

TRANSCRIPT

An Undeceptions podcast.

TAPE: INTERVIEW

Bill Moyers:

Do you give them an A at least for trying to reconcile faith and reason?

Neil deGrasse Tyson:

I don't think they're reconcilable.

Bill Moyers:

What do you mean?

Neil deGrasse Tyson:

Well, so let me say that differently. All efforts that have been invested by brilliant people of the past have failed at that exercise, they've just failed. And so, the track record is so poor that going forward I have essentially near zero confidence that there will be fruitful things to emerge from the effort to reconcile it.

JOHN DICKSON EDITORIAL

That's America's number one celebrity physicist, Neil deGrasse Tyson, being interviewed by American journalist, Bill Moyers. Tyson is clear, religion has a poor record in getting along with science. In fact, it has a habit of getting in the way of science. The two ways of thought are irreconcilable. There's a lot of this out there. Back in 2009, the openly Christian Francis Collins, one of the founders of the Human Genome Project, was appointed by President Obama as the Head of the National Institutes of Health in the US. It's a position that basically made him the face of American science. He received intense public criticism on account of his Christian faith.

Steven Pinker from Harvard questioned the appointment on the grounds that Collins was, and I'm quoting here, "an advocate of profoundly anti-scientific beliefs." P.Z. Myers, who's a biologist over at the University of Minnesota, complained, and again, I'm quoting, and you can go and check out our show notes for this, "I don't want American science to be represented by a clown."

Over the pond in the UK, there was a minor furore when the decorated physicist, Professor Tom McLeish, published a book about science and God. McLeish was the Chair of the Education Committee of the Royal Society, which is the UK's preeminent science academy. And when the book came out in 2017, Jerry Coyne, who's the Professor of Biology at the University of Chicago, publicly slammed McLeish writing, "What the bloody hell is a theist doing in that position?"

JOHN DICKSON EDITORIAL

And apparently things are getting worse or better depending on your take on this, because a 2018 Barna study found that younger people, millennials and Gen Zs are more likely to see a conflict between faith and science than Gen Xs, my mob. So, the perceived conflict between science and religion would seem to be alive and well, and maybe even growing, but if you give us this hour, I'm confident my guests on the show today will convince you that the science versus religion trope is little more than a meme, a myth, a con job. It turns out that a generation of academic historians of science has explained how this meme, what they call the conflict thesis, became embedded in our culture, basically through a stunning distortion of the facts.

I'm John Dickson, and this is Undeceptions.

Undeceptions is brought to you by Zondervan Academic's new book, Religious Freedom in a Secular Age, by a friend of the podcast and my good mate at Ridley College, Michael F. Bird.

Each episode at Undeceptions, we explore some aspect of life, faith, history, science, culture, or ethics that's either much misunderstood or mostly forgotten. With the help of people who know what they're talking about, we're trying to undeceive ourselves and let the truth out.

INTERVIEW BEGINS

Dr. James Ungureanu:

Well, in a nutshell, the conflict thesis, this idea itself is the idea that science and religion are fundamentally in conflict, always have been, always will be. This is a history of war. So, in that sense-

JOHN DICKSON EDITORIAL

That's Dr. James Ungureanu, a historian of science at the University of Wisconsin-Madison, a brilliant university. My daughter did a study abroad there. And he's also an honorary research fellow at the Institute for Advanced Studies in the Humanities at the University of Queensland in my home country. He's written a few books now on the history of the supposed conflict between science and religion, but it's his latest book *Of Popes and Unicorns: Science, Christianity, and How the Conflict Thesis Fooled the World*, that I'm most interested in today. He wrote it with David Hutchings, whom we'll meet in a moment. I caught up with David in York, and James in Los Angeles.

Dr. James Ungureanu:

So, in that sense, it is a historical argument, an argument based from history. So, most proponents of the conflict thesis maintain if you look back in history and particularly Christian history, but not exclusively Christian history, if you look back at every moment, every step in advance of science or new learning, religion has attempted to oppose, oppress, deny that progress.

We have notions like Christianity was responsible for the demise of ancient Greek science, that the medieval period was an age of intellectual darkness, that Galileo was imprisoned and tortured for advancing Copernicanism, that so-called scientific revolution of the 17th century liberated science from

religion, or at least started the process, or that Christian theologians opposed Charles Darwin's theory of evolution, and so on. The list really is endless.

JOHN DICKSON EDITORIAL

I reckon some listeners will be thinking, "Well, yeah, all of those events just listed are true. Aren't they?" It turns out, no. Seriously, no. We'll explore them later in the episode, but first I want to introduce you to the two guys who are to blame mostly for the popular myth that science and religion have been in perpetual conflict. Their names are John William Draper and Andrew Dickson White, no relation. Draper and White, both lived in the mid to late 1800s. The notion of a tiff between science and religion didn't exactly start with Draper and White, there are isolated examples earlier in the 18th and 19th centuries, but these guys popularized the thesis of a war between science and religion and they did it in an unparalleled way. Even if you've never heard the names Draper and White, you've been influenced by them, so have I.

John Dickson:

Okay. So, let's dive straight into these guys. For those who have never heard the names John Draper and Andrew White, introduce them to us.

David Hutchings:

Sure. So, John Draper grew up in England, is an Englishman, in the early 1800s. He was a chemist in his initial early career, but in those days, science was exploding left, right and centre, and it was possible for you to be part of the forefront of multiple sciences at the same time. So, for example-

JOHN DICKSON EDITORIAL

That's David Hutchings, he's a really interesting guy. He teaches physics at the 508-year-old Pocklington School in York in the UK, where William Wilberforce went. And in the last few years, he's carved out this lovely niche for himself as a popularizer of science, co-authoring books with scholars like James, as well as with theoretical physicist, Tom McLeish, and astrophysicist, theologian, David Wilkinson, both of whom by the way, we have coming up in future episodes.

David Hutchings:

So, for example, Draper helped in the development of the telegram. He took the first photograph of the moon. He took the first clear photograph of a human face. He identified the temperature at which metals first started to release light. And he also worked on osmosis between barriers in the body and in other tissues. He also put forward the argument that there was no such thing as some sort of living force that was keeping things alive, that was separate to biochemistry and physics, and said, "No, life really is a product just of physical mechanisms." So, he had his finger in many scientific pies.

