Causality

In 1931, Universal Pictures released a movie entitled *Frankenstein* in which a mad scientist assembled a monster from dead body parts. In that old film Dr. Frankenstein hoists the assembled body parts into the loft of his laboratory during a thunderstorm. The lightning strikes and the monster moves. "It's alive!" he cried.

Events in that loft confirmed Doctor Frankenstein's theory that organic material—in this case a body already grown into human form—and energy supplied by lightning were the ingredients necessary to produce life. Not to be forgotten of course was the craftsmanship of Dr. Frankenstein who assembled the organism and the apparatus upon which he performed his extraordinary experiment.

But was this science? No. This was fantasy—horror fiction. It was fiction masquerading as science.

A writer for Popular Science updated this formula for producing life in 1997 by saying that the organic material might come from comets that strike the earth. She wrote,

> Comets, formed from interstellar material, may have sown the seeds for life—water and carbon-rich chemical building blocks—when they collided with Earth over the eons.[1]

In the same article she wrote,

> "Comets are now putting an older theory regarding life's origins on Earth in doubt. Most scientists had believed that 4 billion years ago, volcanoes spewed gases and water onto Earth's barren surface. Then, lightning stirred the

[1] Popular Science, August 1997, p. 65, "*Lessons from Hale-Bopp*", by Mariette DiChristina.

> primordial soup, creating complex carbon-based molecules that eventually began to replicate."

In other words a version of *panspermia*[2] replaced spontaneous generation of life. This idea persists today.

The ill-fated Russian space probe, Fobos-Grunt, contained an updated experiment to test the *panspermia* hypothesis. That probe suffered a failure of its cruise stage rocket in 2011 and did not leave low earth orbit for Mars. Fox News reported that Fobos-Grunt was,

> …carrying a fascinating Planetary Society experiment called the Living Interplanetary Flight Experiment, or "LIFE." LIFE is composed of many different types of bacteria to small organisms that seem to tolerate the space environment pretty well. "Tardigrades" -- known as water bears -- were also a part of the payload. Why send microscopic organisms to a Martian moon? In an effort to understand how life appeared on Earth, the experiment would have put the hypothesis of *panspermia* to the test. *Panspermia* is a proposed mechanism by which life may "hop" from one planetary body to the next -- meteorites slamming into Mars, say, ejecting many tons of debris into space. Should any organisms be "hitching a ride" on the debris, could they (or at least their genetic information) survive the interplanetary journey, and atmospheric entry, to spawn life on another world?[3]

An experiment like this might tell if bacteria can travel from one planetary body to another by natural means, but it still does

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[2] **Panspermia** (Greek: πανσπερμία from παζ/παν (*pas*/pan) "all" and σπέρμα (*sperma*) "seed") is the hypothesis that life exists throughout the Universe, distributed by meteoroids, asteroids and planetoids.[1]

[3] *Toxic Russian Mars Probe Likely Heading Back To Earth* | Fox News: http://www.foxnews.com/scitech/2011/11/11/toxic-russian-mars-probe-h...

not establish the cause of life. The origin and cause of life are only moved farther away from earth, and farther back in time.

Nevertheless, the formula remains substantially the same: organic material placed in the correct environmental conditions, lightning, and then—life!

The obvious problem with this explanation is that no one has ever seen it happen in reality. Moreover, no one has ever established a causal connection between organic material, environment and life. To be sure they exist together, but which is the cause of the other? When has a reputable scientist ever performed an experiment to prove that lightning acting upon organic chemicals causes life? Is there a causal connection here that textbooks on science have somehow failed to document?[4] Then again, perhaps this chapter of "science" is exempt from those stubborn and unpleasant empirical tests?

The Principle of Causality says that there must be a cause for every effect. And every effect is a part of a chain of causality. There is the story of the science teacher who lectured his class one day about cause and effect. He said, "It is an axiom of science that for every action there is a reaction. For example, what happens when you step into a bath tub?"

"The telephone rings," a student answered.[5]

The teacher was not looking for that answer, but the story illustrates how some people tend to associate things that are not related. The same might have happened to you, but no matter how strongly you believe in the connection, stepping into a bathtub is not the cause of a telephone call.

[4] "Correlation does not imply causation" is a phrase used in science and statistics to emphasize that a correlation between two variables does not necessarily imply that one causes the other. Wikipedia.

[5] Spinrad, Leonard and Thelma, *Speaker's Lifetime Library*.

