

## Science and Religion: A Dialogue Sermon

by Professor Kennedy and Dean Scotty McLennan

University Public Worship

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**Dean Scotty McLennan:** My word of welcome as well to Professor Julie Kennedy. It's wonderful that you're with us today. Professor of Earth Sciences. You'll see information about her in the order of service. We're going to have some time now to talk about religion and science in dialogue.

We've had a little opportunity have this conversation, but some of this will come across unscripted as well. Who knows what you may experience here today? Professor Kennedy, can you tell us a little bit about your own background in relation to religion and science and why you were so kind as to accept this invitation to come and be with us today?

**Professor Julie Kennedy:** I'd be happy to. I was raised locally in Belmont, California...just up the road...in the Roman Catholic tradition, and in fact went to Immaculate Heart of Mary for the first eight years of my schooling and my brother indeed is a Catholic Priest. Catholicism is still something very central to the entire family.

My own path diverged quite substantially when I was young. I was confirmed in the Catholic Church. I think, by that point largely, because I thought they might not let me out of eighth grade if I didn't go through with the confirmation.

A couple of people have been seminal in my thinking about what it means to live a good life, and about God, and some connection of the God figure to that.

My brother is one of my heroes, I will say... when my own thinking started to take me away from my specific religious tradition and more toward a fairly classic agnostic position, my brother Kevin was always in my family as the staunchest defender. The one who always rose and said it is about how you live

your life, not what you profess. That was a turning point for me, thinking about what it means to live that good life and move forward.

One teacher, at the Immaculate Heart of Mary in eighth grade, who I came to find out was in her first year teaching us and I came to find out later was herself not Catholic, got all of us had a mandatory religious lesson, that was part of our 8:00Am to 3:00PM. day.

She had us read Matthew, Mark, Luke and John over the course of a year to really think about and pay attention to voice; to pay attention to the narrative, the differences; to think about the role of metaphor; to think in a much more challenging and much more deep way.

It opened up for me for the first time. It really did blow the roof off of my world. That the idea of God which had been brought to me in a very fixed and formal way was subject to inquiry. It was subject to deeper reflection and investigation. That could take me in many different directions. That is where I've come from.

**Dean McLennan:** Thank you. In fairness, let me just say a couple of things about my own background so that you know who you have seated in front of you.

I grew in a family conservative, Protestant, Midwestern family. About the same time, around the time of my Christian confirmation, I had begun to question a lot of my own traditions. Especially as a Presbyterian growing up -- predestination -- which seemed to make absolutely no sense. Also, ultimately, how can there be a just and loving God in the universe and have all the terrible things that go on, from hurricanes to tsunamis, to children being born with cleft palates, and other problems. Especially, since these were called -- I ultimately found out as an attorney which I am also as well as a minister -- "acts of God".

What kind of God would allow those horrible forms of sufferings to occur?

By the time I entered high school, I was a self-proclaimed atheist. It was only in college that I begun finding signs of transcendence again, accidentally in interaction with a lot of very interesting professors around studying...mathematical infinity and actually, human evolution, and few other things.

I came to see that the world is, ultimately, ordered in some way that scientific method depends on an assumption of consistency that the universe is not so

awry and askew that we can't generate a hypothesis and then go ahead to try to see whether they hold true or not.

My own personal journey back to religion began ironically with science. Ultimately, I also saw the important role, as you've already mentioned, of love in the human spirit. The basic law of love is what I think can help us survive as a species. Be better stewards of the universe and the Earth than we have been historically.

I found myself changing my denomination to Unitarian Universalism, which is a wide-open, non-doctrinal tradition that also takes science and logic and the humanistic traditions very seriously.

What do you think the two of us can really agree on, with you as a scientist? I will claim to be a religionist. For example, I mention order in the universe and scientific method assuming some regularity and consistency.

In fact, in the Scripture I read from the Gospel, we have Jesus not responding to the temptations of the devil to change stone into bread or to throw Himself off the pinnacle of the temple in Jerusalem, I think, possibly, because He knew about scientific laws like gravity, and as He said, "You shall not put the Lord your God to the test."

Is this something that you would say might be a connection between science and religion -- the sense of order and regularity, natural law in the universe?

**Professor Kennedy:** I like the idea of non-randomness. Evolution certainly speaks to that, the way in which we can deconstruct through the scientific method and come to understand in deeper and deeper parts those interconnections.

I don't particularly need them to be divinely inspired. I will not tell you that I can say that they aren't divinely inspired. To me there is method. In addition to the method that can be approached and understood, there is elegance, there is beauty, there is fascination, there is wonder. A lot of humanistic terms that people from other traditions would also think about.

There is something quite spectacular to me in thinking that I can understand one of the systems that we talked about. Some of the smallest organisms that one could envision on a planet, little phytoplankton that sit at the base of the food chain, that when they go into their reproductive phase, when they bloom - they cell divide, on average, one cell division in 24 hours - that they are

producing numbers that are so startling in these blooms, something like 10 to the 23rd little single cells in a bloom.