And then as he developed his career, he became more and more interested in other areas as well, and probably spent the second half of his career better known as a historian. And when he died, one of the obituaries written about him said that he might be the most significant and important scientist in all of

America, which is quite extraordinary when you think about the fact that nobody now seems to know who he was.

JOHN DICKSON EDITORIAL

John Draper wrote his manifesto on religion and science in 1874. He rather tellingly called it History of the Conflict Between Science and Religion. He intended it as a decisive account of the relationship between science and faith spanning 2000 years of people, ideas, and events. Here's his damning conclusion read by Producer Kaley.

KALEY READING:

Then has it in truth come to this, that Roman Christianity and science are recognized by their respective adherence as being absolutely incompatible. They cannot exist together; one must yield to the other. Mankind must make its choice; it cannot have both.

JOHN DICKSON EDITORIAL

James and David point out that Draper's book was the first of its kind. And had it remained the only one of its kind, it might not have had the impact it did, but hot on the heels of Draper came Andrew Dickson White with an even bigger book, two volumes, that helps cement the idea in the modern mind of a war between science and religion.

Dr. James Ungureanu:

Andrew Dickson White was never a scientist, he was a man of literature. He was born in New York, right around the time Draper and his family were making their way to America from England. White's parents believed he was also destined for the pulpit. His father sent him to an episcopal college, but White found a curriculum at the school totally uninspiring. He actually ran away and demanded to be sent to Yale College. So, in 1855, at the remarkable age of 25, he was appointed History Professor at the University of Michigan. At the outbreak of the Civil War though, he resigned his post and was unexpectedly nominated and elected for New York State Senate. It was during this time that he met Ezra Cornell, a Quaker who had made a fortune in the telegraph business. And together they founded Cornell University in Ithaca. White became-

JOHN DICKSON EDITORIAL

Ezra Cornell and Andrew Dickson White set up Cornell University with the express purpose to "afford an asylum for science, where truth shall be taught for truth's sake." Most American colleges were established by religious denominations. Harvard University, the oldest institution for higher learning in the US, was established by a Puritan benefactor. And although it never had a formal affiliation with a particular denomination, for the first few hundred years, Puritan style Christianity was the dominant force, so much so that its ceremonial song, Fair Harvard, praises its Puritan heritage.

All this to say White's involvement in the creation of a university that was entirely free of so-called sectarian shackles is a sign of where his own book would take us.

David Hutchings:

Well, there are some stories that go round for why he wrote this book that we think perhaps are not accurate, but they're very well known. One is it was part of the professionalization era. So, the idea being that the church had had its hold on the universities and it had its hold on the science profession and you couldn't really get anywhere unless you were firmly embedded in the church. And a lot of the most famous developers of science in the 16 and 1700s were either priests or they were very closely affiliated to the church. And a reaction against that was the professionalization reaction to say, "Right, what we need to do in order to get science out of the grasp of the church and be able to do proper science, we need to be able to do it on our own terms without having to sign off the Westminster Confession or anything like that."

And so, if we create the idea that science is a profession and you do it full-time, we can force the amateurs out. They will lose their credibility because they are not professionals. So, that's one model that's put forward. And then another is when he and Cornell first wanted to put forward Cornell University as a real prospect, that it was attacked by religious people who didn't like the idea that this institution was going to be non-sectarian and would appoint professors from all creeds. And White is quite specific on this, he says, "This is somewhere where anybody of any persuasion can come and study or teach."

And there was a backlash, ministers were writing in and bishops were writing in and saying, "You can't do this. This will lead people away from God. You need a proper Christian foundation." And so, the idea is that White was really angry about that and wrote a reactionary piece to it. And it's true that those two things were going on, but they're not the reasons that White gives himself for writing the book.

JOHN DICKSON EDITORIAL

In 1869, White gave a lecture called The Battlefields of Science, painting science as the hero and religion as the villain. He named case after case in which dogma had damaged cosmology, astronomy, chemistry, anatomy, and so on. The lecture caused a sensation and was published in full as a pamphlet in New York. He continued his criticism of religion by writing frequent essays for a well-known science magazine. And then in 1896, he put it all together in his massive book, A History of the Warfare of Science with Theology in Christendom. In it, White gives us his motivation for the book. Thanks Kaley.

KALEY READING:

As honoured clergymen solemnly warned their flocks first against the atheism, then against the infidelity, and finally against the indifferentism of the university, as devoted pastors endeavoured to dissuade young men from matriculation, that is entering university to study, I took the defensive.

JOHN DICKSON EDITORIAL

White took it upon himself to change the way people thought about science and religion forever. Free thinking belonged to science, but religious dogma had only ever held science back. Draper and White weren't exactly atheists trying to dismantle the church, they just hated what they called Christian dogma. Now, the word dogma just means thought or viewpoint, we all have dogma, but Draper and White used the term dogma in the holy negative sense that is now the main connotation.

David Hutchings:

Okay. The brief summary of both books is that Christian dogma and the constant reinforcement of it has only ever undermined science and caused all kinds of problems for scientists. And as a result, Christianity needs to become less dogmatic, that's the summary, but they do differ, Draper and White, because they think it should become less dogmatic in different ways.

JOHN DICKSON EDITORIAL

There's a subtlety here I was thinking of leaving out of the episode, but I think producer Kaley might be right. It's worth knowing the slightly different perspectives of Draper and White, and also that they never actually intended to make a commitment to science the enemy of belief in God.

David Hutchings:

So, Draper comes out of the English deism school and his big problem is the supernatural. He just thinks you can't expect anybody rational to believe in the supernatural. So, if you really want someone to become a Christian and you want them to be a rational scientific Christian, you need to change Christianity and get rid of the supernatural. Christ is just a man and he didn't walk on water. And the narrative that Draper allowed himself was to say, "It's fine to get rid of those things because they weren't original to Christianity." They weren't there in the first place and then all of this stuff has been added, he called them Catholic corruptions. And so, his claim was that he was turning the clock back to a purer Christianity before everybody got their fingers on it and turned it into something embarrassing and irrational.

