

Dr. Jim Spiegel, Philosophy of Religion, Session 14, Theism and Science

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This is Dr. James Spiegel in his teaching on the Philosophy of Religion. This is session 14, Theism and Science.

One of the controversial questions of our time has to do with the relationship between science and religion.

Is science a threat to religion? Can religious beliefs be reconciled with scientific knowledge? As we noted with the New Atheists, this is one of their main arguments: that somehow theistic belief or any kind of religious orientation is in conflict with science and that a person who is truly rational, a rigorous thinker, will eschew religious belief, any kind of faith commitment regarding the spiritual realm, and believe just in a material universe and just in the deliverances of science to get us whatever knowledge that we have. So, let's look at this question. Is science a threat to religion, specifically theism? Can religious beliefs be reconciled with scientific knowledge? Now, there are a couple of problematic perspectives we can note from the outset.

We've already talked about scientism or positivism, the view that all knowledge must come through science or that all knowledge, if it is knowledge, must be at least confirmable or verifiable scientifically. If a claim cannot be proven scientifically, that is, through empirical testing, then it can't be proven at all. That's scientism or positivism.

We've already noted that this view itself is problematic because it doesn't satisfy its own demands. It's self-refuting. You cannot prove the thesis of scientism scientifically.

It's not something that can be confirmed empirically, so it fails its own requirement. A second problematic perspective is the God of the Gaps mentality, the view that religion aims to explain what science cannot explain. Theology fills the gaps that remain after scientific explanation.

A major problem with this approach is that it assumes that something cannot have both a scientific and a theological explanation. So, let's look at some models of science and theology. How should we conceive of the relationship between science and theology? Here are three models that one finds in the context of this discussion.

One is the conflict thesis, which says that science and religion are inherently opposed to one another and that one must choose to either be scientific or religious. You can't be both. There's a kind of inherent conflict there.

In defense of this idea, people often appeal to certain events in the history of science where there was a conflict between religion and science or the church and science, like in the Galileo controversy. The dispute in the early modern period over whether the Earth actually moved and revolved around the sun as opposed to the sun and the other planets revolving around the Earth. The geocentrists versus the heliocentrists and those in the church on the side of religion favored the geocentric view.

Meanwhile, the Copernican idea defended by Galileo was the view that challenged the geocentric view, and science won. Galileo and the heliocentrists proved to be right, and that just shows that we can't trust the church or theology in these matters. Or in the case of Darwinism and the emergence of evolutionary theory in the 19th century, that's often cited as well as an important historical lesson that there is a basic conflict here.

Not only there's conflict, but at least for those on the religious skeptical side, you should always go with science whenever there is such a conflict. Then there are those also who are people of faith who would affirm this conflict thesis but say we should always go with religion or theology over and against science. But is there an inherent conflict in the question, and where is the conflict to the extent that theology and science do sometimes conflict?

Just because scientific theories sometimes conflict with theological commitments, it doesn't follow from that that the truth of the world contradicts biblical truth. In both cases, we're trying to interpret a data set, and we devise theories of all kinds, sometimes scientific, sometimes theological. And if our theories come into conflict at times, it doesn't necessarily imply there's a conflict between the world, the way the world is, and what the scriptures are actually teaching.

We'll talk more about that in a minute. Another model for viewing the relationship between science and theology is what might be called the independence thesis, which says that science and theology pertain to two separate realms. Science investigates the natural order, and theology is concerned with the supernatural, the spiritual realm, and the moral realm so they can never come into conflict.

Stephen Jay Gould, a long-time paleontologist at Harvard, proposed a version of this, the idea of a non-overlapping magisteria, that science has its concerns and religion and theology have other concerns and so they can't really ever conflict. The problem, though, is that there are some issues that both science and theology investigate, and we can see this clearly enough in scripture. The Bible speaks to certain issues

regarding cosmic origins, human nature, the origin of species, and the idea of a worldwide cataclysmic flood.

There are all sorts of events in history that the scriptures refer to and describe that are properly subject to some scientific inquiry. So, there's some overlap there, so Gould's idea of non-overlapping magisteria doesn't account for this. The third model, which I would endorse and that I think most Christian philosophers of science would endorse, is an interactive model, which says that science and theology are interactive approaches to the same reality.

Occasionally, they do make competing claims, in which case, what do we do? Well, we need to look more closely at the theories that are involved on either side and see where one might correct the other. So, here's how I would represent this idea of an interactive approach to science and theology. At the level of conflict, at the level of theory, there is some conflict.

