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Please can you begin by saying who you are and describing your background?

I'm a Christian philosopher working a lot of my time with a Christian educational charity called the Damaris Trust, through whom I spend quite a lot of my time working with A-Level students in schools round the country, doing conferences on philosophy and ethics and spirituality. I'm also an author for various websites and publishers and my most recent book was called 'A Sceptic's Guide to Atheism,' which is a response to the New Atheist movement.

We're talking about cosmic fine-tuning. Can you explain what people mean when they talk about cosmic fine-tuning?

I think cosmic fine-tuning is best grasped if I give you a concrete illustration: suppose we had a machine that could generate universes. We'd have to decide what laws of physics we wanted to give our universe, and make sure we had one dial for every law of physics we wanted to give our universe on our universe generating machine. But we'd also have to tune the relative strengths or weaknesses of those different laws. So, for example, if we wanted to give our universe a law of gravity we'd want to say how strong we would want our law of gravity to be, and so on. Well if we took a machine that was set up to represent the laws of physics that actually exist in our universe, one dial for every law that we actually have, and all the strengths the way they actually are, but we took just one of those dials and changed it just a minute percentage, then we pressed the 'produce a universe' button, what would be produced? Scientists have been astonished to discover, running the numbers, that what would be produced then would be a universe that was lifeless and dull and uninteresting. That is, if the laws of physics were only just slightly different than they actually are, we'd have a dull and life-absent universe.

This is used as an argument for a purposeful creator. One counter-argument says that actually there's nothing there that needs to be explained. If you were to stand on Southampton station on a Wednesday morning and look at the crowd of people that was there it would be a highly improbable combination of people. But you don't say there's something amazing about this that needs explaining. It is just the way that things are.

Some people will indeed say that any combination of laws in the universe is going to be just as unlikely, perhaps, as any other. Just because something is unlikely, that doesn't mean that therefore you have to appeal to design in order to explain it. That's correct in as far as it goes, but it doesn't go very far. Let me give you an illustration: suppose I took your bankcard and I put it into a hole in the wall machine. I punched in a four digit number to the machine and then accessed your bank records. I think you'd be rather surprised and annoyed at me. But if you raised an objection and said, 'how did you get hold of my pin number?' would you be particularly impressed if I said, 'any four digit number that I punched into this machine is just as improbable as any other. They're all one four digit arrangement of numbers out of a huge pool of possible four digit numbers, so there's nothing here to be surprised at, nothing here for you to think needs explaining in terms of me having designs upon your bank account'? Well no, it's not just that I've punched in a particular unlikely arrangement of numbers, but this arrangement of numbers is specified as the only number that happens to access your bank account. Now the fine-tuning of the universe is like that. It's not just that it's a complex, unlikely arrangement of laws, but it's that the complex, unlikely arrangement of laws that exists happens to be the one that allows life to exist, out of a huge possible arrangement of laws, most of which would not allow life to exist. So it's this combination of unlikeliness, of complexity, with an independently given specification, that in every day situations, like that bank card situation, tips us off to design, and I think should do the same in the instance of looking at the fine-tuning of the universe.

Another counter-argument that's often raised says: the universe has to be like this because if it wasn't we couldn't be here to observe it. So the only kind of universe that we could possibly observe is one that's fine-tuned for life. How do you respond to that argument?

Well it's of course true to say that the only kind of universe that we could be looking at would be one that's compatible with our existence. There's a sense, therefore, in which we shouldn't be surprised that we look out into the universe and we see a universe that allows us to exist. But that doesn't mean that we shouldn't be surprised that such a universe does exist, and think that there's nothing to explain here. I think the philosopher John Leslie gives a very useful analogy for this. He tells the story of a man who's arraigned before a firing squad. The commander of the firing squad says: 'Present arms!' 'Fire!' Bullets fly through the air, hit the wall all around the guy