JOHN DICKSON EDITORIAL

Frankly, a Christianity without say the resurrection of Jesus isn't Christianity at all, but there was quite a bit of this sort of thing going on in the 1800s, a feeling that Christianity in our enlightened age should really just be about revering a vague creator and being moral towards your neighbour. People even said that this was the original Christianity before the dastardly church got in the way. Andrew Dickson White kind of shared this outlook, but he was more on a philosophical journey, influenced by the prominent German philosopher, theologian, Friedrich Schleiermacher. White wanted a religion of the heart, what we might call today, spirituality. He wanted religion that was totally malleable in terms of doctrine, in terms of things actually he believed.

David Hutchings:

So, Draper is looking backwards and White is looking forwards, but they both decide that they need to get rid of dogma, they need to get rid of superstition. And so, integral to their argument is for them to say... both of them need to say why dogma is bad. They both need a reason to say why dogma is bad. And they both pick the same reason; we can say dogma has held back science. And if we do that, we've given a really good argument for ditching all of this stuff.

JOHN DICKSON EDITORIAL

And I'm sorry to say, there was also quite a bit of anti-Catholicism going on. For Draper, especially, it was Catholicism, not Christianity in general, that was to blame for the rift between science and religion.

Dr. James Ungureanu:

Draper's history of the conflict was largely a condensed version of his history of the intellectual development of Europe, which he published about a decade earlier in 1863. And in this book, he made a crucial distinction that most historians of science have forgotten or ignored. And discussing the so called paganization of Christianity under Emperor Constantine, Draper distinguished between Christianity and ecclesiastical organizations.

"The former," he wrote, "is a gift of God," that is Christianity, "is a gift of God, but the latter, is the product of human invention, human exogenesis, and therefore open to criticism or condemnation." He argued that, "The paganization of Christianity had resulted in the tyranny of theology over thought, and declared that those who had known what religion was in the apostolic days might look with boundless surprise in what was now engrafted upon it and what was passing under its name." So, Draper obviously is drawing his narrative, drawing his history from Protestant historians.

JOHN DICKSON EDITORIAL

So, here's the thing to try and get our heads around. Draper thinks he's mainly calling out Catholic corruptions, but as people read his and White's works, the critiques of Catholicism begin to be applied to all forms of Christianity. Faith itself is opposed to science.

John Dickson:

Do we have a sense of how popular the books were in the time and the decades that followed?

David Hutchings:

Yeah, they were hugely popular and incredibly influential. So, Draper's book was written as part of a series, the International Scientific Series, and these books were bestsellers, all of them. It would've been a book that most people would've had if they were interested in the world of ideas. And then, White's as well, a similar sort of story, incredibly popular. So, most people would've been aware of these books.

JOHN DICKSON EDITORIAL

The books by Draper and White hit both the academy and the popular press, and the science versus religion meme took off. There's a deep irony here though, Draper and White were adamant that Christianity needs to rid itself of its myths and half-truths, its dogmas, in order to be compatible with science. But in the process, they themselves told half-truths and invented more than a few myths about the conflict between religion and science. And these myths are still widely believed today, not among historians of science, but in the general public.

I think it's fair to say Draper and White gave us secular dogmas. Christianity apparently killed off Greek and Roman science and plunged Europe into the so-called dark ages. Christians destroyed ancient libraries and forbade the study of philosophy. They tortured and killed anyone remotely scientific. They stood unmoved in their belief that the earth was flat, denied newly discovered anaesthetic to women in

labour, denied heliocentrism, evolution, an old earth, a vast universe, and on and on. All of that is simply untrue. We'll explore why after the break.

SPONSOR AD: ZONDERVAN

John Dickson:

This episode of Undeceptions is sponsored by Zondervan's new book, Religious Freedom in a Secular Age, by my friend, Michael F. Bird. Hey mate. In one sentence, if that's possible, what is your book about?

Michael F. Bird:

It's about the meaning of secularism, which may I add is not a bad thing. It's not a big stick to beat up religious communities, it's about creating space for people of all faith and none. And I also want to talk about religious freedom. What is religious freedom? Why does it matter? And why is it absolutely necessary for a healthy multicultural democracy?

John Dickson:

Hey, but why did you write it? I can't imagine anyone's interested in that little tangential topic nowadays.

Michael F. Bird:

Well, it's actually quite a big topic as we know from recent events in Australia, the US, and all over the world. Parliaments are debating it. And some people want to define religious freedom as nothing more than a license to discriminate against minorities, which I think is a horrible way to define religious freedom. Because you cannot restrict religious freedom without restricting other cognate rights. Things like freedom of speech, freedom of association, and a good metric for how liberal free and good any democracy is, is often what they do with religious freedom. If you have a narrow view of religious freedom, you can have a narrow view of other cognate rights and freedoms as well.

Michael F. Bird:

Secularism means keeping the government out of religion and keeping religion out of government. In other words, this book is about why we should not be a theocracy like Iran, but why we also shouldn't be a totalitarian atheistic state like North Korea. So, if you don't want your country to be Iran or North Korea, then you really should read this book.

John Dickson:

And I want you to tell me, what do you hope believers would gain? And what do you hope doubters, people who don't believe, might gain from this book?

Michael F. Bird:

Okay. To believers, I hope they will come away thinking of secularism as a good thing, because we often talk about secularists are the enemy. Now, secularism is not your enemy, secularism is what protects you

from the government. Secularism is a good thing. Secularism is your friend. And then what I would want to say to doubters or sceptics is, look, even you, have a vested interest in religious freedom, because a government that could curtail and restrict religious freedom can also curtail and restrict other freedoms. So, maybe you don't like your local Muslim school, maybe you don't like your Catholic charity and their hiring policy, but a government that takes it upon itself the you right or the prerogative to regulate religion can also start regulating other areas of life.

John Dickson:

You're a legend, mate. Thanks. I really hope this book knocks it out of the park. Mike Bird has been a guest of this podcast a few times now. So, we reckon if you listen to Undeceptions, you'll get a lot out of Mike's new book, Religious Freedom in a Secular Age, published by Zondervan. You can get it on Amazon now.

SPONSOR AD: ANGLICAN AID

John Dickson:

15-year-old Zawadi stopped going to school when a deformity in her lower limbs progressed to a point where she just couldn't make the long journey on foot. Zawadi's mother sold part of the family farm in rural Tanzania to get help from traditional healers, but Zawadi continued to deteriorate. When a medical worker from the Karagwe Program saw Zawadi, she was sent to a local hospital for treatment and began receiving physiotherapy.

