THE GREATEST VALUE

A sermon preached by Galen Guengerich
All Souls Unitarian Church, New York City
March 18, 2018

The greatest human challenge, in physics as in life, is moving between the largest dimensions of existence and the smallest. In physics, the challenge is to move between the theory of relativity and its explanation of large interactions (among gravity, light, planets, and so on) and quantum mechanics and its explanation of small interactions (among photons, neutrinos, quarks, and the like). In life, the challenge is to move from metaphysical questions about the source of life and its ultimate meaning to ethical questions about the source of justice and the meaning of fairness.

The physicist Roger Penrose, in his Guardian obituary of Stephen Hawking, who died on Wednesday, says that Hawking's greatest scientific contribution was to establish a clear link between the largest and smallest dimensions of existence. In scientific terms, Hawking linked the procedures of quantum theory with those of general relativity and related them to the flow of energy in the universe, or thermodynamics. Hawking's breakthrough came in his study of black holes, from which physicists had thought no energy could ever escape. Hawking proved otherwise.

But Hawking also recognized that the goal of science isn't only to answer our most difficult theoretical questions; it's also to respond to most vexing personal problems. Hawking once demonstrated this crossover when he said, "Black holes ain't as black as they are painted. They are not the eternal prisons they were once thought. Things can get out of a black hole both on the outside and possibly to another universe. So if you feel you are in a black hole, don't give up — there's a way out."

Over the past 500 years or so, the hard sciences — especially mathematics, cosmology, and physics — have led the way in establishing what we can know for sure about our universe and about human life. In pre-modern times, people believed our most certain knowledge came from divine revelation as recorded in scripture. Beginning most decisively with Copernicus, human reason and the scientific method began to supplant scripture as our most certain way of knowing.

Before Copernicus, people interpreted scripture as saying that planet Earth and the human race stood at the very center of God's creation. Copernicus did the math — performed the calculations — and proved that the earth is not the center of the solar system. Half a century later, Galileo expanded and reinforced Copernicus's findings, which is when the church realized the far-reaching shift that was taking place in the source of human knowledge. In 1633, reacting to the threat that scientific progress posed to divine revelation, a church inquisition found Galileo guilty of heresy and

sentenced him to imprisonment for the rest of his life, which was later commuted to house arrest.

We live our lives in their smallest dimensions based on how we understand existence in its largest dimensions. Metaphysics, whether based on scripture or science, begets ethics. This is my belief, in part because it is my experience. As many of you know, I grew up Conservative Mennonite, an austere tradition whose way of life was almost wholly formed by the dictates of the Bible. Beginning in my mid-teens, I began to feel the dissonance between the biblical world of my upbringing and the secular world beyond.

Over time, I came to realize that certain tenets of the Christian faith — most notably the virgin birth and the resurrection — require suspending the laws of nature. I also realized that treating these foundational beliefs as mere metaphors, as some conflicted believers try to do, wouldn't provide the certainty that Christian belief requires. By the time I entered college, it was clear to me that these two ways of knowing — scripture and science — eventually had to diverge, at least for me. For my part, I couldn't ultimately believe that divine revelation provides our most certain knowledge and also believe that human reason and science provide our most certain knowledge. One or the other had to take precedence.

In my own search for certainty, I began college as a mathematics major. What could be more certain than the sum of two integers or the area of a circle? I eventually graduated with a degree in ancient Greek philosophy, and then I headed off to seminary to study theology, ostensibly to become a Mennonite minister. Truth be told, I was like a canoe headed for a shore I would never reach. Even though I paddled furiously forward, the current of the river swept me swiftly out to sea. Shortly before I graduated from seminary, I left the Mennonite church.

After I made my choice about whether I would live in a world defined by ancient scripture or by modern science, I still felt adrift. I believed that human reason and experience formed the basis of our most certain knowledge, but I still didn't have a way to translate this knowledge into a way of life. I needed a link between metaphysics based on scientific knowledge and ethics attuned to life in the modern world.

A couple of months ago, my wife Holly and I spent a weekend in Chicago visiting my daughter (and Holly's stepdaughter) Zoe and her fiancé Connor. One afternoon, we were walking around the campus of the University of Chicago, where Connor is studying for a PhD in econometrics. After I completed my seminary training 30 years ago, I ended up at the University of Chicago to continue my studies in theology and political philosophy.

