The Religion of Science

Introduction

Humankind has always sought answers to the mysteries of life and the meaning of existence. One can imagine that the first instances of this search were stories that were passed down from one generation to the next and which later became the myths and beliefs that dominated early civilization.

We are all familiar with the story of the flood of Noah, which is canonized in the Torah and which seems to have been shared among several early civilizations. Others spoke of gods or angels who fought one another and, other than their otherworldly power, behaved much like humans did.

Later, many of these myths and stories coalesced into the many religious beliefs that we know from history, some of which died out and some of which have survived to this day in one form or another and have been incorporated into Jewish belief:

> *God stands in the divine assembly, pronouncing judgment among the divine beings* (Psalms 82:1).

As civilization has progressed and knowledge has accumulated about the world around us, and within us, humankind has developed tools to analyze and test its theories about the universe, which has coalesced into what we now recognize as science and logic.

Thus, while religion provided early answers to our questions when we did not have the tools to test our theories and beliefs, science has developed over the centuries and has slowly come to supplant religion as a means of making sense of the world. Science did not develop easily, but rather struggled under the shadow of religion to find its place, often at great cost to its practitioners. The development of science as an alternative to religion has been replete with harsh criticism and suppression by religious authorities, seeing it (correctly) as competition.

In general, it may be said that religion provided answers to existence before science and that, after the emergence of science, the scientific worldview has become the dominant means of understanding the world around us. Nevertheless, the adherents of the various religions continue to cling to their beliefs, including those adherents who accept the universal intent and outlook of science, even when scientific evidence contradicts tenets of their faith.

Consequently, for many people, science and religion continue to be perceived as competitors for dominance, one to the exclusion of the other and an adversarial relationship has developed between them. As a result of this clash, many secularists confuse antipathy toward organized religion with faith and many religionists deny the proven findings of science (even while enjoying its fruits).

How science and religion differ

Science, which is based on a method that tests itself as well as the world, is in essence very different from religion. Science is a universal means of perceiving the physical world. When proven and confirmed, the findings of science are true for all cultures and all times. Theories and facts that have been proven through science can be and are universally accepted since its findings are reproducible. On the other hand, theories that have gained widespread acceptance tend to become entrenched among their adherents, often stunting new lines of inquiry that would tend to debunk or replace them.

Religion, on the other hand, is very much associated with particular cultures and can be highly egocentric, often narcissistic and even xenophobic in its most extreme forms. Religions tend to rely on ancient texts that they claim to be of divine origin. Consequently, they are slow to change and to accept scientific findings that contradict or refute them. Believers in a particular religion consider theirs to be the right one to the exclusion of all others **even though no proof – and certainly no reproducible, objective proof – exists to back up such a claim**. This seems to be a feature of most major religions, even when some religionists consider themselves universalist in outlook and even among those religions take root in diverse cultures.

Religion assumes that:

- **For monotheistic religions**, a single eternal, omnipotent and unbounded God exists. Some religions believe in a panoply of gods. For the sake of simplicity, I will use the masculine and singular appellation, but the reader may substitute any other preferred designation, gender or plurality.
- **Humans are imbued with an extracorporeal entity of some kind (lets call it the soul)** that does not die when the physical body ceases to function. Some religions believe in human reincarnation of some form, while others believe that the lower animals also have a soul and that humans migrate to and from these lower forms of life depending on their behavior during their lifetimes.

- **A divine realm of some type exists** that is beyond the senses to which the soul passes or migrates upon the expiration of the physical body. This underlying reality is inaccessible to our instruments (which also means our eyes, ears and all else connected with the body) but is, according to some systems of belief, accessible by our minds. In Rambam's terms, such a realm is unitary and therefore cannot be divided, can only be whole and thus cannot be measured against any other thing.
- **An immutable moral dimension exists** by which humans are judged whether during their lifetimes and/or after death.