That's so big you can pick them up in space. They self-shade. They actually affect the ability of underlying layers of the bloom to get enough light to be able to continue to be productive. But when the cells die and decay, they actually put particulates into the atmosphere that are nucleation centers for water droplets. They can actually create like their own little clouds and weather around them, which can stir the waters and reenergize the bloom.

There's something. I can understand it scientifically. It doesn't mean that it isn't still - I don't know - just startlingly beautiful at the same time.

**Dean McLennan:** I've been so struck at our conversations -- your sense of awe and wonder and the passion that you bring to your work. I think scientists are misunderstood as somehow being cold and calculating and logical and not having that sense of passion and awe and wonder, which obviously is also a religious orientation in many cases, although we can sometimes also be boringly logical.

**Professor Kennedy:** [laughs]

**Dean McLennan:** We have our own problems in that area. I think that is possibly an area where we can join together.

Another seems to me to be the obligation to work on critical environmental issues like global warming. Thank goodness we do have a rainy day today, but we are in the midst of apparently the most severe drought in 500 years of California history.

Here we have the ability on the one hand to do - and religion itself has the ability to do some great good in the world. You mentioned how your brother, as a priest, has often influenced you for the good in terms of your morality. There's a lot of that morality which derives from your Catholic tradition, which you've left.

On the other hand, religion has done enormous harm. We had, in the reading we heard this morning from Genesis, a sense of dominion that human beings somehow are to dominate and control the earth. Another way of hearing that reading is one which would say, "No, human beings are to be good stewards of the Earth, and to recognize how much we can affect it, and that we should affect it for the good."

Tell me a little bit about your sense of our ethical obligation in relation to the environment.

**Professor Kennedy:** You know, for 20 years now, Scotty, I've helped to create and run a program at Stanford that is an undergraduate and co-terminal master's program, called "Earth Systems." The heart and soul of this very interdisciplinary, undergraduate program is that we train students to think about not just the analysis of environmental problems, but solutions to those problems.

We train them to think about and embrace complexity. We want them, need for them to see that these are scientific problems. That they have a lot of basis in physics, chemistry, biology, and the Earth Sciences, but that they are also deeply human problems. That we need to understand political systems, policy separate from politics. We need to understand economics. We need to understand culture. We need to understand social motivation in responding, or choosing not to respond, to information that is in front of you. We need to think about communication, and ethics is certainly an enormous part of that, to help each of us.

If I'm going to send people out into the world as problem solvers, one of the most profound things that they can do is to see their own agency in solving problems -- and they may have a higher obligation as a result of having so much science knowledge -- but to help others to see the role that they can play.

This is a huge problem, it is bigger than any of us. Hopefully not bigger than all of us in terms of achieving a solution. It certainly does require a stance in which we stop saying, "When will they do something about it?" By definition, "I" am not a subset of "they," I am distinct from it. It utterly absolves me of any responsibility.

I need to be training students, and I need to run my own life in a way that says, "This is our problem. This is a shared problem. It is a science problem, but it is also a deeply moral problem." The potential consequences -- not potential, the consequences that we're seeing right now, and the worsening consequences we will see into the future for people on this planet, the planet itself, other species. They're simply not an acceptable outcome.

**Dean McLennan:** Now that we have some sense of areas of agreement, let's see if we can tease out some areas where each of us feel we really don't entirely know from our perspective, and then maybe some areas where we may disagree from the perspectives of religion and science.

I think both of us have already said something along the lines that we're not really sure what God, if there is indeed a God, really looks like. We are questioners in that sense.

We may also have some questions about how much science ultimately, in and of itself, is able to discover and explain. You've already mentioned the importance of the human dimension of morality, and commitment, and so on, in this arena. Is it fair to say those are a couple of areas where we really don't know? We're agnostic together, I guess.

**Professor Kennedy:** I believe so, yes.

**Dean McLennan:** In terms of the important questions we might disagree on -- do you think that faith-based knowledge and data based knowledge systems are compatible in any sense or are they really in competition with each other?

**Professor Kennedy:** I often tend to see them in my world as more of a progression. I think that all of us have faith-based systems, including scientists. In those faith-based systems -- I'm not a medical doctor, I'm not a neurologist -- if somebody offers me content knowledge that is deeply rooted in some science that it's not my own, I am, to some extent, accepting on faith that they have followed a given protocol, a given method that has been tested and reproduced.

I can move it from a faith-based system to a knowledge-based system, a data based system, if I so choose. To me that is the dividing line. I can, if I have time and desire, move and migrate myself toward, on the basis of data, forming an opinion, fostering that opinion. Where the faith-based versus the knowledge-based becomes problematic, is where we need to take action.