A scientific theory is a kind of interpretation of some dimension of the physical world, whether we're talking about biology, chemistry, or physics. And theology interprets and tries to systematize scripture. In both cases, you have more abstract, general claims made to try to organize and order the data.

But this, again, is all at the theoretical level. When we're talking about the actual facts or truths of the physical world and the facts or truths of the Bible, the idea here is that there is no real conflict. Again, conflict emerges at the level of theory when we're trying to interpret the facts or the truths or the data of scripture on the one hand and the physical world on the other.

So that raises the question, how do we know which theoretical interpretation should correct the other in the case of a particular conflict? If my scientific theory and my theology are at odds, there's some sort of conflict: should the theology correct the science, or the science correct the theology? Well, there we have to go on a case-by-case basis, consider all the facts that we know or seem to know, and be circumspect about the theoretical inferences that we're making in each case. And be open to correction on either side. Maybe there is something problematic with my theology that scientific inquiry is exposing.

Or maybe it's the other way around. There's something problematic with my scientific theory that my theology is exposing. So, the point is that either one could correct the other.

And that is what makes it interactive. It's a recognition that science and theology do sometimes deal with the same issues. They're bringing different methodological approaches to the same issues and being willing to have one correct the other.

Or perhaps point us in a completely new direction to devise a completely different theological paradigm or scientific paradigm. Speaking of paradigms, let's consider some lessons from Thomas Kuhn, who was a very influential philosopher of science towards the end of the 20th century. In the early 60s, he published his landmark book, *The Structure of Scientific Revolutions*, where Kuhn critiques popular assumptions about the nature of science.

And some of these are pertinent to the question regarding the relationship between science and religion. So here are two important lessons from Kuhn, which were highly controversial at the time. One is that scientific inquiry is not neutral.

That all observation is, as he puts it, theory-laden. Our perceptions of the world are colored by our theories about the world. The world that we see or the phenomena that we observe in the world, be it biological or chemistry-related or physics-related or anything else, the world that we see is always interpreted by a paradigm.

A paradigm is simply a kind of theoretical model that is developed in a particular field. So, consider the Ptolemaic as opposed to the Copernican theories about the nature of the Earth: the geocentric and the heliocentric views.

Is the Earth at the center of the universe, or is the Earth one of many planets revolving around the sun? When a geocentrist walks out and looks at the sun and goes across the sky, they seem to see direct evidence for their view. They see the world in terms of their geocentric paradigm. Whereas when a heliocentric or heliocentrist observes the same phenomena, they say, well, we are indirectly seeing the Earth rotating on its axis.

This is why it appears that the sun is revolving around the Earth. So, they're looking at the same data, or they're having a similar experience, but they're seeing the phenomena, they're experiencing the phenomena through their own interpretive framework or paradigm. Another example or illustration is that you have, say, a creationist and a macro-evolutionist go to the same zoo, and the creationist says, wow, look at all of the different animals that God made.

That's amazing. And then, say, the Darwinist goes to the same zoo and sees all the same animals and concludes from that, wow, isn't it amazing? What can natural selection over eons of time with all sorts of random mutations produce?

So, the creationist and the Darwinist are looking at the same animals, but they're, in a sense, seeing things differently because they're looking through different theoretical frameworks or paradigms. Kuhn uses the illustration of the duck-rabbit, which is an image that can be seen as a duck or as a rabbit, but not both at the same time. You can toggle between them.

And if you were to tell someone, hey, I'm going to show you an image of a rabbit, before you put this on a screen, they would be much more likely to see it as a rabbit than as a duck. If you told them ahead of time, I'm going to show you a duck, then they'd more likely see it as a duck than as a rabbit. So, the preconceptions that we bring to the duck-rabbit image are a good analogy to what Kuhn is talking about here.

We always experience the world through certain theoretical lenses. And this is true for the scientists, maybe even more so than for others. It's just human nature to interpret through theoretical grids.

Another point or lesson from Kuhn is that scientific theories are underdetermined by the data. Many different theories can consistently explain the same phenomena. Theories are chosen because of their explanatory power, things like their general fit, elegance, beauty, and so on.

But they are not strictly deduced. Scientific theories are not simply deduced from the data. There's always a kind of, in fact, an imaginative leap that, in the history of science, sometimes takes some very humorous and dramatic forms.

The guy who came up with the chemical configuration, the three-dimensional orientation for the chemical benzene, a guy named Kekulé, was trying to figure out how this could work. He was doing all sorts of diagrams to try to figure out how it was that you could have this chemical benzene with a particular number of carbon and hydrogen molecules. How does this work out? I think it's C_6H_6 is its chemical formula.

