I wish I could say that I felt that were being proved in our time, but...

MR. MOORE: There was a moment, a very poignant moment in the 1860s, when a friend of his lost a relative and wrote to him, rather distraught about the meaning of human existence and the meaning of death in this universe and how awful it is to lose a relative. And Darwin wrote back and he said, "Hey, that's nothing compared to the death of millions of species throughout recorded history in the collapse of the solar system." And then he inserts in the letter little words, *sic transit gloria mundi* with a vengeance — and so passes the world with a vengeance. There was something deep inside Darwin that I think he wanted to bring people face to face with the appalling depths of nature, that it produces morality, nature, but it's not a moral place. There's no comfort in nature. He grits his teeth and he makes us look at it in *The Origin of Species*. For all the God and the glorification of God's creation you find in *The Origin*, there is also this bloody-minded insistence that there are no simple solutions.

READER: A letter from Charles Darwin to botanist, Asa Gray, at Harvard, July 3rd, 1860, "I see a bird, which I want for food, take my gun and kill it. I do this designedly. An innocent and good man stands under a tree and is killed by a flash of lightning. Do you believe that God designedly killed this man? Many or most persons do believe this. I can't and don't. If you believe so, do you believe that when a swallow snaps up a gnat that God designed, that that particular swallow should snap up that particular gnat at that particular instant? I believe that the man and the gnat are in the same predicament. Yet I cannot persuade myself that electricity acts, that the tree grows, that the man aspires to loftiest conceptions, all from blind, brute force."

MS. TIPPETT: See the [actual letters of Charles Darwin](#) on our Web site at [speakingoffaith.org](#). I'm Krista Tippett, and this is *Speaking of Faith* from American Public Media. Today, "Evolution and Wonder: Understanding Charles Darwin." I'm speaking with Darwin biographer James Moore.

MS. TIPPETT: There's something that jumps out at me, and I don't see any commentary on it in anything I've read, but the analogy he makes, the words he uses, he drew pictures as he formulated his idea of natural selection and it was of a tree. You know, here's a passage from *Natural Selection*: "As buds give rise by growth to fresh buds, and these, if vigorous, branch out and overtop on all sides many a feebler branch, so by generation I believe it has been with the great tree of life, which fills with its dead and broken branches the crust of the earth, and covers the surface with its everbranching and beautiful ramifications." Now, what intrigues me in there is that he uses that phrase, "the tree of life," which harkens back to Genesis for me, the tree in the center of the Garden. I mean was that...

MR. MOORE: Absolutely.

MS. TIPPETT: ...was that in his mind, in his imagination?

MR. MOORE: I have little doubt that it was in his mind.

MS. TIPPETT: That's fascinating.

MR. MOORE: He was not devoted to the scriptures, but he lived in a culture that was saturated with the phrases of the King James, the 1611 version of the Bible. And this tree, for Darwin, is a genealogical tree. It is the common ancestry of us all. At one point he says in his notes, "We are all netted together, that it's more humble and I believe true," he says in another note when he's a young man, "to see us

as created from animals. And that tree is the tree of how we relate to everything else that is alive." And for Darwin, that isn't to reduce human beings, but it's to raise everything that grew on that tree, even the branches that fall off, the twigs that are lost. These are the things that go extinct.

MS. TIPPETT: That wither because they go extinct, yes.

MR. MOORE: They fall into the earth and they form the soil in which others grow. It's a wonderful vision of the richness of organic nature and the unity of life.

MS. TIPPETT: And of human participation and belonging to that larger picture.

MR. MOORE: Darwin has a vision of nature and it takes quite a while studying Darwin from when he was in his twenties really until, at the end of his life, he's working on earthworms, of all things. I do have the most profound respect for the way he doggedly pursued his vision of the history of life on Earth and how great things are caused by little things. Mountains move up by small increments, the soil of the Earth is recycled through earthworms, coral reefs grow by tiny increments over tens of thousands of years. No one can see these things happening. One has to be able to imagine them happening. And Darwin had that wonderful imagination. He had the capacity to sit still or stand still in a field or in a wood, for an hour at a time, and just watch and listen. There are few of us who have that today, and we're the worse for it.

MS. TIPPETT: Right. You're giving me a different way to think about one of the reactions that people have in this country, that has been publicized as these things have been publicized with some recent, you know, court cases in the last year, evolution, intelligent design. There are some people — and maybe this was a reaction people had in Darwin's time, too — who really take offense at the idea that we human beings came from monkeys, that that idea would diminish what it means to be human. The way you're describing Darwin's approach is, in fact, exactly the opposite.

MR. MOORE: Darwin's approach is very much in harmony with people who are against speciesism as it's called today, those who would give rights to animals. Darwin abhorred cruelty to animals. He remonstrated with people who he saw abusing animals. He would take them up on it on the spot. He was a JP., a justice of the peace, a magistrate for his county, and there are cases of him sentencing people to punishment because of the way they treated their pigs or their horses. Darwin even respected plants, and there are descriptions of him going into his greenhouse and talking to them and stroking their leaves as if they were alive. Darwin wasn't a tree-hugger, I don't mean that at all. He respected life. He wasn't averse to killing animals and dissecting them, he wasn't a vegetarian, but his vision of us all being netted together — the human races as one family and all of life as part of the great tree of life whose creator, through the laws of nature, is God — is Darwin's way of looking at the world.

