

Ancient Truths

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We are proud to say that Masonry has existed "from time immemorial," and as we progress in Masonry we are exposed to many symbols and emblems of ancient philosophical content, accompanied by lectures on morality and related principles.

But all of this sometimes raises a question in the minds of new members: How can philosophical thinking dating from two hundred and more years ago be of any meaning in this modern and totally different world?

Masonry is not alone in facing this question; this question confronts much of established religion as well. Surprisingly, the modern age is beginning to develop some remarkable illustrations of the relevance of the ancient truths we Masons profess, as this brief talk will illustrate.

A sage of the Seventeenth Century Jewish sect called the Hasidim or "Righteous Ones," said, "Keep two truths in your pocket and take one or the other out as suits the needs of the moment. Let one be, 'The universe was created for my sake, 'Let the other be, 'I am but dust and ashes.'"

Clearly, the Hasid meant this advice as a counterbalance to his followers' changes in mood from day to day aiding them in the task we have all set ourselves of subduing our passions. Yet he did not call them advice or epigrams, he called them "truths."

Similarly, an earlier Jewish scholar, Akiba, once said, "Everything is pre-ordained, yet free will is given." He also intended his statement to be understood as a representation of the true structure of the world.

How could wise men expect their followers to accept such contradictory statements as both being true?

From the philosophical point of view, we can attach symbolic meaning to these statements and understand their truths in a non-literal sense. We may interpret that for the universe to have been created for one's own sake, each of us is responsible for doing as much good as he can during his time on earth. To be reminded that we are "dust and ashes," is to admonish us against arrogance and believing that we are better than others, which might thereby lead us to mistreat them as our inferiors.

Akiba's formulation reminds us that each individual can choose his own deeds, no matter how fixed the course of events seems. We recall that some ancient members of the Craft chose to withdraw from a murderous conspiracy, which ultimately absolved them of their guilt, even though the ultimate design was carried out.

However, not only can these various statements be given figurative interpretation they are, in fact, meaningful descriptions of the physical universe as scientists have been able to describe it.

Let us start with a simple and familiar example. Virtually everyone in the Western world is acquainted with the Creation story found in the book of Genesis. In the story of the expulsion from the Garden of Eden, we read

that, as punishment for having eaten from the Tree of Knowledge, women are to bear children in pain and travail. There are a number of interpretations of this passage, ranging from the literal fundamentalist evaluation as actual history to radical feminist ones that view the story as men creating a justification for oppression of women. But from the point of view of biology and medicine, however, there is nothing surprising about this story. Physicians have known for quite some time that the primary reason for the difficulty of human delivery as compared to that of the lower animals is the comparatively large size of the human head at birth. Why is a baby's head so large? Because each of us is born with every brain cell that we will ever have in our lives. A smaller head size would not provide sufficient brain capacity for the development of human-level cognitive potential.

Thus, the ability to know good from evil, as described in Genesis, is inextricably linked with the pain and difficulty of human labor. When communicating the Garden of Eden story, did the ancient sages realize as much as is now understood by modern medicine but formulate the story as an allegory so as to appeal to the less sophisticated members of the community? We can only speculate.

Moving from biology to physics, we can find a more advanced example earlier in Genesis. During the Creation, as described there, we read that light was created on the first day, yet the sources of light we now see, the sun, moon, and stars, did not appear until later. Students of Scripture were puzzled at how light could exist without any of the usual light-giving bodies, and many interpretations were offered. Today, the widely-accepted Big Bang theory of cosmology tells us that the description

in Genesis is precisely the order in which things occurred. Infinitesimal fractions of a second after the "Big Bang," the universe consisted entirely of fundamental subatomic particles. Within a very short time, the unstable ones broke down into the constituents of today's universe: protons, neutrons, electrons, neutrinos and photons, or light quanta. For the first several thousand years of the universe's existence, energy, in the form of radiation, was the dominant element in the universe; there was light everywhere, without stars or planets to shine or reflect it. After an event known as "decoupling," matter replaced radiation as the principal constituent of the universe.

Millions of years later, as the universe continued to expand and the temperature dropped, the primordial soup of particles began to condense into atoms and atoms into macroscopic objects, such as galaxies, stars, and ultimately the sun and moon. To be sure, this process did not take the six days as we count time, and we can be quite certain that the ancients who wrote Genesis knew nothing of modern cosmology. Yet it is surprising to find how much of this allegory from the distant past is confirmed by our present more sophisticated understanding of science.