But it wasn't working out. It's just a straight chain. Then, he was dozing off in front of a fire one day.

You get into a kind of dream state when you drift off even before you're fully unconscious. He imagined or dreamed of a snake in the fire that bit its own tail, creating a ring. He had benzene on his mind and said, maybe that's it.

He sat down and sketched it out. Sure enough, that's the explanation. It's like a benzene is a ring with alternating double bonds.

That was the solution to his problem, which happened in a very random, haphazard way. Radiology was born in a similarly serendipitous, random way. All sorts of scientific discoveries have been achieved in less than rational ways.

That's going to an extreme, I suppose. In most cases, those are kind of unusually random. But even in the case where a scientist rationally proceeds, more

systematically proceeds in developing a theory, it isn't just a straight deduction from the data.

There's always an imaginative step there. When theories are developed, they're always competing theories that also explain the same data. But the question is, which one explains the data best? You have these, in fact, aesthetic qualities that are taken into account, like elegance.

Which theory explains the data in the most simple way? Some theories are, you might say, more beautiful than others. Einstein emphasized that often. If there is a grand, unified theory that unites all of the empirical sciences in a very efficient, elegant way, it will be known for its beauty.

It will have a kind of aesthetic excellence. There's also that dimension to scientific theorizing. What about the assumptions that we make when doing science? This needs to be taken into consideration as well.

The presuppositions of science. One of the assumptions that scientists make, because everybody makes, is what's called the general reliability of sense perception. You cannot prove scientifically that your senses are all reliable without assuming at the outset a certain reliability of your senses.

You can go to an optometrist or an ear, nose, or throat doctor. You can have your ears checked out and your hearing tested. But even when going to such a specialist to have your senses evaluated, you're already assuming the general reliability of your senses.

So that's a fundamental assumption that we must make. It's a kind of philosophical article of faith that even the most rigorous scientist needs to assume that the senses are reliable. It's a kind of faith commitment.

The law of causality states that every effect must have a cause. Again, a faith commitment. We begin with the assumption that effects have causes.

That nature is uniform and that the laws of nature will remain constant. That the future will resemble the past.

The laws of logic are reliable and trustworthy; these are all assumptions that we must make when doing science and everything else. So this is one more reason why science can't prove everything.

Why scientism must be false. Because there are certain assumptions that have to be made even to start doing science that precede the doing of science. So, all of this should be humbling in terms of our view of science.

This is not to undermine the authority, power, or significance of science, which has extraordinary achievements, particularly in terms of medicine, transportation, and communications. It's an amazing thing that you can get on a commercial plane and fly from New York to California in just a few hours. That we can do surgery as efficiently as we can, even brain surgery, and cure all sorts of diseases.

But for all of that, science has its limits. And it is a method, as powerful and effective as it is, that also depends upon certain faith commitments, like these presuppositions of science, even if they're philosophical articles of faith rather than theological beliefs.

Let's turn now to some issues related to scientific methodology. In doing scientific research, may we take theological considerations into account? Is that appropriate? And how a person answers this question will determine their perspective on a number of issues, including the origins debate. So, there are two kinds of naturalism that we should distinguish here.

One is called metaphysical naturalism, which is a view that only the physical world exists. That there are no supernatural beings, no God, no angels, no immaterial human souls. Another kind of naturalism is just methodological.

Methodological naturalism is the view that scientific accounts of the world must refer entirely to natural phenomena without any reference to supernatural agents. There are a number of contemporary methodological naturalists who are robust in their faith and their theistic or even Christian commitment but emphasize a kind of methodological naturalism in this way that we should limit our explanations of events in the physical world to the realm of material causes.

And that appealing to supernatural agents to explain events like speciation or human consciousness is giving up; it's surrendering the scientific commitment to appeal to a human soul or to appeal to a special divine creation. So that's the approach of the methodological naturalist. It's easy to confuse these two forms of naturalism.

Many methodological naturalists are accused of being closet or inadvertent metaphysical naturalists. But again, someone could be a devout Christian and still be a methodological naturalist believing in God, angels, and human souls and still insisting that all of our scientific inquiry should be guided by this principle. So methodological naturalism does not imply metaphysical naturalism.

So again, a Christian or any other theist can coherently affirm methodological naturalism. But is methodological naturalism the best view for the Christian or other theist to take? Here are arguments for methodological naturalism. One appeals to the nature of science.

