

Sermon – Mike Liemohn

The Intersection of Faith and the Scientific Method

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For those that don't know me I'm a professor in the Climate and Space Sciences and Engineering department at the University of Michigan. I'm on the space side of that tortuous title, pushing human knowledge about what we know regarding space weather. Things like the aurora and the Van Allen radiation belts. How many of you have seen the northern lights? Occasionally we get to see them here in southern Michigan.

With that big-word intro, I'd like to start this off by getting something out of the way: **I'm wrong a lot.** And, more importantly, I am okay with being wrong a lot.

You think it's marriage that's gotten me to this state of mind, but no. I'm wrong there, too, of course. Let me tell you a story from early in our marriage when I did something wrong. I was emptying the dishwasher and, after putting away maybe half the glasses and cups, realized that the dishwasher had not been run yet. Yeah, that. I think I went through all 5 stages of grief in the span of about 30 seconds. Yes, there was denial – no, it's clean, just this one cup is bad; there was anger – who loaded it and didn't start a cycle?!; there was bargaining – they aren't *that* dirty, right? I can just leave them; there was depression – I am incompetent at adulting and we're going to get sick because of me; and finally, acceptance – I can undo this but I have to check everything in this cupboard because my short-term memory had already cleared out and I didn't remember which ones I just put on the shelf.

And, throughout this rapid-fire grief process, there was the lingering emotion of embarrassment – I'm such an idiot, because I knew it was *me* that didn't start the cycle the night before, hoping to fill that last open space in the rack with *one more plate*.

I give a lot of credit to Ginger, my wife, about many aspects of who I am, but being okay with being wrong is from something else – it is from my career in science.

Science doesn't get mentioned very much in most churches. Some churches take a rather hostile stance towards modern science, while most others simply ignore it, never really mentioning it. Not this church, though. Ken and Emily did something bold when they founded this church. They put science right there alongside Scripture. Do you know this little fact about this church? Yeah, when Blue Ocean Faith Ann Arbor first formed, the publicity poster had this slogan on it: "A Jesus, Spirit, Scripture, Science, All-People Friendly Church." This is still on our website, as the first line on the "Our Story" page. Today I'd like to tell you about what it means to me to be a member at this kind of church, one that is friendly to both Scripture and science.

But first, this is also an environmental pitch, so, how many of you are familiar with Dr. Seuss' children's book, "The Lorax?" Here is a sad but powerful quote from it:

" 'Yes, I am the Lorax who speaks for the trees, which you seem to be chopping as fast as you please. But I'm also in charge of the brown Bar-ba-loots, who played in the shade in their Bar-ba-loot suits and happily lived eating truffula fruits. Now, thanks to your hacking my trees to the ground, there's not enough truffula fruit to go 'round! They loved living here. But I can't let them stay. They'll have to find food, and I hope that they may. Good luck boys! Good luck!' And he sent them away."

When is the first time you remember hearing about this book? For me, it was in grad school. Yeah, I don't remember ever reading or even hearing about "The Lorax" as a kid. Ginger introduced me to "The Lorax." Being an advocate for the environment is a big part of who she is, and when she learned that I had never read "The Lorax," she put it in my hands at our next date. Ever since then, this book had a profound and lasting influence on my understanding of Christianity – we are called to be advocates for the environment.

Some back story – let me give you the really quick version of my journey with Christianity. I grew up Lutheran, going through the motions of Sunday School and then confirmation classes all through junior high. I then turned away from Christianity, declaring myself an atheist by late high school. I was learning more about science and the process of scientific discovery, and I lumped Christianity right there with Greek mythology. I read Genesis literally, and if it couldn't get the physics, geology, and biology right, then I couldn't trust the rest of the book. I, like many other lovers of modern science, had the notion that future advancements would eventually wipe out the need for God. For me, God was relegated to the gaps in the fabric of the big "How Things Worked" quilt and eventually those holes would be filled with new discoveries. I had reached the conclusion that God was only needed to explain how things are the way they are in the world, and once we figured them out for ourselves, we wouldn't need God. I didn't have everything figured out, and neither did science, but I saw this eventual future and decided to fast-track the removal of God.

