September 4, 2022 - SUNDAY SERVICE: SCIENCE & RELIGION

Speakers:
SUUS members Diane Stark and Scott Swenson
Rev. Peter Morales and Rev. Helen Lutton Cohen, selected readings read by Jere Armen

Diane Stark is a biomedical research scientist who received her Masters in International Development from UC Davis and her PhD from UC Berkeley studying the biology and epidemiology of viruses. She worked for 35 years in drug and vaccine discovery in the private sector. Now semi-retired, she has founded a social enterprise which promotes, through education and training, the importance of mindful social connection to brain development and physical health.

When I was 9 yo, Apollo 11 landed on the moon. We all had our eyes turned to the heavens. I thought a lot about the limits of the universe. What was beyond it? What was out there in space before the beginning? My best friend at the time was a precocious Jewish neighbor. She was the source of many of my early life revelations. The blinking red light on the water tower was not, in fact, Rudolph's nose. "Check it out", she said, "it blinks all year". So when she told me one day that Catholics have it all wrong, although I was raised Catholic, I started going to Temple with her to "check it out". Jewish services were a lot more fun than Catholic mass, held in Latin at the time. But it troubled me that there could be so many "one true religions" and "one true Gods". One day I just decided these things (beyond-beyond and God's) are unknowable. I moved on to perseverating on the natural, knowable world; to collecting pollywogs to watch them grow legs; and to my earliest unpublishable results: "The Relative Survival of Pollywogs Fed a Diet of Fruit Loops or Captain Crunch."

All these years later, I still have that same perspective on the supernatural. When I give talks to non-scientists about neurophysiology of thriving, I am inevitably asked "But what about spirituality?" The clarification of "spirituality" is often something that hazily orbits the supernatural; some force from beyond-beyond that can intervene in people's lives to help them transcend themselves to thrive; some force that can free them from woes, worries, feeling bad and behaving badly. I imagine a sort of celestial stage director, an ethereal puppeteer of good. Science doesn't preclude this. It just doesn't include this.

But science *does* give insight into, and guidance for, transcendence. To me, this *is* the spiritual quest: to transcend the limits of our human nature; to act as we hope to be; to be our best selves.

Neuroscience tells us that the brain does not install itself automatically like a computer app with an install button; rather, that experience installs the brain. And I mean this in a profound way. If you put a patch over a kittens eye at birth, when you take it off later, the cat will be blind in that eye. The eyeball works, but the part of the brain that processes signals from that eye will be missing. It requires the experience of light to connect up its neurons. So genes may provide the materials for construction of the brain, but experience is both the architect and the construction crew. Experience wires and continues to rewire each of our unique brains throughout life. As Steve Cole, one of my favorite social genomicists, has said: "Experiences are built into our bodies and brains, cells and DNA, on a moment-by-moment basis. *Plan accordingly***.**"

Neuroscience tells us that experiences become encoded in the quadrillion unique connections between 100 billion neurons in our brains, sculpting a uniquely personal neural network for each of us. This network runs the algorithms that determine which handful of signals coming into our brains will be ignored, which will be factored in, how they will be weighted, and what meaning they will have to us. They determine what comes into the conscious mind, how we feel, react and behave. Just like a smart algorithm, like Google, start typing in U-N-I and your brain will return "unicorns" or "Unitarians" depending on where you've been before. Neuroscience tells us that, *astonishingly*, the brain does this *in advance* of thinking, outside of conscious awareness. Conjure up a lemon in your mind. Is your mouth salivating?

Like the Taylor Webb images of deep space, of beyond-beyond, science gives us compelling evidence of the *limits* of the human mind: the illusion of knowing reality, of knowing anything for sure, no matter how true it seems to us; and the fragile flickering nature of free will. This is *scientific* insight that instructs my *spiritual* journey. It awakens me to compassion for myself and others. It enjoins me to question my subjective reality, my beliefs, what I think I know for sure. It instructs me to pause, to question my knee jerk subconscious reactions, and to take in more information. It tells me that, in essence, I can have a different experience than I am having.

But this same neuroscience also tells us that we are not just automatons, beast machines. We can weight the algorithms of the subconscious and sculpt the brain towards a better self, if we steer ourselves towards generative experiences; towards experiences that are life affirming, positive, restorative and empowering. Science may give insight into transcendence, but it is experience, like spiritual practice, that builds the capacity to transcend.

So, I find that science and spirituality go hand in hand. To borrow a metaphor from physicist William Lawrence Bragg, science and spirituality are only opposed as the thumb and finger of the hand are. It is an opposition by means of which we can grasp. To answer Jere's question for this reflection: "How does Unitarian Universalism intersect with my scientific training?" UUism implores us to seek wisdom from all responsible sources and allows for spiritual practice without the requirement of including the supernatural. And, it is a routine experience that I hope will weight my neural algorithms and drive me, when I am not at the wheel, to rise above the limitations of my human nature, to be better.