Induction is one of the tools the scientist uses to determine the cause of a phenomenon. The Principle of Causality is the basis of Induction. The Principle of Causality is a self-evident principle that states that nothing happens without an efficient cause. By cause is meant: that which contributes positively to the production of a thing.[6] Nothing "just happens." (It does not matter what the bumper-sticker says.) For every event there is a cause. Without this principle there could be no science.[7] Irving Copi said,

> "It is a fundamental axiom in the study of nature that events do not just 'happen,' but occur only under certain conditions."[8]

The Discovery Channel and ABC produced a television special to report on the landing of an American space probe called Pathfinder on the planet Mars in the summer of 1997. The name of the program was Mars Live. One of the main themes used by the host was the search for life on other planets of our solar system, and among the stars of our galaxy.[9] Robert Krulwich reporting from the Johnson Space Center, Texas, said, "When we look up at night everybody wonders, 'Could it be we're the only ones here?' Then the report quotes the late Stephen Gould of Harvard,

> "We have every reason to expect that life is a very common phenomenon. If ever the planetary conditions are right you are going to get life." [10]

Krulwich continued,

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6 Brusher, Edward W., Logic.

7 Copi, Irving M., Introduction to Logic.

8 Ibid, p. 355.

9 Discovery Channel Mars Live program July 4, 1997. A presentation of Discovery News and ABC. Host Steve Aveson, ABC News.

10 Gould, Stephen Jay. Harvard Paleontologist.

> "Well, we have visited other places, and we have never found a single speck or sign of life. Not on the moon. It doesn't have the right conditions. Not on the surface of Mars, so far as we know. We do know that billions of years ago Mars was covered with water, but now it's too cold and too dry. But perhaps life is hardier than we think."

Krulwich also said,

> "Well, apparently all you really need to create the possibility of life is something wet, and something warm. Heat and water. Anywhere in the solar system, and you may find it here on the top, on the surface. You may have to drill down a bit. But those two ingredients together create the possibility of life."

He quoted Richard Terrile of the Jet Propulsion Laboratory who said,

> "You put those ingredients together with enough time—and on Earth, those same ingredients and less than a billion years, gave rise to life." [11]

Krulwich concluded,

> "So life on Earth may not be so special, because with the right mix of water, heat and organic matter, life could be inevitable. All we have to do is figure out where to look, and how to pay for the trip." [12]

Terrile's statement is as remarkable as it is unscientific. He believes that to cause life there need only be present together: water, heat, organic matter and enough time. But it matters not how many items are on the list. If a cause for the appearance of life is not identified, then listing the circumstances tells nothing. Terrile commits a fundamental error in reasoning, the error of *post hoc*.

[11] Terrile, Richard. Jet Propulsion Laboratory.
[12] Krulwich, Robert. ABC News.

The error of *post hoc* attributes as a cause of a thing that which merely accompanies or precedes it. The Latin phrase is *post hoc ergo propter hoc*. It means: after this therefore because of this. It is also known as the fallacy of false cause. Superstitions are examples of this fallacy in reasoning. Some examples are "walking under a ladder brings bad luck," or "a rabbit's foot brings its owner good luck." Neither the position of a ladder, nor the presence of a rabbit's foot is a cause of "luck." There is no link of causality between them. In years past, scientists attributed the cause of malaria to vapors that arose from the swamps. It is true that vapors do arise from the swamps where malaria prevails, but the vapors are not the cause of the illness.

When I was a boy a neighbor told me that if I put a hair from a horse's tail in a bottle of water, sealed the bottle, and placed it in a dark place for a while, the hair would become a worm. I was skeptical, but I decided to carry out the experiment anyway. I found a Mason jar my mother used for canning. Somehow I located a hair from a horse's tail. I filled the jar with water, put the horse's hair in the bottle, sealed it and then placed it on a shelf in a dark corner of our cellar. I watched that jar for weeks. I never did see a worm in there. By this experiment I learned early in life the error of *post hoc*. Neither water, darkness nor a horse's hair is the cause of worms. Nor are water, warm temperatures and amino acids the causes of bacteria. Or any other living creature for that matter.

It was T. H. Huxley who said,

> "Science is simply common sense at its best—that is, rigidly accurate in observation, and merciless to fallacy in logic." [13]

[13] Prochnow, H. V. and H. V. Jr., *The Public Speakers Treasure Chest*.

The logic of Richard Terrile deserves no mercy, and Huxley should have followed his own advice.

The truth is that the people quoted by the Discovery Channel's special report are men of faith. They do not believe in God, but they do believe in Nature. They have taken the great "leap of faith" that life arises naturally from the universe. They give no reason for it, except Evolution. Ray Bradbury, speaking of the mission to Mars, correctly identified the reason these "scientists" are proponents of planetary probes to look for extra-terrestrial life,

> "This is not a technological feat; it's not a military feat; it's a religious endeavor in the best sense of that term."

Bradbury, the writer, knows the reason. The scientists who were interviewed for the report might know, but that is doubtful. Apparently, they believe it is science.