MS. TIPPETT: I wonder if you could talk about the religious reaction to and debate about Darwin's ideas in his time, and how that is similar to or different from the debate that flares up again and again in ours. Did it have the same dynamics? Did it have the same theological positions?

MR. MOORE: No. No, it's not the same. History hasn't been repeating itself. Darwin's colleague Alfred Wallace, who is believed to have come up with the same theory of natural selection 20 years after Darwin did — in fact, it was Wallace's work that got Darwin to publish *The Origin of Species* quickly to establish his priority. This man Wallace, who was considerably younger, went to the United States for a lecture tour in 1886, and he started off in New York and he went to Boston and Washington. Then he made his way across by train through Kansas and Iowa and Nebraska, and he got to California. And during his trip, he lectured on Darwinism, but there was no problem. He was welcomed, and he got his lantern and slides out and explained Darwinism. That's what he called it, Darwinism. It shows that between 1886-87, when Wallace was trumpeting Darwin's cause in America, and 1926-27, 40 years later, a remarkable change took place in the way that ordinary Americans were prepared to look at evolution.

MS. TIPPETT: Was that the year of the Scopes trial, '26?

MR. MOORE: Scopes trial was 1925, but there was continued agitation even for a while after William Jennings Bryan's death.

MS. TIPPETT: Now, how do you explain that? What changed?

MR. MOORE: Firstly, a lot of people got educated, and not just about evolution. Most people didn't go to university. A lot of people got educated by their ministers, who themselves had had higher education and had come to believe that evangelical civilization was slipping away from the churches. This has to do with mass immigration from Europe, particularly the darker-skinned in Catholic parts of Europe in the 1880s and 1890s. It has something to do with the growth of cities, labor unrest. Most important, I think the change from the 1880s to the 1920s hinges on the First World War. And it was William Jennings Bryan, the great populist politician fundamentalist who went to Dayton, Tennessee, who brought to the attention in the manner of a political crusade of Americans generally that German generals had

quoted Darwin and Nietzsche to justify the savage campaigns of that war and the mass death.

MS. TIPPETT: It's interesting, what I also hear when you describe that time, early 20th century, is not — the details are different, but we also live in a time of tremendous change. You know, immigration is an issue for us. But it's not immigration anymore, it's globalization, it's transnationalism, it's a world that is changing. It's easy to be fearful and, I think, to kind of batten down the hatches.

If we can — if it is possible and I think it is. I think you and I have traced that a bit — to make a correlation between, you know, fear of Darwin and a world that is changing and fear of that change and things we don't understand and can't control. I mean, I think human fear is understandable in these circumstances, and predictable. Out of everything you know about Darwin and what you've learned and even, you know, the evolution, if you will, of, you know, where you came from, your kind of more anti-Darwin religious upbringing and where you are now, many years later in Cambridge, you know, how would you speak to that fear?

MR. MOORE: There's a historical philosophy underlying this form of fearful fundamentalism, which suggests a kind of conspiracy, and it's linked with Darwin and Marx and Sigmund Freud. It's linked now — probably to Islamic fundamentalism, that we are fighting a malignant, invisible world. And malignant, invisible worlds are really in fashion at the moment and you think about, you know, *The Da Vinci Code*. Intelligent design, it seems to me, is the scientific equivalent of *The Da Vinci Code* because there's a mysterious intelligence behind what appears in nature, and it's very plausible that there is some evil design in this intelligence, and people believe it.

MS. TIPPETT: And that that's been covered up also.

MR. MOORE: And it's been covered up, that's right. So, you know, I was brought up partly — some of the intellectual influences in my life were of that conspiratorial nature, that really the Earth is a sinking ship, there's nothing much we can do about it except to get people into the lifeboats. I don't think that's the dominant impulse today in Western fundamental or evangelical Christendom. It's much more of a conquering and triumphal spirit, but also one which must struggle with God's enemies.

MS. TIPPETT: Yeah. But I mean, I also think you do not conclude, and we spoke about this very much more at the beginning, that Darwin was an enemy of God. That's not a place you've come out.

MR. MOORE: Absolutely not. I didn't know for sure whether Darwin was an enemy of God when I started out. I was given to believe that he was, at best, a well-meaning man, at worst, a sort of demonic figure. It became clear to me that he was not a professional theologian or a philosopher, for sure. But he was a very shrewd guy, and he'd stared more deeply into the abyss, which is his view of nature at war, than perhaps any person of his day. And he brings you up short, bang against the world as it really is in his vision, not the world that we would like it to be, as if there hadn't been a fall into sin in the Garden of Eden.

MS. TIPPETT: Biographer James Moore. Here, in closing, are the final words of Charles Darwin's *The Origin of Species*:

READER: ...from the war of nature, from famine and death, the most exalted object which we are capable of conceiving, namely, the production of the higher animals directly follows. There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.

MS. TIPPETT: From Charles Darwin's *The Origin of Species*. His biographer, James Moore's books include *Darwin: The Life of a Tormented Evolutionist* and *The Post-Darwinian Controversies*.

At speakingoffaith.org, view Charles Darwin's [tree of life](#), an interactive world of his watercolor sketches and private notebooks with fuller explanations by David Kohn, an eminent scholar of Darwin's writings. Listen to this program again and hear others in our archives. Download an MP3 to your desktop, [subscribe to our podcast](#), and [sign up for our e-mail newsletter](#), which brings my journal on each topic straight to your desktop. That's speakingoffaith.org.

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