The thoughts of Peter Morales on "Science and the Search for Meaning." Morales was the former president of the UUA and is currently an editor of *The New Atlantis* magazine, in which this essay appeared in it Summer 2013 edition; it has been adapted from the original.

Before science, religion filled the vacuum created by ignorance and created stories to explain the truth about the world — myths about creation and humanity's origin. But over the long march of the history of science, humanity has sought to fill that vacuum, to learn more about the world and to discover how it works. Science is indeed a spectacular achievement. The scientific truths of life are amazing, beautiful, and awesome. But only we can decide how to react to them, how to apply those wondrous insights to our own lives.

"We affirm and promote a free and responsible search for truth and meaning," [we say as Unitarian Universalists.] It is perhaps surprising that a religious organization would hold as one of its deepest convictions the "free and responsible search for truth and meaning". After all, for many religions, truth, or at least what is true about the most important matters, is given by a set of sacred texts or traditions that members accept as a matter of faith. At least in this somewhat stereotypical view of religious thought, the truth about the highest or most important things cannot be sought — it is only given by authority. Scientific truth, on the other hand, is constantly changing. What people know to be true changes as new information comes to light and ideas are challenged by new findings. It is understandable, then, that religion and science have had a conflict or two over the years.

As Unitarian Universalists, we recognize that science and religion share a common wellspring. They both arise from the human need to cope with life, to make life comprehensible, controllable, and meaningful. Indeed, we are all scientists. We all search for knowledge about the world, a way to make sense of our experiences and to give our lives meaning. Sometimes we get it right, sometimes we learn that we were wrong. But our knowledge is never disinterested, as it always grows from our personal urge to make meaning of experience. We are scientists because we search for truth about our world.

Science is the discipline that can give us answers to the search for facts about the world around us. [The inquiry raises all sorts of questions,] but … we can answer them. We can gather evidence, study it, compare answers, and choose the answer that best fits our experience.

Science is based on a radically democratic way of knowing: scientific truth is based on things we can all experience, not on private experiences, accessible only to a gifted few. Science does not ask us to take its conclusions on faith or on authority. Science is about what is objective and repeatable; scientific truth needs to be equally true for everyone everywhere.

But Unitarian Universalists affirm the search for both truth *and* meaning. If we are scientists in search of truth, we are also theologians in search of meaning. While science and religion both arise from our need to cope with experience, science and religion are responses to fundamentally different questions. Science can help us discover the truth about our world, but religion can help us give that truth meaning. . . . There is a human hunger for meaning that science does not address. After we know all there is to know about the world, we still must answer the question: “so what?”

That hunger for meaning is the source for the renewed interest we have witnessed in recent decades in ritual, in spiritual practices, and in religious imagery. Religion, at its best and most profound and most enduring, has been humanity’s way of collecting and transmitting wisdom about the meaning of life from one generation to the next.

As Unitarian Universalists, we do not merely accept truth and provide the space for people to create meaning. We actively *search* for truth and meaning, holding to a principle demanding action and not simply providing a concept available for passive assent. Our view of truth may change, the meaning of our lives may be different, but as long as we are actively, responsibly seeking both truth and meaning — and allowing others to freely do so as well — we are living into our best selves. We are all scientists. We are all theologians. We are all in this together.

Scott Swenson is a physician and research scientist. His medical training is in adult internal medicine and gastroenterology with special interest in diseases of the liver. He also has a PhD in Biomedical Science, both degrees from the University of Cincinnati, which is where he met his wife, Jennifer.

After he completed his residency and fellowship training at Yale School of Medicine and YNHH, he stayed on faculty for several years in the Section of Digestive Diseases. He still holds a volunteer faculty position in the outpatient liver clinic at the West Haven VA.

In 2013, his career shifted to design and execution of clinical trials for new drugs to treat rare diseases. He now works for Alexion in New Haven, where they are developing a new treatment for Wilson disease, a rare genetic condition which causes copper to build up in the liver and brain.

Good morning, thank you for the invitation to share my thoughts.

In my work as a medical research scientist, I am expected to generate, evaluate and defend objective evidence. The standards are high. I know better than to claim anything is true without a body of convincing proof. But I also know and humbly accept that some things cannot be proven and may not ever be known.