Science takes as axiomatic that:

- **Everything that exists** can be discovered, tested and reproduced through the scientific method.
- **Only the physical universe exists**, that it is finite on both the micro and macro scales, and that, even if it is vast beyond human comprehension, it can be ultimately comprehended and measured.
- **No underlying, parallel or heavenly (holy, divine) realm exists** and that, even if it does, it can eventually be penetrated and explained scientifically and described mathematically and thus can be controlled and reproduced as a holograph, other-dimensionally, multi-dimensionally or other similar theoretical construct currently in vogue.
- **Similarly, there is no proof that a moral dimension exists** and concepts such as love and our sense of justice are the products of biochemical processes that can be isolated in the brain and that can potentially be replicated in non-living entities with advances in technology.

The findings of science are indeed subject to change due to new evidence. However, at its core, **the belief that everything in the universe can be explained mathematically and scientifically is unproven**. In this way, **science itself becomes a religion because it requires that we accept the assumption that everything can be explained through it**. Science thus sets itself up as an alternative to religion (meaning belief in a divine realm) rather than as an adjunct or complement to it. Science enters the **realm of theology** when

it purports to provide a comprehensive view of life and enters the **realm of idolatry** when it excludes all other systems of belief.[1]

Scientific and religious authorities have carried on this battle with increasing severity for at least the last 500 years, a conflict in which religious authorities are slow to accept the findings of science that encroach on religious belief and in which scientific authorities wholly deny the existence of a divine realm that is beyond the reach of scientific inquiry.

Science assumes that universal laws govern the universe and that these laws are as applicable on our planet as they would be in any another part of the observable universe. In fact, most if not all scientific inquiry occurs predicated on the assumption that such universal laws exist and is intended to discover and define them.[2] Moreover, **the assumption of the existence of universal laws presupposes an intelligence**[3] (**lawgiver/creator?**) that established these laws. Unless, that is, one believes that such laws were somehow pre-existent or have come into being of themselves out of chaos, through chance or perhaps through natural selection. Such a **belief** must then accept that the laws themselves are evolving (and not from the standpoint of evolution of their understanding by humanity) and are not immutable, which in itself contradicts a basic tenet of science whereby such physical laws are fixed and thus discoverable through logic or experimentation, otherwise its findings could not be reliably (faithfully?) reproduced at all times and in all places.

Moreover, if science assumes that physical laws govern the observable universe, why couldn't such physical laws also be accompanied by or exist in parallel with moral laws?

Today, particularly in the Western world, relativism – the findings of Einstein applied to religion – dominate social discourse. In this approach, there are no immutable moral laws – only time- and place-based rules subject to temporal interpretation.

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1 As an extreme example, the Soviet Union attempted to replace religion with 'scientific socialism' and proceeded to suppress all other forms of belief.

2 According to terminology proposed by Neil deGrasse Tyson, other than the laws defined by Newton, all attempts to define universal behavior that governs the physical universe (such as relativity) should be defined as theories only (and not laws), even when proven through experimentation and observation, since they are subject to change in the future. In this framework, hypotheses are merely unproven theories. Nevertheless, I will use the term "law" when discussing both the laws of Newton and subsequent theories.

3 The word intelligence itself stems from an anthropocentric concept, which presupposes that 'intelligence' as we conceive it is the only form of 'knowing', even when we consider that 'higher' forms of intelligence may exist. Scientists thus search for 'intelligent' life like ours in other corners of the observable universe when other 'intelligence' may, in fact, not be observable.

The findings of scientific inquiry are also Earth-centric. We do not have a total picture of the universe, only what we can observe and measure from Earth or from instruments that we build and send into space. Other than instruments placed in Earth orbit, on the Moon- or in probes of the solar system, we interpret the findings of our instruments primarily on the basis of Earth-bound observations. Taken together, some of these observations have confirmed previous scientific findings and some have put into question previous hypotheses, including the Big Bang. As of now, we have only recently reached interstellar space (Voyager I passed through the heliosphere in August 2012) and we are still very far technologically from reaching intergalactic space with our instruments.

Evolution as the work of creation/creationism as the driver of evolution

One of the tests of faith – for both secularists and religionists – is the question of evolution versus creation. The story of creation as told in the Bible and the story of evolution as developed originally by Darwin approach our origin story in different ways. The first chapters of the Bible describe the world as having been created in 6 days (with some variations later on). The classical Jewish view has been that, until today, a mere 5786 years have passed since the act of creation.

