



UNITARIAN UNIVERSALIST

CONGREGATION OF FREDERICK
Spirituality · Community · Justice

Why We Should Choose *both Religion and Science*

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As a teenager, when I went to events with my theologically conservative youth group, there were often t-shirts for sale with **anti-science slogans** like, “I believe in the big bang. God spoke and *bang* it was.” There was **an orientation toward *protecting the past***: a perception that all the paradigm-shifting religious events had already happened thousands of years ago, and that our role was to defend our belief in those miraculous occasions against emerging understandings which saw these ancient stories as myths and legends.

In contrast, Unitarian Universalism is called a “Living Tradition”: we have a bias toward progress in the *present*, and evolution into the *future*. Indeed, the title of our gray hymnal is “Singing the Living Tradition.” And as one of the classic hymns in that book says, we “**revere the past, but trust the dawning future more.**” More broadly, we are part of the Liberal Turn in Religion, from the Latin root *liber*, meaning “free.” We are part of a move toward *freedom* in religion. It is a shift *from* authority grounded in community, hierarchy, and tradition *to* authority grounded in *reason* (what is logical) and *experience* (what one knows firsthand through one’s personal subjective experiences or what can be proven objectively through the scientific method).

Historically, UUs have often been on the front lines of embracing modern science and adjusting our theology accordingly. So it makes sense that our **Fifth Source is “Humanist teachings which counsel us to heed the guidance of reason and the results of science, and warn us against idolatries of the mind and spirit.”** For UUs, science is neither an enemy nor

even merely an ally; the scientific perspective is fully inside the big tent of Unitarian Universalism.

Arguments used to be made from *scripture alone* without reference to science: Genesis 1 says that God is the creator of the heavens and the Earth, so that's what happened. As the bumper sticker says, "God said it. I believe it. That settles it." But now we see absurdities like the Creation Museum in Kentucky that tries to prove *on science's terms* that the Bible is literal, historical truth, which results in exhibits such as Adam and Eve riding on the backs of dinosaurs. What many religious fundamentalists don't seem to realize is that science has redefined the battlefield such that **both sides are now trying to prove their point—not through biblical interpretation—but with the scientific method.**

This shift happened because modern science is so impressive: it's hard to deny the power of the scientific method, which has given us smart phones, the Internet, space travel, and so much more. But the effectiveness of science was not obvious from the beginning, and I'd like us to reflect some on how we came to have our Fifth UU Source of "reason and the results of science." For those of you interested in going deeper, this sermon was inspired by a book titled **To Explain the World: The Discovery of Modern Science by the Nobel Prize-winning physicist Steven Weinberg** (Harper 2015).

So, as we turn to the history of how we as a species came to increasingly "heed the guidance of reason and the results of science," it may be helpful to keep in mind the quip from a L.P. Hartley novel, "**The past is a foreign country; they do things differently there**" (x). So for example, the Pre-Socratic philosophers are often fascinating to read, but in many cases, they use what we would call **logical fallacies or sophistry: "clever but unsound reasoning."** You see them repeatedly making claims without justification (11). Thales argues that the "universal primary substance" is water; Anaximander, that it is air. Xenophanes makes the case that the "fundamental substance" is earth, Heraclitus that it is fire, and Empedocles that everything is made some combination of those four elements: earth, wind, fire, and air (4-6). All of these arguments are interesting from a certain point of view, but none of them are evidence-based.

The same dynamic was at work in theology. To give just one example, in the second century, the early church father Irenaeus writes in his book *Against Heresies* that the reason the

Gospels of Matthew, Mark, Luke, and John are considered scripture and not the many other Gospels being written at the time, is that, “The Gospels could not possibly be either more or less in number than they are. Since there are four zones of the world in which we live, and four principal winds...the pillar and foundation of the Church is the gospel...it fittingly has four pillars.” That is **classic sophistry: somewhat persuasive rhetoric that makes no sense if you take a step back from the propaganda**—because one could, of course, think of similar analogies to justify any number of Gospels.

The larger point is that **you can’t build anything of substance on such a false premise** (254). You can’t start from the fanciful foundation that, “Everything is made of some combination of earth, wind, fire, and air” and eventually discover how to make an iPhone. But the scientific method can and has given us inventions that have transformed our world in both positive and negative ways (254).

One of the bridges to understanding the power of the scientific method—of setting up experiments to test a hypothesis against reality—was music. The Pythagoreans notice that, “If two strings of equal thickness, composition, and tension are plucked at the same time, the sound is pleasant if the lengths of the strings are in a ratio of small whole numbers”:

- Octave: one string is half the length of the other
- Fifth: two-thirds the length
- Fourth: three-fourths the length

“By contrast, if the lengths of the two strings are not in a ratio of small whole numbers, then the sound is jarring and unpleasant” (16). **These observations and experiments helped link music and math, as well as the use of evidence-based reasoning to make predictions about reality.**

Ultimately, though, it is also important to point out that pure “mathematics is not a natural science,” a branch of science that deals with the physical world. Rather, math is a language, a tool, that can be used in science; however, **“Mathematics in itself, without observations, cannot tell us anything about the world.** [Conversely], any mathematical theorem can be neither verified nor refuted by observations of the world” (20).

And it is precisely on the close observation of the natural world that science began to progress. We see thinkers among our ancestors slowly letting go of unfounded speculation and

beginning to make small discoveries based on an increasingly sophisticated method of observation, measurement, and experimentation—and the ensuing formulation, testing, and modification of hypotheses based on those experiments—which built on themselves over time (33).