Now Zawadi can walk with crutches, and she's started leather work classes, learning to make school shoes, which will provide ongoing employment. The Karagwe Disability Program supported by Anglican Aid offers assistance for people in rural Tanzania living with a disability. Services like this are all too rare, but for people like Zawadi, they are life-changing. You can help Anglican Aid support more people like Zawadi by going to anglicanaid.org.au. That's anglicanaid.org.au. Thank you for supporting this organization I trust.

EPISODE CONTINUES

TAPE: ENTERTAINMENT WEEKLY

Neil deGrasse Tyson is over B.o.B's Flat Earth Theories. The rapper's tweet supporting a conspiracy theory about the earth being flat went viral only for America's favorite celebrity physicist to correct B.o.B's misconception. For the record though, Tyson is still a fan of B.o.B's, tweeting, "Five centuries regressed in your reasoning doesn't mean we all still can't like your music." Now that's how you keep it classy. For more on this-

JOHN DICKSON EDITORIAL

In 2016, American rapper, B.o.B, producer Kaley's favored artist actually, launched a string of tweets to his 2.3 million followers supporting the conspiracy theory that the earth is flat. America's chief celebrity

physicist, Neil deGrasse Tyson, I mentioned at the top of the show, launched an offensive with 14.3 million followers of his own. But by telling B.o.B that he'd still listen to his music even if his thinking was regressed by 500 years, Tyson was perpetuating a myth all of his own.

Tyson is repeating the claims of one of his predecessors, Carl Sagan, the American cosmologist and astrophysicist. Sagan hosted the really popular 1980s documentary series called *Cosmos: A Personal Journey*. And Tyson created a follow-up to the series in 2014. Sagan called the years between AD 500 and 1500, the "millennium gap, a poignant lost opportunity for the human species." That gap is also popularly known as the dark ages. And Neil deGrasse Tyson's tweet accusing B.o.B of being 500 years regressed in his thinking, places the rapper back in that shadowy gap. According to a popular perception, people who lived in the Middle Ages all believed the earth was flat. And that was in large part thanks to the backwards thinking of the church, which had apparently buried the work of great Greek and Roman thinkers who knew otherwise.

The argument goes something like this. In ancient Greece, the philosophers Pythagoras and Parmenides recognized that the earth was spherical. Aristotle a little later pointed out that you could see some stars in Egypt and Cyprus that were not visible at more northerly latitudes. And also, that the earth casts a curved shadow on the moon during a lunar eclipse. The earth, he concluded, must be round. But Christians didn't like this idea and categorically rejected the science of the ancient Greeks, thus setting back scientific discoveries for hundreds of years. Here's David, again, talking about Andrew Dickson White's contribution to this chestnut.

David Hutchings:

So, their argument is that although the Greeks were brilliant and scientific and insightful and heroes in the intellectual world and everything that White wants in terms of people making progress, the Christian church rejected all of that and turned its back on it. And it wasn't until Columbus sailed round off to America that the church began to realize maybe it was in trouble. And he actually says in his book that it's another 200 years before they give up and admit that the world is round. And Draper basically agrees with this as well.

JOHN DICKSON EDITORIAL

John Draper's book was the significantly shorter one of the two, and he puts it succinctly. Here it is. "Scriptural view of the world, the earth, a flat surface. Scientific view, the earth, a globe." Both Draper and White offer up two Christian leaders from the previous 1800 years who said the earth was flat, two. The first was the great fourth century professor of literature and rhetoric, Lactantius, we mentioned him in the Constantine episode. Because among other things, he recorded for us the Edict of Milan, in which you might remember, Constantine enshrined freedom of religion in the empire.

The other guy is Cosmas Indicopleustes, which basically means the Indian traveller or Indian navigator. He was a sixth century explorer turned monk. And he wrote a book on geography in which he rejected the spherical earth in favour of a flat earth. These are the guys that Draper and White lifted up as the spokesman for the churches' general commitment to a flat earth.

David Hutchings:

Lactantius says essentially that the earth is flat and Cosmas does too. And these people were sort of figureheads for the church, according to Draper and White. And therefore, they're representative of the fact that the church taught that the earth was flat.

John Dickson:

Sure. Now, what's wrong with the story?

David Hutchings:

Yeah. What's wrong with the story? Well, the reason those two people get quoted and they get quoted still today in any modern versions of the myth is that they are the only two. They are the only two Christian writers that you can find who say that the earth is flat. And they were roundly mocked by other Christians at the time of their own life and afterwards. John Philoponus really lays it on this and says, "These guys are an embarrassment." And they had no influence. They had no influence on church thought whatsoever on this issue. It would've just seemed silly to everybody. In fact, it did seem silly. Cosmas-

JOHN DICKSON EDITORIAL

John Philoponus was a sixth century philosopher and theologian, one of Cosmas's contemporaries in Alexandria, actually. Among his many, many writings, he produced this rather pointed takedown of Cosmas about his flat earth views. You want to do this one, Kaley?

KALEY READING

If certain people owing to the uneducated state of their soul cannot attain to what has been said and are troubled about the way the facts are put together, silence will help them to cover up their own ignorance. And let them not tell lies about God's creation out of their own lack of experience and the slowness of their mind. Some people saying that the sun is carried by the north winds to return to the east being hidden by very high mountains, was an ancient and foolish notion held by some which deserves the laughter befitting it.

David Hutchings:

Cosmas basically is then not read again for about another 800, 900 years before he is rediscovered. And when he is rediscovered it's as a curiosity. So, the idea that he was guiding anybody's thinking on this is nuts.

John Dickson:

How do you know that the church didn't believe in a flat earth?

Dr. James Ungureanu:

Well, you look at theologians, you look at they were drawing from Greek natural philosophy and they knew from the very beginning that even the Greeks understood that the world was globally or it was

round. So, the idea that Christianity had somehow ignored or destroyed Greek philosophy and Greek natural philosophy is a lie, those texts were actually preserved in monasteries of the church.

John Dickson:

It's the only reason we have them.