In contrast, the theory of evolution describes the development of the world through a much longer time frame. What we know about the creation of the solar system and our own planet through scientific study is that our world evolved over billions of years from a mass of molten rock, cooling over many millennia more, eventually leading to the development of simple single-celled life (which may have come from outside of our solar system), later developing more complex life until reaching our current state. The period of time during which humankind developed constitutes a very short part of that timeline.[4]

This dissonance between the biblical story of creation and the findings of science has created a situation in which the two versions have been in conflict for centuries, a war in which those fundamentalists who cling to the biblical account deny the science and those who rely on the science denigrate the biblical account and those who believe in it.

To say that the Bible is a kind of scientific document as some fundamentalists do – ascribing the creation of the world to 6 days – is palpably ridiculous given our scientific

[4] *Homo sapiens* have been present for only about (0.0067%) of Earth's existence. Earth formed roughly 4.54 billion years ago, while modern humans emerged about 300,000 years ago. If Earth's entire history were scaled to a single 24-hour day, our species would only appear in the final 3.8 seconds before midnight.

knowledge. From the standpoint of pure science, the biblical account is considered to be bunk. However, such a view, it should be stated, is in itself **acceptance of the fundamentalist approach**.

Yet, the Biblical story of creation can also be seen as a progressive step-by-step process, much like the story of evolution of our planet, although it is not presented as such – developing from a formless void into light and darkness, sky, seas and land, vegetation, animal life and finally humankind.

Thus, both accounts describe the development of the earth and life on it as a step-by-step progression, even though the timescales are completely irreconcilable. Nevertheless, others have already pointed out that the biblical reckoning of one day could also be interpreted otherwise – as many years. In Psalms 90:4 we read:

> For in Your sight a thousand years are like yesterday that has passed, like a watch of the night. (Psalms 90:4)

Does this mean that each day in the biblical account of creation is literally equal to a thousand years? Or could it possibly also mean, in a figurative sense, that many years – perhaps eons – have passed?

The fundamentalist view of time, originating from a flawed understanding of the timescales of the universe diminishes the true awesomeness of the act of creation itself and the tools given to us – to reason, to explore, to learn and to develop our ability discover truths. Closing ourselves off to scientific knowledge in the face of our God-given abilities would then, in a very real sense, be a denial of the of the work of creation and thus **a form of idolatry** in that it denies us the use of the very intelligence bestowed upon us by God.

Instead, science needs to ask a simple question – if the biblical account is taken in its figurative – or perhaps poetic – sense, and reflects, to some extent or other, the findings of science, **how did the biblical account, which preceded the scientific account, come about**? From where did the idea of the progression of the development of life on earth that we read about in Genesis originate? Lacking a modern scientific approach to understanding the world, how could the author/s of Genesis have inferred a progressive development of the Earth and life on it? Did the writers of scripture perhaps misread Darwin?

Setting aside such an anachronistic absurdity, did this idea perhaps come from an earlier civilization, much in the same way that the biblical account of the flood and some laws of

the Torah originate from Mesopotamian, Egyptian and other sources? And even if it did, from where did this idea originate in these earlier civilizations? Did they develop another type of science that gave them insight into the geologic history of the early Earth and the evolutionary process, the methods and records of which have since been lost to us? Did the information reach them – as some believe – from 'ancient aliens'?

Do we carry somewhere in our genes – in our prehistoric memory – this experience of crawling out of the primordial ooze, onto land, and the slow painful development of our intellects and society?

Or perhaps, is this knowledge, which we set down in writing thousands of years ago long before development of the scientific method, exactly what it purports to be – **divinely-inspired**?

Indeed, **scientific findings not only do not refute the creation story of the Torah – on the contrary, they also affirm the process it describes**, even if not in every detail.

Understood in this way, perhaps **this conflict between creationism and evolution can be seen as a false dichotomy** – and instead **as an integrated process** in which one complements the other, a process in which **creation is the force that drives the progression of evolutionary development and evolution is the mechanism through which creation is expressed** in our world and in our universe.

