Thought vs. Life

How those two words are mutually exclusive by the inclusion of another: Evolution

by Raphael D. Chenault

Social hot-button issues are always that: hot-button issues. You can never walk into a populated room with an opinion on one and expect complete agreement from everyone. Worse, if you were to do just that, it would be best to walk into that room with a flame-retardant suit to shield yourself from the inflammatory remarks about to be brought down upon you like a napalm firestorm.

The problem is religion. Not to knock it or degrade those who have it. Not at all. In fact, I have true admiration for those who can honestly believe something based purely on faith with no physical explanation. There are many things which science will never be able to explain, so these questions will never have physical answers. To have the faith to believe so strongly in any answer despite that is remarkable.

The problem with religion, however, is that it seems to be an intrinsic human need. Human nature seems to long for something, seek something that isn't obviously there. Religion goes back to the beginning of humanity (either five thousand or five million years ago, depending on which bomb shelter you've crawled into). Even cave paintings seem to suggest something bigger, something in the sky, a larger figure dominating over many smaller figures on the ground.

Obviously, we, as humans, need an explanation. How did we get here? Why are we here now? What are we doing? How should we do it? Over the eons, those questions have been tackled by the greatest minds in history, recorded or not.

Another set of questions that has historically been teasing humanity is this one: How does the world work? Why does the sun give us life? How and why do our bodies work? Why do we get sick? Why do we die?

If considered for even a brief amount of time, it is obvious that all of these questions are really one set, not two.

If it is not readily apparent to you why this is, then consider this: since as far back as the ancient Mesopotamians, and quite probably before, religion explained the laws of physics. It explained the creation of the universe, how and why the sun rises and sets, why water is important to us, how the human body works, the causes of illnesses, and many other questions now answered by science and commonly accepted by the general populace. What used to be accepted fact is now viewed as ridiculous ancient religious belief, in favor of a physical, observable, testable explanation.

Even science of the past is viewed today as laughably stupid. The cause of malaria? Certainly not what its Latin roots would imply (mal = bad, aria = air), and what was believed to be the cause when the disease first started afflicting workers and soldiers since the beginning of time, but microscopic protozoa carried by mosquitoes, which feed on red blood cells, causing anemia. The proper way to treat a cold or flu? Certainly not bleeding with leeches to release the evil spirits, as was the highly medically advanced ancient Greek custom, but rest and warm fluids. The correct way to treat schizophrenia? Not electroshock therapy, which was the only way to deal with such people and expect any sort of results back in the forties through the seventies, but through therapy and medication.

Indeed, science has brought us many wonderful and fulfilling answers to many perplexing questions which have haunted us for millennia. In fact, we now laugh and ridicule the peoples of old, finding it utterly ridiculous that "bad air" could cause a disease. The closest we can even come to reproducing such a cause of illness is radiation and its subsequent poisoning of all life near it, but even that we firmly understand. We shudder to think of using leeches to break holes in our skin to bleed out the evil spirits and cure common illnesses. We feel a stab of pity for those poor psychotic or insane patients at mental hospitals enduring hours and hours of electricity being jolted through their bodies to cure them of their insanity, and a pang of rage at those "doctors" who inflicted such torture upon them.

Of course, now armed with modern science, we can logically explain the true causes behind each of these problems. While science of the past is something to be ashamed of, even lamented, science of the present day is something to be lauded. The advancement of computers specifically has allowed science to answer so many questions that in the past have been relegated to philosophy and theology.

So if science is such a powerful tool in attaining a true understanding of the physical behavior and traits of the world, and indeed the universe, why is it accosted so when it attempts to explain the evolution of the universe and life within it?

To understand that, we must first understand that this is not a new problem. Religion, and Christianity in particular, has been restricting knowledge and oppressing those who wish to disseminate it for centuries.

Galileo springs immediately to most people's minds. Over the course of many years, he made a series of observations of Jupiter, one of the stars in the sky which changed position relative to the surrounding stars. He observed that it was actually a large body with four moons that periodically circled it. With further observation, he noticed that Jupiter was relatively close to our planet, and didn't circle us at all as it should have, according to the geocentric thought of the time (with the earth as the center of the universe) enforced by the Catholic Church, but circled the sun. Armed with this new knowledge, he watched the sun's motion around the earth and realized that such motion was not occurring at all, but that the earth was spinning, giving the illusion of an orbiting sun. This in turn allowed him to realize that the earth was actually orbiting the sun on a path that was significantly inside Jupiter's.

He published his discoveries in a series of journals and was immediately arrested for heretical thought. Facing execution, he recanted his publications in exchange for lifetime house arrest.

Galileo was not the first to suggest a heliocentric model for our system of planets. Copernicus, an astronomer from the sixteenth century, faced similar challenges when he published his model of the solar system. He, however, was reluctant to publish his work not because he was afraid of religious officials, but because he did not think his work to be complete enough. Though he was challenged by the church of the time, he did not care about it, and that makes him rather unique in the history of science.

Astronomy and biology are not the only fields of science to have seen oppression by religious political power. Chemistry and physics also saw their share of persecution and victimization from the churches in power at various times.

Religion and science are not always at odds, though, even when they do not corroborate each other. In fact, some ancient religious documents state things that anyone with a basic grade-school education knows to be inaccurate. For instance, some ancient Polynesian beliefs state that the world is held up by a series of stakes in the sky, holding it up like a table. The Christian bible repeatedly speaks of the four corners of the earth, implying the earth to be a flat, four-sided surface. Ancient Babylonian beliefs stated that the earth was actually the remains of a cracked skull, a remnant of a brutal, bloody fight between two deities.