It says that the point of science is to explain natural phenomena in terms of other natural phenomena. So, appealing to supernatural entities is cheating. I had a conversation with a former student who went on to do his PhD in philosophy of science at a major research university.

And he's a strong methodological naturalist. So, we were talking about this. As he was explaining his perspective to me, he said, I look at it like this: that the person who appeals to supernatural causes to explain, say, speciation or even human consciousness is like a person who is playing football and runs out of bounds, say at the 15-yard line, and then down by the water coolers and his teammates are on the sideline and then back in bounds at the other end of the field.

The 10-yard line goes into the end zone and says, I scored. It's cheating. You're going out of bounds.

The nature of science is such that we should always be looking for natural causes, not supernatural causes of events. My response to him when he gave me that analogy was that, isn't that begging the question? He's calling it cheating, but who says? By whose authority can we be confident that it's never okay to infer the occurrence of some sort of supernatural intervention, some sort of supernatural cause? Who says it's unscientific to conclude that human consciousness is explained by a spirit or a soul that human beings have? And he couldn't really give me a good answer to that question beyond saying, well, this is how science is done these days, at least predominantly. However, in the modern, definitely in the early modern period, it was not seen that way.

The fathers of modern science were almost all of them theistic, many of them Christians, and they saw this kind of integration of their theology with the science they were doing as perfectly natural and appropriate. So maybe it's the predominant approach now, certainly in the scientific guild in Western civilization, this very strong presumption in favor of methodological naturalism. But just because that's where we are in the history of science now, does it follow from that that that's absolutely normative for doing science? Another argument for methodological naturalism appeals to the concept of functional integrity.

Howard Van Til and others have appealed to this concept by saying that God made the physical world self-sufficient and able to operate on its own via what we call laws of nature. So, we don't need to appeal to any supernatural agents to explain any phenomena that we encounter. A couple of points about this: this appeals to functional integrity.

It is a bit ironic that in order to justify this methodological naturalist approach, Van Til and others depend explicitly on certain theological considerations. It also

misunderstands the laws of nature as if the laws of nature were entities that could really explain anything. Laws of nature are descriptions of routine or regular phenomena, which in turn need their own explanation.

Why is there an inverse square law? Why is it that there are strong and weak nuclear forces? Why is it that there are these laws of thermodynamics? That needs an explanation. So, the laws of nature don't provide any causal explanation. They need themselves to be explained.

So those are some arguments for methodological naturalism and some problems with each. An alternative to methodological naturalism is something called theistic science. And that's an alternative approach advocated by the likes of Alvin Plantinga and others who are involved in the intelligent design movement.

Theistic science takes into account theological considerations when doing science. And it's okay on this view to do scientific research in light of anything else that one knows, including theological truths. I think it's worth noting that other disciplines are open to input from science and other disciplines.

That's a reasonable thing. In the academy, we prize and appreciate interdisciplinary approaches. Why should science be an exception to this? As a philosopher, I want to get input from history and science, the social sciences, literary criticism, and so on.

Historians want to get input from science, philosophy, and so on. Theologians want to get input from all of these other fields. Why shouldn't scientists be open to input from all these other fields, including theology? Intelligent design theory, again, would be an example of theistic science.

Intelligent design theory works with issues both in inanimate nature, talking about fine-tuning of the cosmos, as well as the animate realm and biological systems. On this view, evidence of design may properly lead us to infer a supernatural cause, whether we're talking, again, about the origin of species or human consciousness or the origin of the universe. In the context of biology and living systems, there's this concept of irreducible complexity that has been a subject of much controversy but that intelligent design theorist will often point to as evidence of supernatural causation or explanation.

For a structure or function that is such that there are no simpler precursor systems that could have given rise to it. You have, in the biological realm, these irreducible complex circles of needing, for example, DNA to produce messenger RNA, which is necessary for the production of DNA. How did this extremely complex cycle or circle of biological function get going in the first place? That's irreducible complexity.

To conclude, I want to say a few things about Alvin Plantinga's thoughts on science and religion. His tremendous book from about 10 years ago called *Where the Conflict Really Lies*. This might be the best book I've ever read on the subject of science and religion.

His thesis in this book is that there is a superficial conflict, but deep concord between science and theistic religion, but superficial concord and deep conflict between science and naturalism. So, what is the source of conflict between science and naturalism? Usually, we associate the two. We think that, well, if someone's a rigorous scientist, because of that, they might be tempted to naturalism because those two things tend to go well together.