But I didn't stay that way. I eventually declared myself wrong and, in college and my young adulthood, I slowly came back to Christianity. My introduction to "The Lorax" happened right in the middle of this progression.

So, why the shift back to Christianity? **Well, I applied the scientific method to my faith.** The scientific method in a nutshell:

Step 1: you see something strange, something that you cannot explain.

Step 2: look it up. Perhaps someone else has already explained this strange thing. If you find a reasonable answer, then you are done. If not, then proceed to...

Step 3: guess at what the answer or explanation might be. Yes, *guess*. This is what you call a hypothesis. Then, ...

Step 4: make up an experiment to test your guess. This could be analytical, numerical, or observational, hopefully something controlled and repeatable, but in any case, something that tests the guess. If it works, then great! Move on to...

Step 5: publish and claim the credit for discovering that new understanding. If not, then switch over to ...

Step 6: throw out the guess and make a new one. Yes, *toss it out*. You have shown yourself that your guess was wrong, so don't cling to it, but simply accept the fact that your guess was wrong, go back to Step 3, and make a new guess.

Making a living out of applying the scientific method means that you are *going to be wrong with your guess*. *A lot*. I feel stupid and inadequate, *often*. Depression is common among graduate school students because this is usually the first time when these smart people are wrong and perhaps don't know how to make it right. I sometimes have to set aside figuring out the physics behind that strange thing because I can't make the right guess at what it could be. Or, sometimes, I set it aside because I cannot devise the right experiment to test my guess. Sometimes I am shown to be wrong by others, later, when new observations or thinking arises. As a professional researcher, *I have to be okay with changing my mind*.

On Christianity, I did just that. I changed my mind, deciding that I wanted it back in my life.

First, it was the "strange thing" of close friends being Christians, even in the don't-got-time-for-church world of college. It was seeing that these people were often the nicer ones in the group, not the selfish or arrogant jerks. I wondered what made them the way they were. Could it be Christianity? I wanted to find out.

Second, I was learning more about the physical world and realizing that but some science is *really* weird. Take quantum mechanics, for instance. It is the physics of really tiny things, and there is this thing called Heisenberg's Uncertainty Principle, which states that we cannot know a tiny subatomic particle's location *and* velocity within some combined error. If we know one of these values to a very high precision, then we cannot know the other to that same precision, it must have a larger error bar. There is a joke in here somewhere... "I don't know what happened to Heisenberg. He was so certain of himself yesterday." Seriously, though, it means that we cannot know the exact solution to the equations of quantum mechanics, only a spread of many possibilities. Worse yet, in the lab, when trying to measure aspects of these tiny particles, the answer depends on *how* we measure it. This is the whole "is light a wave or a particle?" conundrum. The answer is "yes". Both.

But, the *bigger truth* I learned was this: there were things out there that couldn't be explained by science. I started to think that maybe there are aspects of human nature and interaction that are beyond a physical explanation.

With these strange things, I applied the scientific method. I talked to many of my fraternity brothers, thank you Pikes of Rose-Hulman, and a couple of childhood friends, especially Mike Fulton and Kristi Riechman Mundt. Ginger really brought me back to the point of seeing that I could embrace Christianity without forgoing my burgeoning liberal political thinking.

Also, I read books. Like “The Lorax” but we’ll come back to that one. I read some Young-Earth Creationist books and they really didn't mesh with my understanding of the world and of God. For instance, Young-Earth Creationists explain astronomical red-shift, which is how we date the age of the universe to be about 14 billion years old, by claiming that God put the red-shift into the universe like that. Yeah, that God *put* red-shifted light into the universe, everywhere between Earth and the stars, to *trick us* into thinking the universe is old. That is not compatible with a benevolent God, that's a God intentionally sewing confusion. I don't buy it.

I also read sections of the Bible, hoping for clarity. At first, it didn't spring on me like I was hoping. Things still didn't make sense, because I was still trying to take the Bible as all or nothing, and in modern context only. I needed help. I needed a guide.

One guide was Hugh Ross, an astrophysicist who reconciled Genesis with science, and he became a Christian in the process. He has several books on this, and I’ve read a few of them. Not a perfect match, in my view, but plausible enough that I could understand how Genesis was written the way it was.