As we proceeded along our campus tour through the main quadrangle, we came upon Swift Hall, which houses the Divinity School. Holly commented that she had never been inside Swift Hall, even though she had attended my PhD graduation on the quadrangle lawn outside. We entered Swift Hall, and I began showing her around. When

we reached the third floor, I opened the door to a seminar room in one corner of the building and invited Holly to step inside.

I was completely unprepared for my reaction that followed. Tears began flowing down my cheeks, and I felt overcome with emotion. For a few moments, I couldn't speak. Holly broke the silence by saying, "This is where you first studied Whitehead." She didn't have to ask the question. I nodded that she was correct.

In discovering Alfred North Whitehead in that seminar room several decades ago, I found my intellectual and spiritual North Star. An early twentieth-century Cambridge mathematician who later became a philosopher and theologian at Harvard, Whitehead was equal parts scientist and theologian. He showed me how to think about religion and spirituality in the modern world. My guide to Whitehead was Franklin Gamwell, known as Chris, who was Dean of the Divinity School at the time. Chris has remained a mentor and friend ever since.

For a theologian, Whitehead had an unusually deep understanding of the natural world. A mathematician by training, Whitehead collaborated with Bertrand Russell in writing *Principia Mathematica*, widely viewed as one of the most important books of the twentieth century. Whitehead's major philosophical work, published in 1929 under the title *Process and Reality*, takes with utmost seriousness the insights of Einstein's theory of relativity. Even recent scientific developments such as string theory seem almost to have been anticipated by Whitehead's philosophy.

For a scientist, Whitehead had an unusually deep understanding of the nature and necessity of the divine. From a close reading of the book of nature, Whitehead argues that one cannot account for the creative advance of time and history without an understanding of the role of the divine, which Whitehead calls God. Beginning not with revelation but with observation, Whitehead builds a bridge across the centuries-old divide between matter and spirit, between science and religion, between fact and value, between knowledge and faith, between metaphysics and ethics. His central insight is that everything becomes whatever it becomes by virtue of how it relates to everything else. Whether you are a photon, or a person, or even God, your identity over time develops through a process of relating to everything else. Hence the name by which Whitehead's thought has become known: process philosophy.

Through his work, Whitehead developed a deep confidence in the order of nature, which he describes as "the faith that at the base of things we shall not find mere arbitrary mystery... To experience this faith is to know that our experience, dim and fragmentary as it is, yet resonates with the utmost depths of reality."

But Whitehead didn't stop at trying to plumb the utmost depths of reality. He also provided a way to address the practical challenges of life. He once said that the goal of civilization is the evocation of intensities. By this, he means that the physical, emotional, and spiritual relationships that constitute us become more valuable as they become more intense — that is, more substantial and more reciprocal.

In other words, I need to take other people and the natural world seriously because my relationships to them make me who I am. My life is partly about me, but it's also about other people and other things as well. In the grand scheme of life, as well as in its smallest decisions, the value of life increases as relationships become more substantial and more reciprocal.

Stephen Hawking once responded to an interview question about how we should live in a world that's evolving on its own terms and not unfolding according to a divine plan. He said, "We should seek the greatest value of our action."

Over the past several days, I've thought a lot about the value Stephen Hawking added to our world, much of which came through his action of sitting in a chair — the life of contemplation. Except for mathematicians and mystics, most people don't practice the discipline of contemplation these days.

Maybe that's why many of us, myself included, often find it hard to link our most expansive values to our most mundane actions. We don't take time for contemplation. We don't ask: how can I act to add the greatest value, here and now? What can I best do with the gift of this moment of possibility?

The value of life increases as relationships become more substantial and more reciprocal. This is why the Moon is more valuable to life on Earth than Pluto and why my wife Holly is more valuable to me than someone in Siberia whom I have never met. Whether the principle in question is the law of gravity or the law of love, the terms of the relationship remain the same.

Given what we believe to be true about the source of life and its ultimate meaning, it's also true that we add the greatest value when we choose to act in ways that make our relationships with other people and the natural world more substantial and more reciprocal. To be sure, ethical questions about the source of justice and the meaning of fairness are never easy to answer, which is why we need to practice the spiritual discipline of contemplation. In light of everything we know, our challenge is to practice the art of the possible — to maximize the value of each moment.

Or, as Hawking himself once said, "Remember to look up at the stars and not down at your feet. Try to make sense of what you see and wonder about what makes the universe exist. Be curious. And however difficult life may seem, there is always something you can do."