Dr. James Ungureanu:

Yeah. Yeah. The vast majority of classical literature that we still have is because monk scribes copied them down and preserved them in the monasteries, which eventually became, a lot of these monasteries, these cathedral schools, became our very first universities like Cambridge and Oxford. So, they preserved this Greek literature. There was a time where it was scarce because of war, the Barbarian invasions and that destruction, but it was the monks who preserved this literature, the monks who preserved this natural classical literature.

John Dickson:

So, are you basically saying, no, the church generally believed in a spherical earth?

Dr. James Ungureanu:

Yeah, it's quite easy to prove it as well. So, you quite often see these paintings throughout history of a ruler sitting with maybe a staff or a secretary in one hand. And in the other hand, they're holding a golden ball. And the golden ball sometimes has a cross on the top of it. And you think, "Well, what's that?" And the answer is that's the world. They were being depicted as a ruler over the world, although ultimately, it's Christ's world, which is why you've got a ball and a cross on the top of it. It wasn't a flat disc that they were holding in their hands.

And then the Venerable Bede, he mentions it. He's early on. You have John Sacrobosco or John of the Holy Cross, he wrote a textbook called *The Sphere*, which was used in medieval universities and the clues in the name, that's all about the world.

John Dickson:

Giving away the punchline.

Dr. James Ungureanu:

That's right. And then some people then the counterclaim can be, "Oh yes, but these were only the learned, the isolated learned, the ivory tower," but people didn't know that the world was a globe, your normal person in the street, but that doesn't match up either because popular works of the time, like *The Canterbury Tales* or *Mandeville's travels* or even *Dante's works*, they have a spherical earth in as well. And they were just read by or known by the general populace. So, there are probably more people alive now who believe in a flat earth than they have been in the last 2000 years.

JOHN DICKSON EDITORIAL

Yes. Yes, YouTube has a lot to answer for. So, the medieval church did not teach a flat earth, it held to a spherical earth, but they did insist the earth was the centre of the universe, right? After all, the church burned Giordano Bruno at the stake in 1600 for his cosmology. And they persecuted Galileo some 15 years later for saying the sun was at the centre.

In 2014, Neil deGrasse Tyson hosted a reboot of Carl Sagan's *Cosmos* series, exploring "humanity's heroic quest for knowledge and the laws of science." The series follows closely the narrative we read in Draper and White. The very first episode opens with their fabled story of Bruno and his encounter with the Inquisition, which eventually led him to be burned at the stake for declaring an infinite universe and the possibility of multiple worlds.

TAPE: Neil deGrasse Tyson:

It wasn't long before Bruno fell into the clutches of the thought police, this wanderer who worshiped an infinite universe, languished in confinement for eight years. Through relentless interrogations, he stubbornly refused to renounce his views. Why was the church willing to go to such lengths to torment Bruno? What were they afraid of? If Bruno was right, then the sacred books and the authority of the church would be open to question.

David Hutchings:

Well, let's take Bruno. So, Bruno initially trains as a priest, he is an interesting character and he's often painted as a scientist. The claim is that he was using his science and came to the conclusion that the earth is just a planet, that the sun is just a star, that there were countless other stars and countless other worlds, which is incredibly prescient. And that the church didn't like that and they objected very strongly to it and that they burned him at the stake for it. That's the story. And there's just enough truth to it to keep it going for it to have real momentum, but the reality is very different. So, Bruno was not a scientist, it's a bit anachronistic to call someone a scientist at that time. I think the picture we have in our head is wrong, he didn't look through telescopes because there were no telescopes when he was making these claims. And his claims were theological claims.

So, what got Bruno into trouble then? Well, what mainly got him into trouble is that he was hugely offensive to people and he was a wind-up-merchant. He wrote angry, insulting texts, he went after people, he made a lot of enemies, and he also abandoned a lot of the central doctrines of the church, he abandoned the Trinity, he didn't think that there needed to be a church. And in the end, that is what got him in trouble. The church massively overreacted to their eternal shame, should never have burned him at the stake, and the people who did will have to answer for it, but he did not die as a martyr to science.

Dr. James Ungureanu:

He was very much influenced by pagan philosophy and Greco-Roman philosophy, and his views were more kind of a pantheistic understanding of the natural world. We want to make clear that people understand that Bruno was persecuted and burned at the stake, not because of his scientific views, but because of his heretical views when it comes to Christianity.

JOHN DICKSON EDITORIAL

Okay, it's still horrible that the church killed Bruno, but the problem the church had was not his science. It's different with Galileo though, right? He was tortured and imprisoned by the church for science. Galileo was a Copernican. He subscribed to the heliocentric views of Nicolaus Copernicus, who lived a generation or two before Galileo. The church did bar Galileo from teaching that the earth revolved around the sun, but Galileo continued to teach it and eventually found himself on trial. Here's how Draper puts the story in his Conflict book.

KALEY READING

On his knees, with his hand on the Bible, he was compelled to abjure and curse the doctrine of the movement of the earth. What a spectacle. This venerable man, the most illustrious of his age, forced by the threat of death to deny facts which his judges as well as himself knew to be true. He was then committed to prison, treated with remorseless severity during the remaining 10 years of his life.

JOHN DICKSON EDITORIAL

So, it doesn't sound great for the church here at all.

Dr. James Ungureanu:

Now, Galileo is even more complicated in the sense that Galileo was supported by the Roman Catholic church for a very long time. His scientific work and achievements were... He was a patron. The Roman Catholic church was a patron of Galileo for a long time. But I think what you have to take in consideration is Galileo was speaking out and publishing at a time just after the Protestant Reformation. So, the Roman Catholic church was dealing with external conflict when it comes to the Protestants, but also there were many instances of reform movements within the church as well. So, the paper state was under a lot of heat and Galileo was not exactly very politically diplomatic and tactful, he ended up insulting the Pope who supported him for a very long time.

JOHN DICKSON EDITORIAL

Just a quick summary of the context of Galileo's disagreements with the Pope. This is at the height of the Catholic church's battle with Protestantism. The reformation, when a lot of churches had broken away from papal authority is underway in this period. So, when Galileo comes out and says that he can interpret Scripture better than the Catholic church, it's a sore point to say the least.

Now, back in 2015, I interviewed Professor Peter Harrison, who's one of James' mentors and teachers at the University of Queensland. He was also the Professor of Science and Religion at Oxford University. As an historian of science, Harrison has a particular interest in the relationship between science and religion throughout human history. And this is what he told me about the Galileo incident.