When I was a kid, I was instinctively curious about everything. Growing up on Cape Cod in the 1970’s, I spent a lot of time outdoors at the beaches and in the woods. Both of my grandmothers lived nearby so I spent a lot of time with each of them, always separately. We enjoyed similar outdoor adventures, but they were just about opposite in their beliefs about how these magnificent places came to be and how we should live our lives in them. Only later did it dawn on me that they were competing with each other for my attention. My maternal grandmother appeared to be unconcerned about the mysteries of creation and seldom, if ever, attended any church. She never mentioned God's will or judgement but was much more interested in preserving her cherished natural places for future generations. I remember she kept Rachel Carson's book, Silent Spring, on her shelf and warned anyone listening about the global danger of accumulating pollution. She hated to use disposable plastic because it would never decay and she refused to pave her driveway because it would block the rain from being absorbed into the ground. At the time, we didn't know anything about global warming but I'm sure she would have had a strong concern about that.

On the other side, my paternal grandmother held traditional, conservative Catholic beliefs. She believed without any hesitation that God was THE supreme being who created heaven and Earth. Her primary concern was that we must profess our unconditional belief in God and the divinity of Jesus, the son of God. Biblical rules had to be followed so that we would be welcome in heaven after we died. She was deeply disappointed that I was not being raised that way, so she tried to intervene by sneaking me off to mass whenever I visited her on the weekend. I specifically remember challenging her unshakeable belief in the power of the trinity and miracle of holy communion because none of it was visible or made any sense to me. Body and blood of Christ? No thanks! She really did not appreciate being challenged on such serious issues by a skeptical young boy, but she prayed for my soul.

My parents were caught in the middle. My father laid low and refused to have any part in my religious education. My mother attended a congregational church, which was her preferred choice and sort of a compromise between the extremes presented by her mother and mother-in-law, so that path was chosen for me. I went through the motions of religious education in a UCC church because I didn't really have a choice.

I never believed in any form of religious mysticism. I did not accept the concept of God in the form of an all-powerful man who created heaven and earth or judged your worthiness of heavenly afterlife based on your personal commitment to worship him. Once I was out of the house, I was done with all that and perfectly content to never come back to it. As a young adult, I came to believe that everything we see and know must have a rational explanation within the limits of physics, chemistry, time and space. That doesn't mean we have the capacity to know and prove everything. The wonder of it all was, and still is, enough for me. The warmth and energy of the sun falling on the land and water gives us life. It seems like a miracle that we are here, alive as humans right now, on this earth. Are we to believe this all just happened as a consequence of physics, chemistry and statistical probability without any instruction or direction from a supreme being?

Sure, why not? Does there have to be a god to explain the really big questions like how was the universe created and what happens when we die? Not to me. I guess I would describe myself as a humble agnostic. Having so many great unsolvable mysteries makes life more interesting. I won't go so far as to declare myself an atheist, because I cannot disprove the existence of a creator god, or really any god, and I am OK with that. I view the great force of our lives flows from the energy of the natural world and the relationships we form. Recognizing and embracing the inter-related web of life – makes sense to me!

I believe that no supernatural explanation is required for all the big existential questions, yet there is mind-boggling wonder in everything we can see and know to be true. Only recently, I learned that there is a suitable name for that – pantheism. "Pan" means everything, theism refers to "god." In this context, everything is "god" with big air quotes. Everything inspires awe and wonder. Everything that seems miraculous is real, but beyond our comprehension.

It's not like I'm the first to think about this. No doubt, you know about astrophysicist Carl Sagan's attempts to make sense of our place in the great cosmos. In preparing for this reflection, I learned that Carl Sagan and Albert Einstein shared similar beliefs rooted in this notion of pantheism – that god is not a person or even a thing but is reflected in all the observable truth about everything. This is not to say that either of them were atheists.

On atheism, Sagan said this:

An atheist is someone who is certain that God does not exist, someone who has compelling evidence against the existence of God. I know of no such compelling evidence. To be certain of the existence of God and to be certain of the nonexistence of God seem to me to be the confident extremes in a subject so riddled with doubt and uncertainty as to inspire very little confidence indeed.

Similarly, Einstein said, *"The human mind, no matter how highly trained, cannot grasp the universe. We are in the position of a little child, entering a huge library whose walls are covered to the ceiling with books in many different tongues. The child knows that someone must have written those books. It does not know who or how. It does not understand the languages in which they are written. The child notes a definite plan in the arrangement of the books, a mysterious order, which it does not comprehend, but only dimly suspects. That, it seems to me, is the attitude of the human mind, even the greatest and most cultured, toward God. We see a universe marvelously arranged, obeying certain laws, but we understand the laws only dimly. Our limited minds cannot grasp the mysterious force that sways the constellations."*

On these heavy topics, both Sagan and Einstein said they were influenced by the writings of Baruch Spinoza, a 17th century Dutch philosopher who publicly rejected orthodox Jewish mysticism in favor of a rational and objective view. Spinoza's notable publication on this subject was called "Ethics" and was considered heretical for challenging the most basic dogma of the Abrahamic religions.