Finally, my mental breakthrough as I read something, I don't remember exactly when or the exact title, **that finally woke me up to *this point*** – the history of how things were created is *not* the point of Genesis 1 – instead, **the point might be that God called creation "good."** The Bible uses this wording, "And God saw that it was good," *6 times* in the first half of Genesis 1. Six times! This is not a subtle point, but one that's plainly visible for any reader. I don't know why I didn't see that earlier. Perhaps I didn't want to.

This led to a new revelation for me – the Bible didn't have to be factually correct. Again, Ginger brought me a long way down this path. She reads *a lot* of fiction books, and many of those she reads focus on deep issues about human nature and the tough dilemmas we face, making readers really think about their worldview on controversial issues. The Bible has some parts like this too.

For example, there are many Bible scholars that think the Book of Daniel is a work of fiction, a coded narrative commenting on the authoritarian regime of the day. I tend to believe them. So, yes, to me, Shadrach, Meshach, and Abednego *did not* exist, let alone get tossed into a furnace; Daniel, also didn't exist, let alone get tossed into the lion's den. But that doesn't mean we should toss out the Book of Daniel. We can learn a lot from this book about how we should treat those that are different from us. Shadrach, Meshach, and Abednego didn't bow down and worship the local king as a god, like everyone else, and Daniel's crime is similar. It is also a story about the poison of jealousy, and a warning to steer clear of rivalries. It is also a promise of God's love in the face of adversity. When times are tough, these stories remind us that we have an advocate. We learn all of this not because the stories are absolutely true, but because they *reveal a truth* about how people should live their lives.

So, I stopped reading the Bible for "how" answers about physics and instead asked "why" questions of it about human nature. Specifically, this question: why does God want us to know

this story? Thank you Pastor Judy Shipman. The accompanying questions, for me, are these: who wrote it, to whom was it written, when was it written, and what are the circumstances at that time for both writer and reader? Yet another question is this – what's around it in the Bible? *Always* read the Bible *in context*, with itself and the original times, so that it can be understood properly for our times.

Somewhere along the way I formed the hypothesis that it is better to be a believing and practicing Christian than not. The experiment I devised was living this out in my everyday life. Yes, I experimented on myself, which is not exactly a controlled, repeatable experiment, but it's something. This experiment, by the way, is still going on, and so far the evidence weighs in favor of my hypothesis. What is the evidence? Strong, deep friendships. An awesome family. I love my job. I love my life. I'm a positive person because I love who I am and the life around me.

Another aspect of having a scientific approach to Christianity is that **science involves changing your hypothesis**, your guess, when confronted with credible contrary evidence. Throughout this experiment, I have continuously adjusted my "Christianity is good" hypothesis, especially my working definition of what it means to be a Christian.

For instance, I had never heard of bounded-set versus centered-set theology until I met Emily. There is a childhood Sunday School song: "One door and only one, and yet its sides are two, I'm on the inside on which side are you?" I didn't sing this as a kid, I read about it in a book, thank you author Philip Yancey. I could have, though, because I am remembering my childhood church as an in-or-out group. I really like centered-set theology, where we can be diametrically opposed on some issues but we're pointed at the same ultimate goal. That resonates with me and my understanding of who God is.

It also means that I don't have to convince you that I'm right. You can toss this whole sermon out the window and I will not be offended. It might not speak to you. It might not be what you need to hear right now. That's okay with me.

I say that I'm a positive person, but yes, some things get under my skin; we all have pet peeves. One of mine is how the dishwasher is loaded. I twinge a little bit when I open the dishwasher and things are not where they should be for optimal packing. But now, that twinge only lasts for a short time. Science, and its emphasis of accepting other ways of thinking, plus Christianity, and in particular the spiritual practice of meditation, has helped me put those pet peeves of mine into perspective. I have been told, because of my positivity and calmness, "Hey Mike, you are somebody that has their shit together." No, actually, it's just the opposite. To borrow a phrase from the wall in my coworker's office, thank you Aaron Ridley: I "let that shit go." No, I *don't* have it all together, I have just decided to ignore the little things.

But the *big* things – we need to pay attention those, to what's *really* important. And what's that?