Peter Harrison:

So, was this a science-religion controversy? In part, it was between two competing versions of science, and the church backed the wrong side. So, that's one element of it. And the other element of it is that Galileo actually had religious supporters. So, it wasn't a science-religion controversy. Was it typical of the Catholic church? No, no, it was actually very out of keeping with the way they tended to deal with

science and philosophy. And the Catholic church gave more support to the study of astronomy from say the 14th to the 18th centuries than any other single institution and probably all institutions put together.

JOHN DICKSON EDITORIAL

Hey, and a special thanks to my friends at the Centre for Public Christianity for that audio.

Dr. James Ungureanu:

The idea that Galileo was tortured and imprisoned, that's also false. He was not tortured, there's no evidence that he was tortured at all. And his imprisonment was palace, mansions and house arrest in his Florentine villa.

John Dickson:

A bishop friend.

Dr. James Ungureanu:

Right. Right. Even during the sort of inquisition towards Galileo, he was still put under comfortable accommodation during this house arrest. He wasn't put in a dungeon like prison. So-

John Dickson:

Put on the rack and burnt and... Yeah, yeah.

Dr. James Ungureanu:

Right, it's very, very complicated. So, you have to consider political movements at the time, you have to consider religious internal changes going on at the same time, and you have to also consider Galileo's own personality, which was at times quite arrogant. So, the story is messy.

JOHN DICKSON EDITORIAL

So, we've got to hold several things in tension with the story of Galileo. Yes, he was put on trial for advocating that the sun was the centre of the universe. That was the church being dumb. But no, he wasn't tortured. And his imprisonment was simply living at a friend's house and then his own villa with full permission to continue his work on physics. In fact, his major treatise on motion called *Two New Sciences* was written after his trial. And it sold out immediately in Papal Rome.

Let me read you a quotation from the unsurpassed compendium on the history of science. It's the Cambridge History of Science: Volume 3, which has a lengthy section on the Galileo incident. It basically concludes that what the public thinks it knows about the incident is a myth.

"The trial of Galileo was transformed from a historical event into a powerful cultural symbol, which loomed large in the 19th century treatments of Draper and White. However, 20th century investigations of the trial on the basis of the inquisitorial documents have pointed out the importance of these specific historical and political circumstances in which the trial took place. Such studies have been effective in eroding though not erasing the belief in an inevitable conflict between science and religion that grew out

of the 19th century understanding of the trial of Galileo." For the nerds, that's Cambridge History of Science: Volume 3, 2006, pages 746 to 47.

JOHN DICKSON EDITORIAL

About a hundred years before Galileo and Bruno, in the early 16th century, the church was accused of putting up another major barrier to scientific progress. This time, in the field of medicine. Have a listen to this from Andrew White's Warfare book.

KALEY READING

Had not such men as Thomas Aquinas, Vincent of Beauvais, and Albert the Great being drawn or driven from the paths of science into the dark tortuous paths of theology, leading no whither, the world today at the end of the 19th century would have arrived at the solution of great problems and the enjoyment of great results, which will only be reached at the end of the 20th century and even in generations more remote. Diseases like typhoid fever, influenza and pulmonary consumption, scarlet fever, diphtheria, pneumonia, and the grippe, which now carry off so many most precious lives, would have long since ceased to scourge the world.

JOHN DICKSON EDITORIAL

What a brutal passage. The church is apparently responsible for the deaths of millions of people by stunting the growth of the practice of medicine and distracting some of the world's great minds with silly theology when it should have been directing them to science. White seeks to demonstrate the point by claiming the church banned dissection of the human body and the use of anaesthetics, but again, it's a myth.

David Hutchings:

So, it's interesting that they, you rightly say, that they give this picture of the church banning dissection, and it was actually the church that first legalized dissection. It first starts happening under the hospices of the church in the early medieval universities, where the church would have to be asked for permission to perform a dissection and they would give that permission. Now, sometimes it was for strange reasons, like they would dissect a Saint to find out what was making them so holy, but other times it was anatomy. And so, this is a myth that can be turned upside down. It's the other way around. This is when it first occurred.

JOHN DICKSON EDITORIAL

In a pivotal collection of essays on the alleged conflict between religion and science called Galileo Goes to Jail, Katharine Park, a Professor of the History of Science at Harvard, wrote that the idea that the church banned dissection was a myth that just won't go away. Pope Boniface VIII did issue a papal bull in 1299, which forbade a funerary practice, where you cut up the corpse and boil the flesh off the bones so you can easily transport the loved one for distant burial. It was a gruesome procedure that in the Pope's mind threatened human dignity, but the Pope didn't have medical dissection in mind. The fact is no anatomist

was ever prosecuted for dissecting a human cadaver and no case has been found in which the church ever rejected a request for a dispensation to dissect.

Grave robbing, on the other hand, was condemned by both secular and religious authorities. And that did get some anatomists in trouble, but that can't be confused with the church's opposition to dissection. You'd get into as much trouble today if you dug up someone's corpse for an anatomy lesson. Katharine Park notes that there was a general public reluctance to donate bodies to science, but this was more about cultural sensitivities around dishonouring a loved one, rather than a religious prohibition. And frankly, you can see why. In the 1500s, we see the spectacle of dissection theatre. This is dissections before a gathered audience. Guards had to be placed at the doors to restrain an eager public. There was an entry fee of course, and the dissection itself could be accompanied by a musical performance.

Special thanks to producer Kaley for digging up that detail. Check out the show notes for more.

Religious or not, I think most of us would have misgivings about letting our loved one be part of a dissection theatre. Draper and White were just wrong about medical dissection. So, what about pain relief? When James Simpson discovered that chloroform was an effective anaesthetic in the 19th century, he rightly predicted it would "turn the world upside down." But according to Andrew Dickson White, the church opposed this as well. He wrote in his *History of the Warfare of Science and Theology* these words.

KALEY READING:

From pulpit after pulpit, Simpson's use of chloroform was denounced as impious and contrary to Holy Writ. Texts were cited abundantly, the ordinary declaration being that to use chloroform was to avoid one part of the primeval curse on woman.