Obviously, the world is not some flat surface held up, such as a table. We know this to be true simply because we have cameras in orbit around the earth, each of which has taken countless millions of pictures of its surface, revealing no such support stakes, and emphasizing beyond any doubt its spherical nature.

This leads us to the rather roundish shape of a skull. Might the earth be an ancient skull? We might surmise as such for a moment. However, if it is a skull, that means it was attached to a truly gargantuan living being. On what surface did this being live? Space is not a surface; it is quite the opposite: space is nothing. In fact, no such solid surface exists on which such a being could possibly have ever existed. Therefore, we can soundly discount this hypothesis for the origin of the world. Further evidence against this hypothesis comes from the fact that the belief states that the skull was cracked and incomplete. As the world is a complete sphere, this is obviously not the case.

This leaves us with the Christian belief of the world's origin: Creation. Might the earth have been willed into existence instantaneously, exactly as it is now? Might all life have appeared within the same week, exactly as we see it now? Might all this have happened less than five thousand years ago?

Before I address such questions, I must first address the idea of mythology. Specifically, I would like to define the word "myth" as the Miriam-Webster dictionary does. It states that a myth is "a usually traditional story of ostensibly historical events that serves to unfold part of the world view of a people or

explain a practice, belief, or natural phenomenon." That is to say that a myth is a story that is accepted and traditionalized by many (or all) of a group (or several groups) of people. Further, it states that this traditional story is these peoples' way of explaining something about the world.

We have many times heard of the phrase "creation myth." We have all heard about the Greek creation myth as children and readily accepted that it was actually *not* how the world was created. Many people who have studied ancient cultures have read about the Chinese creation myth, the Mesopotamian creation myth, the Egyptian creation myth and the Christian creation myth.

Unfortunately for those who would thwart the advancement of science based on ideological belief, a creation myth is exactly what the first chapter of Genesis actually is. The word "myth," as defined by what is quite likely the most famous and well-read dictionary of the English language, perfectly describes the Christian idea of creation. From a logical standpoint, it is grossly improbable. Why must this myth be treated differently than the Greek or Mesopotamian or Egyptian or Polynesian ones? It is almost exactly the same: a supernatural being lazily wills the world into existence and is pleased with the result. If read with a logical mind, it is very, very similar to creation myths from around the world. It should, then, be scientifically treated like those other creation myths: as a maximally unlikely and illogical hypothesis which seeks to explain the origin of the world and life within it.

While the debate which rages within the country is largely one of Biological Evolution vs. "Intelligent Design" (which is Christian Creation with the word "God" taken out to appease the constitutional separation of Church and State), the fact that ID is given any merit whatsoever reaches beyond that singular debate into all branches of legitimate, real-world-based science.

I myself will expound upon one which, to my knowledge, has not been touched upon before: astronomy and cosmology, my own fields of study.

I am a deep-sky astrophysicist. I make observations of the very edge of the universe, where it behaves as it did at its very beginning. My research is pooled in with that of many other astronomers, and together, we attempt to explain what happened in the very early stages of the evolution of the universe. As a team, we try to figure out what happened so many billions of years ago so that our galaxy could give rise to a small planet, which would later be called home by what is quite possibly the most intellectual species in our small orb's history.

As such, my work directly contradicts the Christian myth of creation. Though I do not focus on the evolution of life, the evolution of the universe is my prime focus, one into which I pour a large percentage of my time.

My colleagues and I spend many hours of our time looking and thinking and number crunching and programming and talking and surmising, and ultimately, theorizing. And it's not just us, either. Biologists do this, too. And chemists. And ecologists. And for that matter, economists do it as well.

As scientists, we spend the vast majority of our lives thinking about how things work, and a majority of that time goes into actually figuring it out. In that sense, science is very personal and selfish. We spend our time doing this because we are curious. We want to know. We are on a perpetual learning spree, eager to glean everything there is to know about everything.

However, for those scientists that choose to publish their work, their time becomes a public service. They share the knowledge which they gleaned with others, giving so many hours of their time away to those that might use it to do the same. We scientists are learners for ourselves, but we are also teachers for the world.

Unfortunately for those scientists who choose to publish their work, they risk coming under fire from groups of people who know little to nothing of the published work except that it violates their ideological belief. Lawsuits are consistently filed against scientists from all fields by members of the religious political right, making anyone who has had to deal with such annoyances a modern-day Galileo.

While no scientist has had to face execution or arrest because of published work for well over a century, persecution of the scientific community still exists. We are forced to second-guess our choices to publish because our work may become the latest target for the Creation movement. In a scientific world where the working slogan might as well be "Publish or Perish," this is unpalatable. Peer-review journals criticize our work strongly enough that mediocre science never gets published. To risk real, valid science not making it out into the open because of a culture war is ridiculous.

To automatically invalidate our work simply because of a disagreeing four-thousand-year-old document written by some sexist patriarch that didn't have a clue how the world actually works is a degradation of that public service which scientists provide, and I find it personally insulting. To call into question my own intellectual value simply because I choose to root myself in the real world and obtain all my knowledge from it is grossly castigating and defamatory. To point at a paragraph, *a paragraph!* of ancient text and use it as the truth of the matter to abrogate anything that might even slightly say differently casts away all my work as a cosmologist, and all that of those that have come before me, and I find it disgusting.

[**Editor's Note:** This is a position piece and does not necessarily reflect the views of Hohonu or the University of Hawaii.]