**Sermon**: “Embracing Unknowing” by Rev. Andrew Millard

Next year, I turn fifty, but I don’t need the calendar to tell me I’m getting old. Apparently I’ve reached that stage of my life where I can hurt myself in my sleep.

For the last few months, I’ve been seeing a doctor — and now I’m in physical therapy — for what has been diagnosed as a “frozen shoulder”. My case isn’t as bad as it could be, but it does prevent me from lifting my right arm all the way up or reaching very far behind me. When it was developing, it could get pretty painful, but a steroid shot helped a lot with that, and it only hurts now if my arm gets over-extended or jolted.

Now it’s just a matter of waiting. I have some stretching exercises to do, to prevent it from getting worse and to help restore as much range of motion as possible once my shoulder “thaws”, but that’s about it, because there’s no clear cause of frozen shoulder. My sister actually had it a few years ago, but there’s no known genetic component, and when it comes to one of the more common factors amongst people who get it, well, neither my sister nor I are post-menopausal.

It’s one of those disorders and diseases that are termed “idiopathic”, which basically means that the body just decides to suffer all by itself. Unfortunately, I was already familiar with the term: I have known three people who died of an idiopathic lung disease, including my father-in-law.

Still, I appreciate that doctors are willing to admit when they don’t know something. They’ll make the most of what they do know, of course — admitting you don’t know is hardly the same as giving up — but as much as we want to know what is happening and how it is happening and, perhaps most of all, why it is happening, sometimes we need to be honest that we don’t.

There’s actually a lot more of this in the sciences than we’ve allowed ourselves to be led to believe.

I remember in high school learning about the kidney and all of the different parts of the organ that make it filter the blood. I learned that it all starts with a million of these tiny networks of blood vessels in each kidney. The teacher explained that such a network of blood vessels is known as a glomerulus, and I thought to myself, “Aha! This name means we know how it works!” And then the teacher went on to explain that the name means “little ball of yarn”, because when it was first seen under a microscope, that’s how this network of tiny blood vessels in the kidney looks.

I fell for this again a few years later, learning about the chemistry of metabolism in college. When our cells consume the sugar glucose, the first step is to break each molecule of glucose into two molecules of pyruvic acid, which then goes on to fuel all sorts of other chemical reactions that power our bodies. Since pyruvic acid is so important, I again concluded that the name told us something about what it was and how it worked, and again I was wrong. The professor told us that pyruvic acid was so named because it was first found in burned grapes.

Names are important, yes, but they're not magic. Just because we choose to give something a certain name doesn't mean we actually know anything about it.

Of course, it's entirely natural that we want to know and understand. Our brains have evolved, from reptiles to mammals to primates to humans, over millions of years, to latch on to patterns in what happens around us and to us, from realizing that eating food that smells a certain way may make us sick, to catching a ball by essentially solving a second-order differential equation in our heads. The simple fact of the matter is that if we're better at understanding and anticipating the world, we're more likely to survive in it.

The only problem with this ability is that when we're so good at finding real patterns, we're also good at finding patterns that aren't actually there. Sometimes this is fun, such as when we look up at clouds in a bright sky and see the shapes of animals, but sometimes it's not.

I knew a professor of psychology who once assigned his students some homework for extra credit, as follows. Each student was to find a quiet time when they could tune their television to a channel with no signal and watch the "snow" on the screen — this was before digital TV, so I don't know if this can even be done now — and then the student was to write a paper on what they saw. The professor told me that some of the students said, in their papers, that they saw some shapes that came and went; some said that they didn't really see much but the noise; and some admitted that they fell asleep. Some of them didn't hand in papers, which was odd because that's all they had to do to get the extra credit; when the professor asked why, those students explained that they had been so freaked out by what they saw that they didn't want to have anything more to do with it.

Even when we experience a real pattern in what happens around us and to us, it doesn't means we'll be able to know or understand how or why, but that doesn't stop us from trying. The so-called scientific process is really just a slightly more formal version of what we're all doing all the time anyway: we try to come up with a reasonably simple explanation for what we've observed, and we stick with that explanation until we find something it can't explain and/or we come up with an explanation that does better. That's all science is, only with math and more expensive equipment and government funding.

That was something I tried to get across about twenty years ago when I was dragged into a debate over evolution and creationism.

I was at UC San Diego at the time, and a student group was formed to promote what was called "intelligent design". This is another iteration of creationism, only using scientific language to try to make its case rather than, say, Biblical literalism. One of the favorite scientific-sounding phrases of the proponents of intelligent design is something they called "irreducible complexity": some level of evolution through natural selection happens on a small scale, but if something is too big and complicated to have evolved

naturally from a simpler form, then it must have been designed (and created) that way by some intelligence. One of the common claims, for instance, is that the eye is too complex to have evolved. The combination of nerves, sensory cells, muscles and lens tissue in the eye is too complex, goes the claim, to have evolved piece by piece over time and thus the eye must have been designed from scratch.