For me, the Bible actually provides answers to this. One of the biggest answers is straight from Jesus' mouth. When asked about the Greatest Commandment, Jesus answers this way: "The entire Law and the Prophets can be summed up as this, love the Lord with all your heart, mind, and soul, and the second commandment is like it, to love your neighbor as yourself." *He didn't pause.* In the same sentence, he explained how, as a human being here on Earth, to love the Lord – we must love our neighbor. You serve the Lord by serving your neighbor. Elsewhere, Jesus explains who your neighbor is. It's not just your actual neighbor, which can be hard enough, but acquaintances too. And not just them but strangers too. And not just them but the outcast and marginalized. Yeah, *especially* the outcast and marginalized. In fact, he goes so far as to define "neighbor" as those that hurt you. Yes, even those that hurt you. We are called to serve them too. Yeah, the "big thing" in life, as I have discovered it, is *really hard*. I'm still working on this.

In fact, I don't think "neighbor" stops with people. I think it extends to include nature as well. Remember, God declared creation *good*, and not just off-handedly but *many* times in the *opening* chapter of the Bible. I really like that Blue Ocean Faith Ann Arbor is a "science-friendly" church. To be science-friendly isn't about applying the scientific method to your spiritual journey, like I did. No, that's my odd quirk. Being "science-friendly" is about embracing modern scientific understanding and treating this as God's gift to us. It's about treating nature as God's gift to us, just like we treat our relationships with each other as God's gift to us.

In Genesis and throughout the Bible, we are called to be good steward's of creation. We can use it but not abuse it. But we *do* abuse it, don't we? Here are some examples of our abuse. Mountain top removal mining is, in fact, what it sounds like, and we are systematically leveling Appalachia to get at the layer of coal within it. There are regions of the oceans where the currents swirl and converge, creating a collection spot for buoyant plastic waste. Tar sands extraction is leaving vast swaths of northern Canada uninhabitably scarred, driving out the large herds of caribou that once lived there. The ocean's acidity level is changing as it absorbs carbon dioxide from the air, slowly poisoning the coral polyps in the Great Barrier Reef. And, we've *broken the sky*. Several times. On both the local scale and global scale. The latest is carbon dioxide and methane, two potent greenhouse gases, but we also did it with CFCs, acid rain, and smog in large cities. As Christians, we're called to use the planet wisely and justly. Yes, we have to be the Lorax that speaks for the trees, the Swomee Swans, and the Brown Bar-ba-loots. As we live our lives, we should be conscious of the environmental impact of our choices and take this into account in our decisions.

Just like we are called to stand in solidarity with marginalized people, we are called to stand in solidarity with the environment. To put a name on it, we are called to be "environmental allies." I think that's a phrase, "environmental ally", that we will hear again from Ken and Emily in their upcoming sermon series.

So, back to "The Lorax." The boy talking with the Once-ler is standing on a circle of rock with the word "UNLESS" across the front. The Once-ler didn't understand what that word meant. But The Once-ler finds the answer near the end of the book. It goes like this:

“ ‘But now,’ says the Once-ler, ‘now that you're here, the word of the Lorax seems perfectly clear. UNLESS someone like you cares a whole awful lot, nothing is going to get better. It's not.’”

That passage really spoke to me. And as I found my way to embracing Christianity, *again*, I also embraced an environmentalism motivated by that faith. **I could be wrong, because I'm wrong a lot, but I think that being a Christian means speaking up for those that have no voice, just like the Lorax.**

For our meditation time, I'd like to have us focus on Genesis 1. In particular, on the words at the end of each verse: “and God saw that it was good.” Let yourself get comfortable, take a few deep breaths. You can close your eyes or keep them open, whichever is more comfortable for you. Now, picture a place in nature where you find calmness, serenity, happiness. Let your whole self become immersed in the comfort of this place. Relax. I'll repeat "**and God saw that it was good**" on 30 second intervals for the next 2 minutes.

Thanks. Go out into the world and make it a better place.

Possible benediction, this Hawaiian indigenous prayer:

Let us give thanks for the world around us.
Thanks for all the creatures, stones and plants
Let us learn their lessons and seek their truths,
So that their path might be ours,
And we might live in harmony, a better life.

May the Earth continue to live,
May the heavens above continue to live,
May the rains continue to dampen the land,
May the wet forests continue to grow,
Then the flowers shall bloom
And we people shall live again.