

Unitarian Universalist Fellowship of the Peninsula
Sunday July 8th 2018

Sermon: “Cosmic Perspective”

“The Total Perspective Vortex derives its picture of the whole Universe on the principle of extrapolated matter analyses.

“To explain:

“Since every piece of matter in the Universe is in some way affected by every other piece of matter in the Universe, it is in theory possible to extrapolate the whole of creation — every sun, every planet, their orbits, their composition and their economic and social history — from, say, one small piece of cake.

“The man who invented the Total Perspective Vortex did so basically in order to annoy his wife.

“Trin Tragula — for that was his name — was a dreamer, a thinker, a speculative philosopher or, as his wife would have it, an idiot.

“And she would complain incessantly about the utterly inordinate amount of time he spent staring out into space, or mulling over the mechanics of safety pins, or doing spectrographic analyses of pieces of cake.

“‘Have some sense of proportion!’ she would say, sometimes as often as thirty-eight times in a single day.

“And so he built the Total Perspective Vortex — just to show her.

“And into one end he plugged the whole of reality as extrapolated from a piece of cake, and into the other end he plugged his wife, so that when he turned it on, she saw in one instant the whole infinity of creation and herself in relation to it.

“To Trin Tragula’s horror, the shock completely annihilated her brain; but to his satisfaction, he realized that he had proved conclusively that if life is going to exist in a

Universe of this size, then the one thing it cannot afford to have is a sense of proportion.”

This description of the Total Perspective Vortex comes from the Douglas Adams’ *The Restaurant at the End of the Universe*, the sequel to *The Hitchhiker’s Guide to the Galaxy*. According to the book, the Vortex is the most horrible punishment to which a sentient being can be subjected because it gives you “just one momentary glimpse of the entire unimaginable infinity of creation, and somewhere in it there’s a tiny little speck, a microscopic dot on a microscopic dot, which says, ‘You are here.’” The idea is that the size and complexity of the Universe is just too much for any mortal mind to grasp, not to mention doing quite a number on the ego.

Outside of Adams’ books, there’s a real-world version of the Vortex, but thankfully it results in euphoria rather than brain death. Known as the Overview Effect, it has been experienced by astronauts, particularly those on space walks, and refers to the firsthand experience of seeing the Earth from orbit. Thanks to the perspective afforded by distance, our planet is immediately recognized as precious and fragile, with all life supported and nourished and protected by the thinnest of layers of water and air. As many astronauts have noted, there are no national boundaries when the Earth is seen from space, the conflicts that divide us from one another are obviously petty, and the need to create a united human society to protect both our “pale blue dot” and ourselves becomes all the more important.

Of course, one need not go into space to experience such a change in perspective — and it’s not always a euphoric experience.

Biologist Ursula Goodenough remembers going on a camping trip during college, looking up at the night sky and being overwhelmed by panic and terror. She had recently taken a physics class, and what she had learned came crashing down on her that night.

As she remembers it, “All the stars that I see are part of but one galaxy; there are some hundred billion galaxies in the Universe, with perhaps a hundred billion stars in each one, occupying magnitudes of space that I cannot begin to imagine; each star is dying, exploding, accreting, exploding again, splitting atoms and fusing nuclei under enormous temperatures and pressures;” and, she concludes her litany of cosmic

incredibility, “our Sun too will die, frying the Earth to a crisp during its heat-death, spewing its bits and pieces out into the frigid nothingness of curved spacetime.” The night sky was ruined, she remembers, and she thought she would never be able to look at it again.

Perhaps there’s a difference between seeing and imagining. In contrast to the experiences of so many astronauts, Goodenough is certainly not the only scientist to have been overcome by bleak emptiness whenever they’ve thought about what was really going on out in the cosmos or deep in the atom. Steven Weinberg, who won the Nobel Prize in Physics for his work on explaining the fundamental forces between subatomic particles, famously wrote that “the more the universe seems comprehensible, the more it seems pointless.” Though he may regret having made that statement, he is willing to explain what he meant as follows:

“I think it’s been the truth in the past that it was widely hoped that by studying nature we will find the sign of a grand plan, in which human beings play a particularly distinguished starring role. And that has not happened. I think that more and more the picture of nature, the outside world, has been one of an impersonal cosmos governed by mathematical laws that are not particularly concerned with us, in which human beings appear as a chance phenomenon, not the goal toward which the universe is directed.”

Weinberg goes on to explain the challenge this may or may not present to people on the basis of their beliefs.

“[F]or some, this has no effect on their religion [because t]heir religion never looked for any kind of point in nature. For others, this is appalling, the idea that all of the stars and galaxies and atoms are going about their business, and it’s just by accident that, here in this solar system, the peculiar chemical properties of DNA acting over billions of years have produced these people who have been able to talk and look around and enjoy life. For some people that picture is antithetical to the view of nature and the world that their religion had given them.”

It is in this sense that Weinberg explains that there is no point to the Universe. It simply is, without any overall goal or intention, and certainly without any purpose or special role for us.

For her part, Ursula Goodenough explains that, with time, the apparent pointlessness ceased to be a source of terror for her, by accepting that there didn't need to be a point. Rather, as many deep practitioners of religion have done for millennia, she can embrace "the Mystery of why there is anything at all, rather than nothing; the Mystery of where the laws of physics came from; the Mystery of why the Universe seems so strange." She learned to be okay with that, embracing it as a source of wonder. As Goodenough puts it, "The realization that I needn't have answers to the Big Questions, needn't seek answers to the Big Questions, has served as an epiphany. I lie on my back under the stars and the unseen galaxies and I let their enormity wash over me."