There are some problems with this.

First, and assuming a genuine case of irreducible complexity, the implication of intelligent design is always that the intelligent designer is the God of the Bible. None of the other 2,869 deities (mentioned by Ricky Gervais in Rebecca's reflection) are considered, nor aliens, time travelers or any other possible candidates.

Second, assuming the eye was designed, the being who designed the human eye was either a sadist or an idiot. The human eye has design flaws, serious ones. It is not designed intelligently. The optic nerve passes through the back of the eye, meaning there's a blind spot that the brain has to work to make up something to fill. Furthermore, the same "design" allows the retina to detach from the back of the eye. On the other hand, the octopus eye doesn't have any of these problems, so I guess the octopus eye was designed more intelligently than the human eye. Perhaps we should be looking for an octopus god as intelligent designer? Maybe it's Cthulhu, which would explain a lot.

Third, and most relevantly, no proposed case of irreducible complexity has actually been shown to exist. Proponents of intelligent design have asked, for instance, what good would half an eye be? To which the response of biologists has been that half an eye is still more useful than no eye at all. Simple evolutionary pathways have been suggested, in fact, that go from mere patches of light sensitive cells to progressively more useful and complex and eye-like structures, and at no stage does natural selection fail and require the intervention of an octopus god.

Now it was at one of the debates hosted by the intelligent design group at UC San Diego that I first heard the term "god of the gaps". Rebecca talked about this in her reflection, and I heard about it in much the same way from someone who pointed out that this was what the people promoting intelligent design were doing: if they didn't know or couldn't imagine how something could have happened, their answer was "G-d did it." The problem with that is that when any of the gaps in our knowledge or understanding get smaller, then G-d gets smaller, too.

Of course, all of this took a big turn a few years later when the Kansas State Board of Education decided to allow the teaching of intelligent design as an alternative to evolution in public school science classes. This wasn't the first time that Kansas or any other state had tried to allow creationism to be taught in school, and it probably would have gone the way of their previous attempts, except that someone by the name of Bobby Henderson wrote an open letter to the Kansas School Board.

Mr. Henderson began, "I am writing [to] you with much concern after I read of your hearing to decide whether the alternative theory of Intelligent Design [should] be taught along with the theory of Evolution. I think we can all agree that it is important for students to hear multiple viewpoints so they can choose for themselves the theory that makes the most sense to them. I am concerned, however, that students will only hear one theory of Intelligent Design."

Mr. Henderson continued, "Let us remember that there are multiple theories of Intelligent Design. I and many others around the world are of the strong belief that the universe was created by a Flying Spaghetti Monster. It was He who created all that we see and all that we feel. We feel strongly that the overwhelming scientific evidence pointing towards evolutionary processes is nothing but a coincidence, put in place by Him."

My favorite part comes a little later in Mr. Henderson's letter. "Some find that hard to believe, so it may be helpful to tell you a little more about our beliefs. We have evidence that a Flying Spaghetti Monster created the universe. None of us, of course, were around to see it, but we have written accounts of it. [M]any people claim our beliefs are not substantiated by observable evidence[, but w]hat the[y] don't understand is that He built the world to make us think the earth is older than it really is. For example, a scientist may perform a carbon-dating process on an artifact[ …] and infer that this artifact is approximately 10,000 years old[.] But what our scientist does not realize is that every time he makes a measurement, the Flying Spaghetti Monster is there changing the results with His Noodly Appendage. We have numerous texts that describe in detail how this can be possible and the reasons why He does this. He is of course invisible and can pass through normal matter with ease."

And then there's the end of the letter. "I think we can all look forward to the time when these three theories are given equal time in our science classrooms across the country, and eventually the world: one-third time for Intelligent Design, one-third time for Flying Spaghetti Monsterism, and one-third time for logical conjecture based on overwhelming observable evidence. Sincerely Yours, Bobby Henderson, concerned citizen."

When he received no reply, Henderson posted the letter on his website, and then it went viral. He also published the significant amount of hate mail, including death threats, that he received. Henderson has received tens of thousands of emails on the Flying Spaghetti Monster, of which about ninety-five percent have been supportive; the other five percent have said he's going to hell.

When it comes to competing ideas about how the world works, scientists often use a heuristic known as Ockham's Razor. This basically says that, all other things being equal, the simplest explanation is the best. Note that this isn't the same as saying that the simplest explanation is right. Ockham's Razor isn't a meta-law that helps us find the truth; rather, it's a warning against making too many assumptions, and a reminder that simpler explanations are easier to test.