JOHN DICKSON EDITORIAL

He's referring to Genesis 1, where one of the punishments on Eve for eating the forbidden fruit was, "I will greatly multiply your pain in childbirth. In pain, you shall deliver your children."

David Hutchings:

Pain relief, yeah. Pain relief is another one where it is true that you can find one or two sermons written saying this shouldn't be happening, God designed us to feel pain and in particular, pregnant women. This is part of the punishment of the fall. But actually, the people who really opposed pain relief, particularly pain relief during birth were the doctors. It was the doctors that opposed it, the church was broadly in favour of it. And the reason that doctors opposed it is they were worried that if a woman was asleep, she wouldn't be able to push properly and that might cause damage to the baby and/or to the mum, which is a valid concern when a new technology comes out. And when it was shown that this could still be done, all opposition quickly dropped away. So, the gap between pain relief first being used and then just being completely accepted by everybody is a very, very short one.

JOHN DICKSON EDITORIAL

Simpson himself did write a pamphlet to defend chloroform against any religious opposition, but it's now widely acknowledged he did this to pre-empt objections, not because of any actual pushback.

Overwhelmingly, Simpson received positive responses from Christian leaders. There just isn't evidence of a general Christian objection to medical anaesthetics. In their own book, James and David don't pull any punches in calling the science and religion conflict a conspiracy that fooled the world. If your head is reeling from just how much Draper and White got wrong, believe me, we are just scratching the surface. So, grab James and David's book if you want a deep dive on this one.

5 MINUTE JESUS

Let's press pause. I've got a five-minute Jesus for you. No one who genuinely knows the history of the Middle Ages could suggest that the church put its head in the sand and ignored the life of the mind. But what about Jesus? It's pretty clear from the Gospels that he didn't have much time for the sophisticated legal and educational traditions of the Pharisees. His wisdom was of a very practical kind, the urgent kind. Was there then no real place in earliest Christianity for intellectual pursuits? Was it all just praxis, evangelism, staying alive?

In the episode last season, Jesus Philosopher, we explored why Jesus was viewed by people in the ancient world as a kind of philosopher, a teacher who touched on all the normal topics of philosophy, metaphysics, ethics, and so on. Go check that out if you get a chance. But perhaps just as significant as the general impression Jesus left that he was some kind of philosopher, is the way he put it the centre of the spiritual life, the love of God with our whole being, including the mind. Quoting the Old Testament, Jesus said that the greatest commandment of all was, "Love the Lord your God with all your heart and with all your soul and with all your mind and with all your strength." The love of God in other words is not only a thing of the heart, a thing of the soul, it's not just about striving with our moral and practical strength, we are explicitly urged to love God [foreign language 00:58:08] with the whole of your mind.

What else could this mean then? That loving God involves never bypassing the mind, not downplaying its significance in a kind of anti-intellectualism, but instead employing our minds to know God and his world. Someone who doesn't think deeply about the world, about relationships, about the way to live, about fundamental reality, about the nature of God himself, isn't loving God with their whole mind. The impact of this on the first Christian communities was instantaneous. Our earliest writings after Jesus are the Letters of the Apostle Paul, some of which are dated to within just 20 years of Jesus.

And years ago, the eminent Roman historian, Edwin Judge, wrote a couple of papers outlining why on the basis of the Letters of Paul, he thought people outside the church in those first few decades will have understood the church, not as a religious club or a ritual cult, but as a school with teachers and a set curriculum. And it's a point that's been underlined in a really detailed way by a local Australian New Testament scholar named Claire Smith. Her published doctorate outlines the surprising prevalence of formal teaching and learning vocabulary across Paul's early letters, like one Corinthians and his later ones like the pastoral epistles, one and two Timothy, and so on. And in the next century, this intellectual tradition only grows. It's a little-known fact that the church of the second and third centuries required converts to do over 100 hours of classes on the Christian faith over a three-year period.

We also know of a shortcut. There was a 126-hour program in Jerusalem over seven weeks of intense teaching and learning. And we have some of the lectures from this program composed by Bishop Cyril of Jerusalem. And honestly, the intellectual content is astonishing.

This loving God with all your mind, never stopped in the church of late antiquity and in the early Middle Ages. Contrary to popular perception, Christian clergy and monks studied and copied a vast array of both Christian theological texts and ancient Greek and Roman literary and philosophical texts. So, by the 700s, which are meant to be the dark ages, the great intellectual and church deacon named Alcuin of York designed a program of study that traversed grammar, rhetoric, astronomy, arithmetic, philosophy of music, and so on. And under his guidance, Europe experienced an explosion of schools that far eclipsed the educational programs of the Roman Empire. His schools were the ancestors of the European universities.

And anyone who takes the time to read his letters, and we have over a hundred of them, will discover that he did all of this in Christ's name. He was convinced that the so-called liberal arts were tools by which we can comprehend God's world. The more you discover about literature or astronomy, he said, the more you were participating in the wisdom of the Creator. You were loving God with all your mind. You can press play now.

JOHN DICKSON EDITORIAL

Some of what philosopher theologians were doing in the Middle Ages before the scientific revolution is mind-bendingly brilliant. It's often overlooked today because medieval historians aren't trained to understand the science and very few scientists have read anything before about the year 1600. One of the great thinkers in Carl Sagan's alleged millennium gap is the early eighth century English theologian and polymath, The Venerable Bede. Another is the late eighth century churchman and educator, my man, Alcuin of York.

David Hutchings:

Yes. So, you have The Venerable Bede, up from north-east from here. And he comes across this interesting account of... Because a big mystery in the world was, why are rivers fresh water and the sea salt water, when the rivers are the source of seawater? It seems like that, right? Rivers run into the sea. Where does the salt come from? And the classicists have thought about this too and they wondered whether there were underground tunnels and channels for water, where there was some sort of cycle, and deep underneath you have fresh water returning from the sea to the rivers and so on.

And of course, that's not a completely bonkers idea by any stretch of imagination, but Bede's discussion of it, he says, "Well, hang on. When we think about this, we need to think about saltwater and fresh water, and which floats on which." And so, he attacks the classical theory and he says, "But when you have saltwater and you have fresh water, fresh water will float on saltwater. And if that's the case, it can't be the fresh water is sinking to the bottom of the ocean and finding its way back to the rivers." Well, that's a scientific analysis. And you also think, "How does he know? How does he know that fresh water floats on saltwater?" Somebody, he or somebody, must have worked it out. So, there's an example, and that's very early on.

