

Taylor Herbert
March 13, 2013

The Inevitability of Job

Within the cosmic system that supports the archetypes of 'good' and 'evil', there is also an accepted pattern that describes the sequence of natural events and the ways in which they could occur, and therefore, unfold. While free will is considered to be all encompassing, radioactive forces in the universe are only capable of producing actions that abide the multitude of possibilities delineated before that pattern. Given the relativity of free will, Job was still responsible for his good deeds and his outstanding status in the eyes of God, however in order to fit this canonical allegory into this perspective of the universe, it is essential to account for the entirety of Job's life before and after the interference of God and The Accuser to affirm that his divine purpose was to transcend mortal being. Through investigating the totality of Job's experience with life, I hope to arbitrate whether Job's path was predetermined by cosmic forces.

Many subjects of philosophical study are evident parallels to the archetypes found in physics. Specifically relating to the elementary particles that are the simplest quanta in our universe, and the atomic processes that describe and can even predict a litany of natural events; even time is most accurately told on Earth through an atomic clock. What is this ethereal pattern, one might ask? The pattern consists of predetermined systematic organizations of both spatial and temporal fields. On the x plane, the pattern relates the spatial organization found in an atom, including the contents of subatomic particles, as well as their hierarchy of size, to any static system model such as a group of people, or in this case, one person and the prioritized elements of their life. On another level, the pattern represents y plane events as well, accounting for processes that occur throughout time following the example of radioactive isotopes.

This comparison puts Job the Atom on a proposed track of subatomic events inspired by his own life. This track is not too different from the series of events we are taught to consider in writing, with rising actions, a climax and a 'resolution', which humans have resonated with for the same reason of its inherent truth. This sequence is also laid out before us as the sinusoidal lifecycle of isotopes. As Job moves through time, he gains more and more power until he reaches instability at optimum capacity and thus forth regresses (decays) at an exponential rate. With the obtainment of energy, Job's atomic model changes as he grows as a person. When Job is born, he begins as a single electron orbiting a nucleus holding only a single proton, a molecule capable of tremendous growth, and as he works, suffers (exerts energy) to acquire his cattle and livelihood and expands his family, his atomic model complicates.

There are infinite isotopes that can exist, however Hydrogen is the most abundant element in the universe, accounting for about 75% of normal matter originating during the Big Bang. Second to Hydrogen in abundance is Helium, in stars, Hydrogen atoms fuse to form Helium, which collectively makes up a total of 99.9% of known matter. 99.8% of Hydrogen is ^1H , a nonradioactive protium isotope has a nucleus with 1 proton and 1 orbiting electron. While protium has no neutron in its tiny nucleus, it is free to collide and capture free neutrons, forming isotopes ^2H , deuterium with 1 neutron, and ^3H , tritium with 2 neutrons. Protium makes up most of all Hydrogen because, due to its lack of neutron, is unable to bond with another protium until a neutron is acquired. While deuterium is stable as well, it quickly bonded with other deuterium to form Helium-4, which makes up most all of Helium matter in the universe. Only trace amounts of ^3H , or tritium, exist in the universe because it is a highly unstable, radioactive isotope, unlike the previous variations. Radioactive elements such as tritium will spontaneously

change into a different atom in a process referred to as radioactive decay. Occurring naturally through interaction of cosmic rays with atmospheric gases, tritium has a half-life of only 12.3 years before undergoing minus beta decay, which transmutes excess neutrons into a proton and an electron and emits a high energy beta particle, resulting a smaller, more balanced daughter nucleus with a greater binding energy than its parent and an additional proton. The product of tritium undergone minus beta decay is Helium-3, the only other stable isotope with more protons than neutrons besides protium. Only trace amounts of Helium-3 even exist, even though it is stable and occurs naturally, most likely because it attracts neutrons and becomes Helium-4 which is more stable and is capable of fusion/fission.

Stability of an isotope is described by a quantity called binding energy, which is the minimum amount of energy required to disassemble a system that is bound by weak nuclear force with and the assistance of neutrons, like subatomic particles are. The weak force is essentially responsible for the onset of the beta decay, represented by the W boson, which is electrically charged and changes the very make up of particles on the quark level. W bosons are much greater than mass than a proton and therefore can only exert force small distances and periods of time, hence the name weak. This endless process of bonding and decay that began at the Big Bang, to form something greater than one's original self, is the sheer essence of purpose in the universe, that resonates throughout all of its contents.

As a man of fervent faith, Job is motivated by his desire to serve God as a successful and upstanding citizen, and as a result quickly achieves worldly objectives. What Job doesn't realize, is that his supposed greater purpose, which he believes, is to serve a higher power, is actually just the cosmic purpose of his entire life, ultimately resulting in self destruction upon completion and

the subsequent reformation into something truly greater. While this may seem dark and probably very dense, the lifecycle of a radioactive isotope is the universal archetype, specifically for events that befell upon Job.