For example, both Newton's laws and Ptolemy's epicycles can explain the observed orbits of the planets to a very high degree of accuracy. Whereas Ptolemy's epicycles require a lot of otherwise arbitrary numbers to be figured out from observing those orbits and then plugging them back in, Newton's laws are conceptually simpler and connect the numbers it needs to physical quantities, like the masses of the Sun and the planets. Furthermore, Newton's laws can be used to predict the motion of any object, from a ball thrown into the air to a satellite launched into orbit around the Earth, which Ptolemy's epicycles cannot do until after the fact. So, Ockham's Razor says that Newton's laws give us the better explanation.

Or in medicine, a version of Ockham's Razor is known as the Zebra: doctors should reject exotic diagnoses when more common explanations work, as in "When you hear hoofbeats, think of horses, not zebras".

The irony, I guess, is that Ockham, for whom the Razor is named, was a medieval monk. William of Ockham was an English Franciscan, a scholastic philosopher and an influential theologian of the fourteenth century, and he used the Razor to defend the idea of miracles. Actually, philosophers going as far back as Ptolemy and Aristotle had made much the same points about simpler explanations being better, but Ockham used the Razor a lot, and did so very effectively. For Ockham, G-d was the only truly necessary entity in existence; everything else was contingent.

Of course, what is necessary to the worldview of one person may not be to that of another. There's the story, for example, of an exchange between the French astronomer and mathematician Pierre-Simon Laplace and Napoleon. Napoleon was praising one of the science books that Laplace had recently written, when Napoleon asked how it was that the book made no mention of G-d. Laplace simply replied, "I had no need of that hypothesis."

To my mind, there are two sides to Ockham's razor: on the one, keep it simple; on the other, don't make it more complicated than it needs to be. While this applies to trying to explain what happens around us and to us, I think it also means that sometimes we can't explain something — for the time being; or maybe forever — and it's okay to be with that, rather than trying to force an explanation that might actually make things worse.

After all, there is a natural human impulse to understand the world around us, but just because we want to know everything doesn't mean that we can. Our brains are so good at finding real patterns, we're also good at finding patterns that aren't actually there. We're also good at naming things, but just because we choose to give something a certain name doesn't mean we actually understand it. What if there are some things we cannot understand, whether now or ever?

Though we usually think of religion as providing important answers to the big questions, such as those asked by our children a few weeks ago, most world religions have a mystical tradition, where the emphasis is on transcending the limits of what we know by embracing unknowing. For instance, one of the best-sellers of fourteenth-

century Europe — not long after Ockham wielded his Razor — was *The Cloud of Unknowing*. It's an anonymous work of Christian mysticism, a manual for those who would seek the divine, not through knowledge, rational thought and the intellect as William of Ockham did, but through contemplation, motivated by love and open to mystery. *The Cloud of Unknowing* has been described, in fact, as giving "a Zen-like view of Christianity."

And that description is not particularly surprising, because it seems to me that, no matter in which religion you start, if you go far enough into mysticism, you end up in pretty much the same place. It's not that all religions are saying the same thing; it's more like, all religions' mystical traditions are *not* saying the same thing. And it's not just religion. I've read some Hindu descriptions of ultimate reality that sound a lot like some of the foundational ideas of quantum physics.

Unitarian Universalism has its own approach to that mystical center, too. Implicit in our Fourth Principle, the free and responsible search for truth and meaning, is that — sometimes — taking responsibility for our searching means that we need to be honest that we don't know, that we may never know, and then our task is to let go of our need to know and accept the mystery.

This, in itself, is freedom. As Rebecca put it, "I *love* the image of an infinite cosmos that we likely *cannot* understand." "I thrill to the vast cosmos, to its sheer ineffability — to what we cannot know and cannot say." There's freedom in giving up the pretense of perfect knowledge, for it allows us to really be present to our lived reality rather than get distracted by what we think the destination is or ought to be. And it's okay to have doubts, and to voice those doubts and to simply be with them. Our challenges don't go away, of course — embracing unknowing isn't the same as being willfully ignorant — but in distancing ourselves from what we think we know, we're more likely to be curious, to be able to ask the right questions that will help us with our challenges. As we like to say in Unitarian Universalism, to question *is* the answer, because it's okay to doubt that any answer is the capital-A Answer. To anyone who says that they have answers, we can say that we have questions, from wondering about our purpose in life, to asking if the human eye really was designed by an octopus god.

So, cherish your doubts, and keep asking questions. May it be so.