John Dickson:

Yeah.

David Hutchings:

And then you have Alcuin of York, so the city we're in now, truly extraordinary guy.

John Dickson:

The greatest European no one's ever heard of.

David Hutchings:

That's right. That's right. He's the guy who is challenged by Charlemagne to kind of bring about an intellectual revival. And one of the methods that he uses is logic puzzles. So, people have probably heard famous versions of, oh, you've got a fox and you've got a chicken and you've got some chicken seed and you've got to get across a body of water with a boat, but you can only put in two things at a time. That's Alcuin, Alcuin writing down those puzzles for people to work their way through, which is hardly turning your brain off, it's very deliberately switching your brain on. And then we get this caricature of the Middle Ages as being totally illogical, when actually in many ways they were more logical because they were obsessed with logic.

JOHN DICKSON EDITORIAL

I can't resist telling you that recently I was in York where Alcuin lived in the mid 700s. And I talked to the famous York University physicist, Tom McLeish, who I mentioned earlier. I can't wait for you to hear that interview all about scientific imagination. Anyway, Tom is one of the few full-blown scientists who does read medieval literature. And he told me, after the interview when I stopped the record, about a scholarly paper he's about to publish with a medieval historian from the university, all about Alcuin's astronomical knowledge.

We have a letter from Alcuin trying to explain to Charlemagne, the great European king, that the regress of Mars in the night's sky is not a spooky sign of doom as Charlemagne feared, it's an entirely predictable pattern of celestial movement perfectly in line with the orderly mind of the Creator, said Alcuin. Apparently, Alcuin's mathematical explanations, Tom McLeish told me, are exactly right in the 700s. Then there's Professor McLeish's other medieval scientific hero, Bishop Robert Grosseteste. Getting back to this episode, James and David also write about Bishop Grosseteste.

David Hutchings:

So, Grosseteste, who is Bishop of Lincoln, he's wondering, "Well, where did matter come from?" And one day he's looking at light coming in through a window and he thinks, "Well, when the light comes in through a window, it expands to fill the room." And so, he theorizes that the universe may have begun just as light and only as light. And that that's what gave it its ability to expand from a single point. And then the light somehow condenses into solid matter. And he's saying this in-

John Dickson:

13th century.

David Hutchings:

In the 13th century. It's a bit naughty to say he's anticipating the Big Bang Theory, but he is exhibiting scientific theory and scientific thinking. And this is happening all the time.

JOHN DICKSON EDITORIAL

The more you look into this topic, the more you realize that John Draper and Andrew Dickson White pulled off perhaps the greatest intellectual slander in Western history. And we've all fallen for it. Actually, we haven't all fallen for it, professional historians of science have entirely abandoned the story that religion is at war with science. They study Draper and White now only as an interesting example of scientific propaganda. So, I ended my interviews with David and James with the obvious question.

John Dickson:

Final question mate, do you think good history of science will ever overcome the conflict thesis?

David Hutchings:

Wow. No, not on mass. It already has in the academy. So, you will not find any historian of science who advocates the conflict thesis. And it already has to a certain extent even in the world of science.

Professor Elaine Howard Ecklund has done a study on this. She's interviewed thousands of scientists and found that somewhere around 70% of practicing scientists say that there is no conflict between science and religion. And in the end, the conflict thesis is very convenient. I'm a teacher and students have already picked up the idea of God versus science without being able to give any examples, it's already there, because it's a convenient storyline to exist in the world in general.

So, I'm also an elder at our church, and I was running a Bible study and prayer group one night and there was a visitor. And afterwards, I got chatting to him and said, "Are you a Christian?" He said, "No, I've been invited by a friend." And I said, "Do you believe in God?" And he said, "No, I believe in science," but this guy was not a scientist and he didn't know any science, but what he was able to do by using that language is give a legitimacy to his unbelief in God. It gave him a reason to say, "I don't have to think about this any further." And so that's why I don't think he's ever going to go away.

Dr. James Ungureanu:

Historians of science have been debunking so-called conflict between religion and science for at least a century now, since the 1920s-

John Dickson:

It just hasn't trickled down.

Dr. James Ungureanu:

It's difficult. Again, it's difficult because it's not this engaging black and white simple narrative that we as human beings are naturally attuned to. This kind of messiness of history is not everybody's cup of tea, but we're working on that. We're working on trying to popularize this more complex view of the interaction between science and religion. I think honestly, that the best way to do it is to tell these stories of individual Christian thinkers who embraced the natural world.

JOHN DICKSON EDITORIAL

We've got some really exciting things happening in 2022 here at Undeceptions, including creating our own podcast network, which will be welcoming some new voices into our headphones, voices like Megan Powell du Toit and Michael Jensen, who host the already popular, *With All Due Respect*. Now, they're part of the Undeceptions Network. Their latest season has just launched and you can hear the first episode now. Go to undeceptions.com to find out more, or find us on Facebook. Just search for the Undeceptions Network, where you can get all the latest news on our podcasts and some other fun stuff.

Fun stuff like our very first Listener Survey.

It's been two years since we launched this thing and we love what we're doing, but we want to know that you love it too, or if you don't, we want to make it better. We want to hear what you do like, what you don't like, stuff you want to hear more of, and so on. It'll only take a few minutes of your time. And for your trouble, you'll go into the running to win a season pack, a bunch of books from the guests from this season. Head to undeceptions.com/survey to help us out. That's undeceptions.com/survey.

And while you're on the website, please have a look at the Donate button, it's beautiful, it's inviting. And even click it and see where the wind blows. We really appreciate the support we've been getting. We almost broke even in the last few episodes of last season, and we are hoping that in this season we'll break even each episode. I really appreciate the support from you listeners. Hey, next episode, just two words for you here, *More Than an Hour* with Tim Keller. See you.

CREDITS

Undeceptions is hosted by me, John Dickson, produced by Kaley Payne, and directed by Professor Mark Hadley. Editing by Richard Hamwi. Special thanks to our series sponsor Zondervan for making this Undeception possible. Thanks so much. Undeceptions is the flagship podcast of undeceptions.com, letting the truth out.

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