So begins Job's life, there are multiple perspectives that could be taken on this but for the sake of this model, Job is born as protium and manifests 'neutrons' through means of his successful bounty, deuterium, and subsequently through the great expansion of his family, tritium. At the beginning of the book, Job is already exorbitantly wealthy, with seven thousand sheep etc., and has a wife and 10 grown children; he has manifested fully as tritium and has stagnated, reaching the half-life, or climax, of this allegorical isotope. It is at this point that God and The Accuser notice Job for his accelerated success and high energy and the trials begin. I would compare this moment to the buildup of electromagnetic and weak forces that would result in the appearance of the W boson. The W boson turns one neutron into a proton on the quark level. This subatomic process of minus beta decay, also describes Job's decay.

The first affliction upon Job was from the Sabeans who take Job's oxen and donkeys, killing the servants who were with them; then there is the fire from heaven that burns up Job's sheep and his servants who were with them. Then the Chaldeans take Job's camels, killing the servants who were with them. And then worst of all a great wind kills all of Job's children by collapsing of his oldest son's house. One event after another, almost simultaneously, racked through Job's world, left with nothing but blistering sores. This is decay, the electroweak force which shatters the binding energy of the atom, transforming the neutron into a new proton, blasting the external highly-charge electron and electron antineutrino out of the shell, forming an entirely new stable Helium-3 atom out of the daughter nucleus. Fire from heaven, fierce winds,

loss of cattle to external forces, I would say these are complicated parallels of the archetype of the decay process. The Book of Job even accounts for the resurrection of Job's livelihood in the end with new children which embodies the essence of him being reborn as Helium-3 through a cosmic, atomic revelation to transcend from one plane and literally float to the next as a noble gas.

Another interesting aspect of this comparison is that God and The Accuser make a wager, which indicates there being another possible outcome. In the minus decay process, the W boson can affect the down quark of the neutron and transform it temporarily into an up quark but can ultimately revert back into a down quark without furthering the decay process if not provided with enough energy. Also the duality of the unseen forces in this equation can be described by the negatively charged W boson as The Accuser and its neutral antiparticle Z boson as God. The W and Z bosons are considered two chiral sides of the same weak force executor. This means that when The Accuser comes back and says it may not be enough, it could point to a necessity to either increase the energy of the second boson, or attempt to affect a different neutron.

The most fantastic product of this comparison is that the use of science to analyze a biblical text coincides with the idea of Job's being intervened divinely by greater forces instead of negating it. Pantheism, which regards the universe as a manifestation of God, is similar except I feel it is more evident that God is just a graspable conceptual version of nuclear force; the ancient Greek name for the sun diety Helios, would have been more accurate.

Greek philosopher Epicurus who was taught that the purpose of life was to obtain tranquility and peace with the avoidance of pain and suffering. He also put out a series of

questions addressing the semantics of God's omnipotence that were sometimes used by atheists as contrary evidence to the existence of God.

“Is God willing to prevent evil, but not able? Then he is not omnipotent.

Is he able, but not willing? Then he is malevolent.

Is he both able and willing? Then whence cometh evil?

Is he neither able nor willing? Then why call him God?”

Another view on the will of God comes from Elie Wiesel *The Trial of God*, which states that "Surely any God worthy of the name would not only refuse to condone such brutality but would expend all of the divine effort necessary to bring the brutality to a halt, and initiate the work of passionate rebuilding." This theme resonates in the Book of Job as well, since it is God's will "to destroy [Job] for no reason". However, my point is to say that nuclear force has no will, no sentience, no gender, no body, and no face. It just is, but just because divinity can be broken down to nature, it doesn't make it any less any less beautiful.

As a physical parallel to The Book of Job, I feel the atomic model represents the fundamental elements of his life and how they reached a point of energy capacity throughout time. All energy diverges in the universe and understanding the beginning to end of the primordial atom through cosmic forces puts together a more complete and cyclically sensical model of the purpose to Job's experience.

This paper is written to honor the legacy of the late Stephen Hawking.

Sources:

Wiesel, Elie. *The trial of God*. New York: Schocken Books, 1995.

Slane, Rob. "Epicurus and the problem of evil." *The American Vision*. May 17, 2013. Accessed March 14, 2018. <https://americanvision.org/7989/epicurus-problem-of-evil/>.

" β Decay : Weak Forces." *Radioactivity : β Decay : Weak Forces*. Accessed March 14, 2018. http://www.radioactivity.eu.com/site/pages/Mechanism_beta_decay.htm.

Smoot, George F. "In the beginning..." *Formation of the elements/Nucleosynthesis in the early universe*. Accessed March 14, 2018. http://aether.lbl.gov/www/tour/elements/early/early_a.html.

"Tritium Fact Sheet." *Nation Nuclear Security Administration*. Accessed March 14, 2018. <https://nnsa.energy.gov/sites/default/files/nnsa/multiplefiles2/Tritium%20Fact%20Sheet%20Oct%2017%202011.pdf>.

"CERN Accelerating science." *W boson: Sunshine and stardust | CERN*. Accessed March 14, 2018. <https://home.cern/about/physics/w-boson-sunshine-and-stardust>.

"Beta Radioactivity." *Radioactivity*. Accessed March 14, 2018. <http://hyperphysics.phy-astr.gsu.edu/hbase/Nuclear/beta.html>.