Plantinga argues that, no, in fact, there's a deep conflict there. They don't go well together. For one thing, this would probably be his major argument: naturalism has difficulty accounting for this basic assumption of science that our cognitive faculties are reliable for inquiry, that thought reflects reality, and that our cognitive faculties tend to produce more true beliefs than false beliefs.

In fact, they are kind of geared in that way. They're aimed at the production of true beliefs. It's an assumption that we all make, not just scientists.

But Plantinga has noted that this is problematic for the naturalist because if you're a naturalist, you have to be a Darwinist. It's the only game in town that explains all of the different properties and characteristics of all living organisms, including human beings. So, if my cognitive faculties and everything else about me are the product of natural selection, supervening over random mutations over eons of time, then even though that's produced a kind of adaptability in my species to the environment, it's very practically beneficial for me to have the cognitive faculties I have.

It does not guarantee that my cognition is aimed at truth. Where in this whole Darwinist story can you get any kind of confidence that our cognitive faculties are geared towards, aimed at the production of true beliefs? The most you get out of it is that our cognition is effective for survival. However, there are a lot of false beliefs that could have great survival value.

One example is, suppose I develop, for whatever reason, this false belief that if I don't pay off my mortgage on my house by the time I'm 50 years old, I'm going to be captured and thrown into prison. That's a ludicrous belief. But suppose I form that belief when I'm, say, in my late 30s.

I guarantee you that by the time I'm 50, I will have paid off my house. I will no longer have mortgage debt. That will benefit me.

That would benefit anyone. A false belief can have a lot of survival value. It can be very adaptive.

We can think of all sorts of other examples. Just because I have these cognitive abilities that are very beneficial from a practical standpoint doesn't imply that they're aimed at truth. But this is a very important assumption for science that our beliefs that our cognitive faculties tend to produce are aimed at the production of true beliefs.

Theism can account for this. Naturalism doesn't give us this kind of assurance, but theism does because a theist believes that God designed human beings in his own image, in fact, and that God would be interested in giving us cognitive faculties that are truth-acquiring, that are aimed at the production of true beliefs.

So that would be a major source of concord between science and theism, that this belief that, or the fact that theistic religion accounts for our belief that human cognition is aimed at truth. Also, the uniformity of nature. This is an assumption that scientists make at all times, but that naturalism cannot make sense of any kind of confidence that the laws of nature will remain constant over time.

But the theist has an easy explanation for that. God has ordered the world in such a way that these laws of nature will remain constant and reliable over time, reliable for the doing of science so that we can make predictions about future phenomena, which is essential to the practice of science. And finally, the efficacy of mathematics in understanding the physical world, which is an absolute mystery to the naturalist, how it is that all of these very complex calculations that are done by physicists map onto the world so well, such that when you do the calculations, you can be confident that when you do the experiment, it'll turn out just as you predicted.

Albert Einstein had predicted that light from distant stars would be affected by the gravitational pull of the sun as it went by the sun as part of his relativity theory. And when this was tested through a solar eclipse in August of 1919, down somewhere in South America, Einstein didn't even bother to make the trip down there. And when his theory was confirmed, one of his assistants came into his lab and said, Dr. Einstein, your theory was confirmed, your theory was confirmed.

Just as you predicted, it was reported that Einstein didn't even look up. He just kept jotting down some notes he was making in his lab. And his only response was, oh, I knew that was the case.

The mathematics proved it. So, he was confident just from the math that this very controversial claim about the physical world was true. And that's just one example.

Every day, all over the world, scientists are making predictions based on mathematical calculations, and we just take it for granted. Even in the building of bookshelves or doing some sort of renovation in my house, whenever I'm doing woodworking or whatever, I'm reminded of this fact. I make the mathematical calculations, and sure enough, if I do it carefully, the object I'm making, the buffet I'm building, or the bookshelves I'm making turn out just as I had envisioned because thought reflects reality in the mathematical sphere.

How do you explain that? Well, the theist has an explanation, and that is that God has set the world up this way, and he has fitted the human mind and human cognition to the world in such a way that we can be confident that thought reflects reality. Now, we need to be very careful, studious, and rigorous in the way we do our math and the rest of our thinking, but this is how the world works. It's because God set it up this way.

The naturalist doesn't have an explanation here or on any of these other things. So, I think these are some really good points that Plantinga makes regarding the deep concord between science and religion, particularly theism, as well as a deep conflict between naturalism and science. So, that ends our discussion regarding science and religion.

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