Spinoza dared to write,

God is not a person who stands outside of nature
There is no one to hear our prayers, or to create miracles, or to punish us for misdeeds
There is no afterlife
Man is not God's chosen creature
The Bible was written by ordinary people
God is not a craftsman or an architect, nor a king or a military strategist who calls for believers to take up the Holy Sword.
God does not see anything, nor does he expect anything.

He does not judge. He does not even reward the virtuous person with a life after death.
Every representation of God as a person is a projection of the imagination.

Wow! I think you can imagine how this went over in 1677!

However, despite all this, remarkably, Spinoza did not declare himself an atheist. He insisted that he remained a staunch defender of God – meaning his interpretation of god. Spinoza's God was indistinguishable from what we might call nature or existence or a world soul: God is the universe, and its laws; God is reason and truth; God is the animating force in everything that is and can be.

Unitarian Universalism allows for and encourages us to express different interpretations of God, including none at all. We can easily find inspiration and spiritual meaning from observable truth. As a scientist, I try to define what we know and don't know - define a hypothesis and test it. When new information comes along, we should reconsider our understanding. That can and must grow and evolve as new observations drive new interpretations. We need not be fixed to dogma of any kind. We need not disregard what we see with our own eyes or what we learn from our experience. How wonderful and reassuring! I would not have it any other way

The helix nebula or "Eye of God" is a symbol of pantheism.

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An essay by Helen Lutton Cohen, the minister emerita of the First Parish in Lexington, MA, which she served from 1980–2002. She is a life-long Unitarian Universalist and the daughter of a research chemist and history teacher. She calls her essay "Science and Religion: A Unitarian Universalist Perspective."

Stem cell research, reproductive technology, cloning, death with dignity, ever faster and more complex means of communication—the successes of science help us to understand ourselves and our world and make many new things possible, but they also challenge our sense of what it is to be human beings, our ethical understanding, and our priorities. Though the popular media often presents these questions as science vs. religion, Unitarian Universalists have historically viewed science and religion as compatible.

In order to understand ourselves as a religious movement, to know our roots, we need to understand how vital to its formation this openness to science and all new knowledge was. Our movement was founded in the context of a growing curiosity and optimism about the world. Scientist and theologian Joseph Priestley, one of the British founders of Unitarianism, said, "Let us examine every thing with the greatest freedom, without any regard to consequences, which, though we cannot distinctly see, we may assure ourselves will be
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such as we shall have abundant cause to rejoice in. . . . Distrust all those who require you to abandon [reason], wherever religion is concerned."

But even for nineteenth-century Unitarians and Universalists, there were questions about the proper use of science: Would it destroy religious faith? Does it neglect or dismiss the spirit? Can its discoveries undermine as well as support human morality?

The great Universalist minister Clarence Skinner wrote in 1947, "Righteousness must be founded on truth. It must square with reality. It must harmonize with what we know of the universe."

Science cannot be our religion. We need all our ways of knowing—love, reason, experiment, history, psychology, ethical understandings developed through human history—to figure out how to live our lives. We need them all to decide if something is good or bad, whether it is done in the name of science, religion, patriotism, or any other worthy but limited allegiance.

One meaning of Unitarianism is the belief that all that exists is ultimately one, whatever form it takes: matter and energy, body and soul, mind and heart, all living and non-living things, deduction and intuition, emotion and intellect, love and reason, science and religion. We may prioritize our loyalties by the things we feel closest to, but then we use our reason to remember that we are all one. The Big Bang, while we cannot claim it as proven scientific fact, is a metaphor that harmonizes with a belief in unity.

Universalism entails a belief that everything belongs. Science has uncovered enough about genetics to show us that we belong together within the human family, among primates, among all living things, among the stars. We are at once so small and so securely held by and connected with a vastness beyond our comprehension. I felt as a child, and I feel now, the attachment between me and each thing I encounter. In some sense, I love the whole world. God is in the details. When we live in the world with this understanding, there are few simple answers and fewer absolutes. We must be ready to open our minds and hearts to change, however convinced we are. We must also be ready to act, according to our best understandings and with humility.

Science and religion together reveal to us a world of wonder. They make us grateful to be part of it, even in the face of the fear, pain, loss, and evil that are also part of it.

So it is that the Unitarian poet minister Robert Terry Weston wrote, at the end of his poem on the evolution of the universe, “This is the wonder of time; this is the marvel of space; out of the stars swung the earth; life upon earth rose to love. This is the marvel of life, rising to see and to know; Out of your heart, cry wonder: sing that we live.”

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