The evolutionary process requires constant change and renewal in order to progress .We can ask ourselves a key question – **why doesn't the learned experience of one generation get passed on to the next**? There are plenty of examples of skills and character traits such as musical aptitude, athletic prowess and high intelligence that appear to be inherited. But the knowledge and experiences that are accumulated by our parents (and grandparents) is not. Each new generation is faced with the arduous task of relearning and rediscovery and of new learning and new discovery. The answer must be that **we are built to fail in order to progress**. Trial and error are the key drivers of evolution as well as the basis of the scientific method. We meet the same or similar challenges that our parents faced and must overcome them in our own way, in our own time, and create novel solutions appropriate to them. It is said that 'history rhymes, it doesn't repeat itself'. Each generation internalizes its lessons, each lesson creates a historical memory written into our surviving histories, both written and oral, and perhaps somewhere in our genetic code, as well. In this way, creation finds incremental expression through the evolutionary process.

Yet would it be incorrect to ascribe faith to the theory of evolution? In fact, all science is a search for underlying truths and laws about our universe. **We take on faith the belief that through the scientific method and scientific inquiry we will uncover the basis of our existence and its purpose, even though such faith has never been proven!** Are we certain that continued scientific testing and experimentation will lead us to an ultimate truth?

Are there truths that cannot be proven scientifically? I don't have an answer to that question either, but we shouldn't be so full of ourselves as to think that science alone will give us all our answers. We can say with some measure of certainty that, within the frame of reference of our world and our small corner of the universe, continued scientific inquiry will add to our knowledge and perhaps even improve our lives. But can it answer why we were made this way? **Can the theory of evolution tell us why we are evolving**? Are we indeed the *Crown of Creation*, or just another step along the way, and to where?

From the religious standpoint (and we are here today in order to celebrate the giving of the Law on Mount Sinai), evolution can thus be seen as a part of God's command – among other things, to be fruitful and multiply – and as part of the moral law – commanding us to do certain things and to refrain from others in order to evolve. We humans are given full reign over our planet. To what end remains a divine mystery, but the laws of the Torah are given to provide a framework by which to live in order to allow the process of evolution to continue.

Keep the faith/embrace the doubt

"The test of a first-rate intelligence is the ability to hold two opposed ideas in mind at the same time and still retain the ability to function" is suggested by F. Scott Fitzgerald in his book *The Crack Up* (1945).

We live at a time when the gap between religion and science continues to grow, with fundamentalism taking an increasing role in religious affairs and secular anti-religionism, which absolutely denies the existence of divinity of any type, in the public realm. This dichotomous relationship serves no one other than those who most directly profit from it.

At its core, even science takes on the mantle of theology when it denies the existence of anything that it cannot measure. Such a proposition can only be taken on faith.

On the other hand, the suppression of doubt on the basis of faith denies an instinctual and basic characteristic of human nature. It is only through doubt that we question, and only through questioning do we develop and evolve. Jacob wrestled with the angel and became

Israel when he struggled with his own doubts. By suppressing doubt, we become anti-evolutionary and thus idolatrous – frozen within an incomplete system of thought.

I began this essay by defining religion and science as two means of understanding and explaining the world – historically, first through religion and much later through science. Looked at this way, the relationship between the two is no longer dichotomous, but rather complementary in an evolutionary process. The philosopher Hegel proposed a framework to describe the evolution of ideas from thesis to antithesis to synthesis. Similarly, R. Yishmael expounded 13 principles for deriving Jewish law from the Torah. The 13th principle concerns the manner of resolving contradictions between texts that contradict one another, suggesting that a third verse be found in order to clarify how both could be true.

By keeping the faith, we continue to believe in the principles of the Torah, even when they are inscrutable, inapplicable or contradict the findings of science or good common sense. By embracing doubt, we continue to question our assumptions and beliefs, including our belief in science, which we hope will lead to a third alternative and an even higher and more sublime understanding of ourselves and our universe.

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