Let us now turn to Akiba's epigram and consider the contradiction between free will and predestination. To a scientist, it would be seen as a striking summation of the confluence of microscopic and macroscopic worlds of physics. During the late 19th century, classical physics developed the study of thermodynamics and the kinetic theory of gasses. By the end of the century, the theory of atoms and molecules was well-enough developed that the size and number of molecules was appreciated. A cubic foot of air contains sextillions of molecules of its various component

elements, nitrogen, oxygen, argon, carbon dioxide, water vapor, and so on. The classical physicists believed that they understood the mathematics underlying the physics sufficiently that, if the behavior of each molecule could be computed, the overall behavior of the gas would be known in every detail.

Of course, those physicists recognized that no such computation would be possible. Even the computers of today, which can perform over a billion calculations a second, would require many billions of years to predict the behavior of each individual molecule in a roomful of air for even a fraction of a second. Yet the overall properties of the behavior of gasses were known quite well nearly a hundred years ago. In a sense, each molecule has "free will" while the gas as a whole follows precise physical laws.

The theory of quantum mechanics takes this one step further. The Heisenberg Uncertainty Principle introduced indeterminacy into physics. No longer was it merely our inability to perform mathematical computations that limited our knowledge, but rather the basic laws of physics themselves. Even when dealing with a single molecule, atom, or subatomic particle, its behavior is predictable only in a statistical sense. Nonetheless, the Bohr "Complementarity Principle" makes it possible for everyday physical laws to continue to predict behavior of the universe, just as they did before quantum mechanics was discovered.

Thus we see that while much is predictable on a large scale, freedom or indeterminacy continues for the individual particle – a singular reflection of Akiba's statement.

So, too, can it be said that we are dust and ashes. Current thinking in cosmology and astrophysics is that the only atoms created by the process of the "Big Bang" were hydrogen and helium, along with a ferocious torrent of radiation. Yet we are clearly made of more substantial stuff. Where did the carbon, oxygen, nitrogen, and other elements that make up our bodies and the world around us come from?

Astronomers believe they came from inside stars created earlier in the history of the universe. These massive stars, far larger than the Sun, burned their hydrogen atoms to helium by nuclear fusion. Much of the helium, too, was likewise consumed, creating heavier atoms all the way up to iron, the most stable nucleus. Without further fuel, there was no energy to support the star's outer layers and the star collapsed, leading to a gigantic explosion known as a supernova, such as the one that occurred in 1987 in the sky of the Southern Hemisphere. The energy released in the explosion served both to "cook" elements heavier than iron and distribute those elements into interstellar space. These heavy elements were later condensed from the interstellar dust by the formation of new solar systems, such as ours.

So we are literally composed of the "dust and ashes" of the explosion of previous stellar systems, whose expiration made our existence possible.

Let us next consider whether the universe really could have been created for our sake. At first, this seems too self-centered a notion to be entertained. From ancient times to the early Renaissance, Aristotle, Ptolemy and their successors believed that the earth was the center of the universe, and the sun, moon, planets, and stars all revolved about it.

The Copernican Revolution put an end to that. We no longer believe that the Earth, the Sun, or even our own galaxy is the center of all Creation. However, 20th century physics brought us both quantum mechanics and relativity, and one curious feature of both of these theories is that the observer plays a critical role in determining what is observed. One famous "thought experiment" of quantum mechanics called "Schrödinger's cat" illustrates that the role of the observer can literally be a matter of life and death. Thus, a cat in a sealed box can be considered neither alive nor dead in any real sense until the box is opened and the actual fact observed. Here is a parallel to Masonry: No one can be made a Mason passively, by communication; he must observe the degrees as a participant to achieve enlightenment.

Recent thinking about the role of the observer in quantum mechanics has led to what is known as the "Anthropic Principle." It states that the universe is the way we see it because we are here to make that observation. In other words, a universe created differently, for example, with different values of the fundamental constants of physics, might be a universe devoid of life. These cosmologists reason that perhaps there have been many creations, but only this one has the "recipe" for there to be human beings alive in it. In this sense, we can see that the universe might, indeed, have been created just for each one of us.

These are not the only examples to be found. Nearly every religion expounds a Golden Rule that advocates a balance between our behavior toward others and that of others toward us. How often have we found that a kindness to another is returned to us through some unexpected means? In physics, we find that one of the most powerful set of laws is that

pertaining to symmetry and conservation. These include laws of conservation of energy, conservation of momentum, conservation of charge, time-reversal symmetry, and so on. The realm of human behavior as revealed thousands of years ago appears to be governed by just such laws, as well.

At first, we may be surprised that these ancient truths are reflected in the theories of modern science. But we should recall the words of Carlyle who said: "The universe is but one vast symbol of God," and realize that the ultimate Source of Truth has many ways to reveal that Truth. Thus it is that the philosophical and allegorical revelations available to the ancients and the scientific knowledge and understanding of the physical universe known to us today all lead to the same truth. And so we come to find that the ancient doctrines we believe and follow are confirmed to us through the science of a skeptical age!

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