Five thousand years ago, ancient Egyptians were using the stars to track and predict the flooding of the Nile (55). And it's a myth that everyone thought the world was flat before Columbus. There were ancient Greeks, around 2,500 years ago, who made educated arguments for why the Earth is a sphere based on observing that, "The Earth's shadow on the Moon during a lunar eclipse is curved, and the position of stars in the sky seems to change as we travel north to south" (64).

And, when Columbus was preparing to set sail, the debate

concerned not the shape of the Earth, but its size. Columbus thought the Earth was small enough so that he could sail from Spain to the East coast of Asia without running out of food and water. He was wrong about the size of the Earth, but was saved by the unexpected appearance of America between Europe and Asia" (65).

But even with all the important discoveries in the ancient world, **the real paradigm shift—what we now call the Scientific Revolution—began in the sixteenth century with Copernicus's discovery that the Earth is not the center of the universe** (146). Our planet is merely the third rock from the sun (148).

Copernicus's book *On the Revolution of the Heavenly Spheres*, was published in 1543, only 26 years after Martin Luther nailed his "95 Theses" to the door of Wittenberg Chapel in Germany, catalyzing the Protestant Reformation (153). But even as the Protestant Reformers were seeking a revolution in religion, they mostly remained resistant to science. **Regarding Copernicus, Luther wrote, "This is what that fool does who wishes to turn the whole of astronomy upside down.... I believe in the Holy Scriptures, for Joshua commanded the Sun to stand still and not the Earth."** Here we see the aforementioned "Argument from Scripture" being used against the "Argument from Scientific Evidence" (156).

But long before the New Atheist movement, scientists were also getting in their own barbs. **Johannes Kepler wrote about religious resisters to Copernicanism in one of his books in a paragraph with the indelicate title of *Advice for idiots*:**

But whoever is too stupid to understand astronomical science, or too weak to believe Copernicus without [it] affecting his faith, I would advise him that, having dismissed astronomical studies, and having damned whatever philosophical studies he pleases, he mind his own business and betake himself home to scratch in his own dirt patch. (170)

Unfortunately, calling your opponent an idiot is rarely a way to “win friends and influence people.” That being said, it’s important to recognize that **the same irrational fear of science, which put Copernicus’s books on the religious banned book list, is parallel to the sophistry that fuels climate change denial today: “clever but unsound reasoning.”**

Keep in mind the words of our Fifth Principle: “Humanist teachings which counsel us to *heed* the guidance of reason and the results of science, and *warn us against* idolatries of the mind and spirit.” Climate Change denial, as with the denial of Evolution, is an idolatry: revering a falsehood. But here’s the challenge of the Scientific Revolution: accept the world as it actually is, and respond accordingly. As the science fiction writer Philip K. Dick liked to say, **“Reality is what doesn’t go away when you stop believing in it.”**

But there has been a long process of coming to trust science that continues to today. When antiseptic techniques were discovered for cleaning your hands in a way that drastically reduced the likelihood of infection, **most physicians initially refused to adopt antiseptic practices** when moving from patient to patient. Similarly, practices like bleeding patients were widely used even though they had never been proven to be effective and eventually were proven to harm patients.

Tragically, medical history is riddled with unfounded theories like Humorism, that “four humors—blood, phlegm, black bile, and yellow bile, which (respectively) make us sanguine, phlegmatic, melancholic, or choleric.” But we know now that Humorism is wild speculation akin to the Pre-Socratic idea that everything is made of some combination of earth, wind, fire, and air. **“Ironically, the opportunity for physicians to study theories [such as Humorism and**

Astrology] at universities gave medical doctors much higher prestige than surgeons, who knew how to do really useful thing like setting broken bones but until modern times were not usually trained in universities.”

Similarly, clinical trials were not required for new medicines until well into the twentieth century, which resulted in a lot of “snake oil.” Indeed, students of the history of medicine have “often remarked that **until sometime around the beginning of the twentieth century the average sick person would do better avoiding the care of physicians.**” Thankfully, we live a century into the age of evidence-based, scientific medicine!

As I move toward my conclusion about the history behind why we UUs treasure our Fifth Source of science, I invite you to hear these words from Steven Weinberg’s book *To Explain the World*:

Faced with a puzzling world, people in every culture have sought explanations.... **Thales tried to understand matter by guessing that it is all water, but what could he do with this idea?** ...But imagine how Ptolemy must have felt when he realized that...he had found a theory of planetary motion that allowed him to predict with fair accuracy where any planet would be found in the sky at any time....

What pleasure Copernicus must then have felt when he was able to explain that the fine-tuning and the looping orbits of Ptolemy’s scheme arose simply because we view the solar system from a moving Earth. Still flawed, the Copernican theory did not quite fit the data without ugly complications. **How much then the mathematically gifted Kepler must have enjoyed** replacing the Copernican mess with motion in ellipses.... (254-255)

Despite the excitement and power of scientific discoveries, however, the attitude of religion toward science has often been to ask, “What does Athens have to do with Jerusalem?” In contrast, **Unitarian Universalism invites us to choose *both*: the best of the world’s religions *balanced with the insights of modern science.***

From our twenty-first century, pluralistic, postmodern perspective, we also know that despite the power of science, there are also *limitations* to what the scientific method can address.

As religious traditions testify, some experiences are subjective, uncanny, and rare and do not lend themselves to observable, repeatable study on demand in laboratory conditions. Or as the scientist J.S. Haldane said about the implications of quantum mechanics: **“The universe is not only queerer than we suppose, but queerer than we can suppose.”**

In that spirit, I’ll leave you with this advice from the philosopher Wittgenstein: **“Don’t think, look.”** Don’t limit yourself by always thinking in advance how you presume the world is. Look. Observe closely. Test. Experiment. How might you—how might we—learn to better explain the world?