who's been arraigned before this firing squad but none of the bullets hit him. Well, he's quite surprised to have survived the firing squad and says to the commandant, 'What's going on, is this a set up job, is this some sort of practical joke?' The commandant of the firing squad says, 'I don't know what you're so surprised at. After all, if any of the bullets had hit you, you wouldn't be alive now to be surprised at the fact that all the bullets missed you.' So, case closed, there's nothing to explain. But, of course, there is something fishy about that situation. Richard Dawkins mentions this analogy in his book 'The God Delusion,' and even he says that the guy should be surprised that he is still alive. Let me put it this way: just because the man wouldn't be alive now were it not for the previous occurrence of this unlikely set of circumstances, this doesn't mean that the occurrence of that unlikely set of circumstances was not unlikely, or something that needs explaining.

What about the argument that there are millions and millions of different universes with different settings of the physical values. Some of them are bound to be right, and there's a sense in which we are just lucky?

I think that the main and most popular objection to the fine-tuning argument is the suggestion that, perhaps, there are millions and millions of alternative parallel universes, or even an infinite set of parallel universes all with slightly different laws and tunings of laws. If that were the case, it wouldn't be particularly unlikely that our particular tuning of laws would exist because, after all, a whole load of different types of tunings exist. So by chance alone, it's not particularly surprising that our particular tuning of laws does exist. There are a plethora of problems with this suggestion, so that it's really quite hard to know where to begin, and which people will think is the most difficult problem for this alternative suggestion to overcome. But let me give you a few rebuttals that have been made to this multiverse alternative to saying that the fine-tuning of our universe is the result of design. One problem is this: if there were many different universes all with different tunings, then it wouldn't be too unlikely that our particularly fine-tuned universe exists. But for this objection to carry through the objector actually needs to assume that there are all of these different universes, and is there any independent evidence that such universes exist? It doesn't seem to me that there is. If you had enough monkeys typing on enough typewriters, they could produce the works of William Shakespeare just by luck but nobody looks at the works of William Shakespeare and goes, 'Ah there must be a lot of monkeys with typewriters somewhere.' In the absence of independent evidence that there is a whole typing pool of monkeys working away, everyone knows that the

most rational explanation of the specified complexity of a text like Shakespeare's work is that there was a single designer who produced it intentionally. The same thing goes for our universe. Another big problem with the multiverse objection to the fine-tuning argument would be this: if you multiply what's called your 'probabilistic resources' by saying, maybe there are loads of other universes out there - so many universes out there that the apparently unlikely fine-tuning of our universe is not, in fact unlikely, because there's so many different things going on that these hugely unlikely numbers that we get out of the fine-tuning argument are just dwarfed by the fact that there are so many other universes going on, I think that undercuts rational thought and the whole process of science itself. Because what do you do? Something surprising happens in reality and you would just say, 'well we live in this huge multiverse where practically anything is going to happen by chance. So we can't be surprised. There's nothing really to explain, other than to say, we live in a multiverse.' Suppose the atoms in this room, just by chance, happened to assemble themselves into the shape of a cat lying on my lap right here, right now. By the laws of quantum physics that's exceedingly unlikely to happen, but I suppose it's logically possible that that would happen, although it's very very unlikely. But if we live in such a huge multiverse where very very unlikely events become not surprising, then we'd have to be not surprised that a cat suddenly appeared on top of my lap and say, well there you go, what can you expect? We live in a multiverse. It seems to me that the suggestion that there are these other probabilistic resources out there undercut so much that we take for granted in the very process of trying to explain things scientifically.

You're a Christian, you're an apologist, and you're a philosopher. Do you personally find the argument from cosmic fine-tuning to the reality of a creator God persuasive?

I do personally find this argument from the fine-tuning of the universe to some kind of transcendent creator/designer of the universe quite a compelling argument. But I think it's important to view this argument in context: I don't think you would want to just look at one piece of evidence when trying to weigh up what you think about such a big issue.