For his part, Steven Weinberg explains that just because the Universe seems pointless, that is far from saying that our lives are pointless, too. As he puts it, "if there is no point in the universe that we discover by the methods of science, there is a point that we can give the universe by the way we live, by loving each other, by discovering things about nature, by creating works of art. And [...] although we are not the stars in a cosmic drama, if the only drama we're starring in is one that we are making up as we go along, it is not entirely ignoble that faced with this unloving, impersonal universe we make a little island of warmth and love and science and art for ourselves."

So if we're attached to a world-view in which we, individually, or we, as a species, hold a special, important place in the grand scheme of things, then the cosmic perspective is a challenge not only to our egos but also to our identities. Scientific knowledge, after all, is most seen as a threat — not only to religion, but also to politics — when it questions beliefs that humans are the pinnacle of creation or that some nation is especially blessed or that some people are inherently better than other people. Certainly the tendency of science to challenge egos and identities can be exploited by those who see acceptance of the reality of global climate change, say, as a threat to their profits from fossil fuels, but there really is more to it than simple greed and exploitation.

But the good news is that people can change. It is possible to see the Earth floating in space and understand how precious and fragile it is. It is possible to imagine countless stars and galaxies and not only accept but embrace the mystery of how it all came to be. It is possible to grasp the beauty of the mathematical equations that are so amazingly effective at describing our physical Universe and know that they don't need to offer us any special benefits or favors. And it is possible to make a home of warmth, love

and dreams for ourselves in this otherwise cold, lonely and hazardous Universe. I know of no better way to “grow in wonder” than to embrace such a cosmic perspective.

In our responsive reading this morning, astrophysicist and science communicator Neil deGrasse Tyson explains that cosmic perspective results from knowledge, but it’s not just what we know. It’s also about the wisdom we need to apply that knowledge to our everyday lives in the otherwise uncaring Universe.

After all, one of the metaphors of our planet Earth is as a boat or ship. Our opening hymn by Peter Mayer is all about our “Blue Boat Home”, and our middle hymn by Cecily Taylor refers to our world as “a ship that bears us all.” If you go to the Virginia Living Museum, you’ll know that near the top of the double spiral staircases in the middle, there’s a picture of the Earth and a quote by philosopher Marshall McLuhan: “There are no passengers on spaceship Earth. We are all crew.” However it’s put, the message of this metaphor is clear: when you’re on a boat, far from land, you must rely on your shipmates for safety and survival and you must take good care of the boat that is supporting you and protecting you amidst the uncaring ocean.

Last week, my sermon circled the topic of human kindness, beginning and ending with reference to the challenge of living as imperfect and vulnerable humans in a strange and often unfriendly Universe. After all, the cosmic perspective doesn’t shy away from revealing that the Universe, as amazing as it is, does not owe us any favors or privileges when it comes to our survival. The cosmic perspective makes it clear that we must depend on one another, that we must learn to transcend fear and greed to embrace one another with kindness as well as treat our “blue boat home” more kindly, too. Recognizing our true place in the Universe, accepting our interdependence, and treating one another with kindness, these are all part of the same approach to reality that any philosophy, spirituality or religion worth its salt should be embracing.

For myself, this is incredibly liberating.

The Universe is an amazing place, and I count myself extremely fortunate to be alive in an age when we are learning so much about it, from the ways that the most fundamental building blocks of matter go together as the atoms that make up everything, to the “sound” of the gravitational waves made by two black holes as they collide.

And although we already guessed as much, we now know — empirically — what a rarity this planet is, having detected nearly four thousand planets in other solar systems but with the majority of them clearly unsuitable for supporting life as we know it. So, I am also grateful to be here, glad to be part of the crew of this “spaceship Earth”, and taking in the spectacular views it offers us of the Universe.

It’s liberating because none of it was made for me — or for humans in general. Yes, we should count ourselves fortunate and yes, we should be grateful, but those are our responses to the fact of our being here. They are not demanded by the Universe — or by the Earth. The Universe isn’t jealous, and won’t get angry with us if we wonder if we’d be better off in an alternate cosmos where the laws of physics are slightly different. The Universe doesn’t care about us one way or another.

And neither does the Earth.

Rather, if we value the Earth as our blue boat home, if we value the diversity of life whether for practical or aesthetic reasons, then we have a responsibility to treat the Earth well so that it can continue to sustain life, and we have a responsibility to treat one another well because all we have to rely on is one another. These are not responsibilities that are imposed upon us; rather, we accept them for ourselves, and, I would say, inevitably so, once we have embraced the cosmic perspective.

Thankfully, we don’t need to go into space to do that. Thanks to books and television shows and computer animations, it’s quite possible to absorb the knowledge we need and then use our own imaginations to place ourselves within the Universe, hopefully with the results of the Overview Effect rather than the effects of the Total Perspective Vortex! I can only imagine how awe-inspiring it must be to look first-hand at the Earth from space, but there are plenty of great pictures that still show how precious and fragile is our planet, how our lives are supported and nourished and protected by the thinnest of layers of water and air, how our national boundaries are artificial and how our conflicts and divisions are such a waste. It is the cosmic perspective that shows us why kindness must become a core value of our society, and why that is such an urgent need.

So let us recognize our true place in the Universe, let us open ourselves to the beauty of this precious Earth, let us accept our interdependence — with one another and

with all life — with gratitude, and let us commit and recommit to treating one another with kindness. For we are all in this together, but it will only be if we all work together that we shall be well.

So may it be.