If we are only operating, for example, on global warming problems, environmental change problems, with a faith-based system without really trying to reach for the data and understand it more profoundly from a data point of view, from a projections point of view, anybody who pushes on that faith-based system, and throws out a little bit of information that runs counter to an opinion that you held very deeply, they can shake those foundations.

We need people to understand, to act in the best spirit of their faith and their morality. To also understand enough about the fundamentals of the problem and how to think about it so that that faith-based system isn't shaken by the least little vibration at its base.

**Dean McLennan:** To put it another way, maybe a bit more boldly, does the bible have anything to say to science?

[laughter]

**Dean McLennan:** You can say no.

**Professor Kennedy:** I don't know. I'm going to not plead the fifth, I'm going to plead ignorance. I really don't know, other than accepting in science the moral implications of our work. Thinking in a deeper way than just wanting to know.

For me, and this is very personal and I know many scientists don't share it, but I believe there's an obligation to do something with what you learn, particularly in a way that improves the average condition.

I also believe firmly in theoretical science for the sake of understanding a system. I would be first in line to support that. I don't know that I would know enough about the teachings of the bible to have an informed perspective on that interface.

**Dean McLennan:** If we now ask how can religionist, and agnostic or atheist scientists talk to each other and work together effectively, it does seem that one critical area is in action, as you've said. In trying to make a difference. But in love too if you will. You've always amazed me in your commitment to your students. In now being the faculty co-director of the Haas Center for Public Service.

There's a dynamic there. You're a very loving person in that sense of really caring about human beings, and ultimately about the environment. Maybe that's an arena where we can talk across science and religion differences is somehow through love?

**Professor Kennedy:** Love is a core value. I believe, and it is a belief system, in the transformative power of love. I believe that kindness matters in this world and that we can accomplish an enormous amount when you couple those with the power of understanding. When you come from a position of love in your explanation...I talk with students about this, commonly, when we're talking about fairly contentious aspects, politically contentious aspects of global change issues.

"How do I convince Uncle Ted?"

Well, maybe the first thing you need to do with Uncle Ted is to explore in yourself. Do I love Uncle Ted? Do I care about Uncle Ted? What common ground do I have with Uncle Ted?

There's a lot of common ground. He's your uncle. You played with him when you were a kid. You have the perfect foundation for a union, for a community. Rather than standing in an adversarial position, rather than going in with fists up but going in from a position of love, from a position of respect.

My mother used to have a phrase, "Kill them with kindness."

Going in from that position of kindness and love, rather than looking for the argument, and starting with common territory. There must be things that we share in common. How do we relate through that commonality to a point of affecting positive change on an issue? I think it is not only highly doable, it is critical that we find more ways to make that happen.

**Dean McLennan:** That's the final question for the two of us; What areas of cooperation are really most important for us between religion and science currently? Certainly, one of them would seem to be protecting science education in our schools and making sure that it's not confused with religion.

I mean there's a place, as you said, in your own school for religious education. But to assume that in our science courses that we need to talk about the Genesis about mythology about the origins of the universe is obviously problematic. Do you have suggestions how we might work together, in terms of science education?

**Professor Kennedy:** I think it is absolutely true that both religion and science have dominant roles in this. If you look at the sociological research, people are operating on a belief system with respect to global warming data. The two main groups that say they believe and trust, are religious leaders and scientists. There is inherently a shared obligation there.

Moving forward on that shared obligation, if you were a scientist, how do you reach people where they live? How do you make it real for them? I am perpetually talking about a problem that people can't see -- CO2 in the atmosphere. If I'm always framing it in the context of what's going to happen a 100 years from now, they don't care about.

If I'm trying to make it a priority in their day to day lives when they're leading very complex lives in dealing with parents who are aging, they're trying to manage their lives, they're managing their kids' lives. I have to find a way to make it salient. For many people, that saliency, where it most resides, is in spirituality.



I see many connection points for moving away from science speak toward, what a colleague of mine referred to, sidewalk speak. I love that!

How do you talk about what people can do today in their own backyard, in their own community? Not dumping it off on the governmental panel on climate change, or on what Obama and Congress are going to do, but finding ways in our churches, in our schools, to have conversations about a shared responsibility.

If we are a big part of the problem then by definition, we are part of the solution. What is that look like? How does one form community and inspiration around that? How does one put the message out there that rather than inspiring fear and the pull-the-covers-up kind of response, actually inspires love, affection, commitment, and a positive attitude about..."We can do this!"

**Dean McLennan:** That was wonderful. I really appreciate your willingness to talk with us publicly. We have an opportunity for those of you who would like, afterwards, to continue conversations over lunch. You have given us an understanding and a way of relating between science and religion that's more critical and important than I know. We all thank you very much for this.

**Professor Kennedy:** Thank you for asking me.

**Dean McLennan:** Let's rise now and sing our next hymn.

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