Asa Gray, an American botanist and taxonomist who served as a Harvard professor, said, "Faith in order, which is the basis of science, cannot be separated from faith in an ordainer, which is the basis of religion." Order does not just happen; someone must put things in order. The scientists from Harvard and the Jet Propulsion Laboratory, interviewed for the Discovery report, have as their ordainer the material universe. They see themselves as "children of the universe," and Robert Jastrow wrote their book of genesis. [14] If they listened to Asa Gray they

[14] Robert Jastrow is the author of *Red Giants and White Dwarfs*, a book that declares the stars of heaven to be the sources of all atomic building blocks both for animate and inanimate things. He said in the preface to his book,

"The scientific story of creation touches on the central problems of man's existence: What am I? How did I get here? What is my relation to the rest of the universe? The ideas are simple and beautiful; they can be expressed in clear language, without the use of jargon or mathematics. The story of man's origins goes far beyond the concepts of Darwin; it begins earlier than the time of our tree-dwelling ancestors, and much earlier than the

would know that their faith in the universe is the basis of their religion.

The evolutionist believes that life arose upon the Earth from non-living material. Materialistic evolutionists argue that the combination of the materials came about by accident. From that colossal accident that produced the first single-celled life—all life arose. The evolutionist offers this same reason to explain his belief that life exists on other planets. Advocates of *panspermia* only move the accident of life farther out from the Earth or farther back in time.

The evolutionist might reject the idea that life arose by accident and instead say that the universe itself contains a principle that engenders life. They would argue that life is inevitable given enough time. This idea is similar to the line given to Ian Malcolm (Jeff Goldblum) in the movie, *Jurassic Park*: "Life finds a way." The idea of a life "force" as in the *Star Wars* movies is reminiscent of a universe pervaded by a life force that empowers the individuals that inhabit it. This idea more nearly resembles pantheism[15] than science because it relies upon philosophy rather than empirical evidence.

The logical problem with the idea that life arose by accident is that by its nature it is an event that cannot be observed. Obviously, a living witness would have to be present to make the observation, and that presents a dilemma. Since no one has experienced life arising by accident—in a scientific sense—it is, therefore, not science.

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period, several billion years ago, when the lowest forms of life first appeared on the face of the Earth; it crosses the threshold between the living and the non-living worlds and goes back in time to the parent cloud of hydrogen out of which all existing things are descended."

[15] pantheism: a doctrine that equates God with the forces and laws of the universe.

Scientists regard every explanation of phenomena as an hypothesis. They judge an explanation as worthy of acceptance only if there is evidence for it. The word "evidence" as used here, and by the scientist, refers to experience. The evidence must be of the kind that the senses may detect it; that is, detect it by sight, hearing, smell, touch, and taste. Science is empirical, meaning that it relies upon observation. Therefore, a scientist regards a hypothesis as scientific only in so far as it can be tested by observation. For example, one can test Isaac Newton's hypothesis about gravity. Indeed, so many people have tested and approved Newton's explanation of gravity that it has achieved the lofty status of a "Law of Gravitation."[16]

On the other hand, no one has confirmed the accidental appearance of life either by observation or by test. If life by spontaneous generation were a valid scientific hypothesis then it could be tested. The test would be either direct, or indirect. Either the scientist could look at the event taking place as it happened (direct), or he could deduce a proposition from the idea of spontaneous generation of life that could be tested directly (the indirect method).

If life were a phenomenon resulting from material causes then the scientist would be able to identify the conditions under which life would occur. He would be able to specify the *necessary* conditions and show that in their absence life could not occur. Further, he would be able to show that certain conditions were *sufficient* for life to occur and that in their presence life must occur.

To prove the hypothesis that life arose from material causes one must state the *sufficient* cause or causes. This has never been done.

As to the probability that life arose by chance combination of materials, consider this absurdly simple organism: the organism

[16] Ibid., Copi, pp. 423-425.

is composed of only 100 integrated parts where each part performs a unique function. There is therefore only one way the parts can be combined to function effectively. The chance that these parts would accidentally come together in the correct way is "one" in 10^{158}. If the age of the universe, as the evolutionist says, is 30 billion years, then there have been about 10^{18} seconds. Not only is there not enough time for all the "attempts" at combination, but there is no guarantee that the combination will result in a living organism.

Yet, an organism of 100 parts is impossibly simple. In order to enable astronauts to recognize the most rudimentary forms of life, NASA sponsored research that showed the simplest type of protein molecule that could be termed "living" is composed of at least 400 linked amino acids, and each amino acid is a specific combination of four or five basic chemical elements. [17]

Do we need even to mention the complexity of a DNA chain?

Life could not have arisen on other planets for the reasons given by the evolutionist, because life could not have arisen anywhere for those reasons. For life to arise on Mars there must be an efficient cause, and as a logician would say the reason must be necessary and sufficient. Warm and wet are not sufficient reasons.

The True Cause

The resolution to the dilemma that a living witness must be present to observe the beginning of life is as satisfying as it is simple. We have a witness.

Jesus said,

[17] Ibid.

> Matthew 19:4 … "Have you not read that He who created them from the beginning MADE THEM MALE AND FEMALE…

Stated another way, Jesus said that the Creator caused man and woman to come into existence. The Creator gave them life. The Creator was there at the creation of human life and then told us how it happened.

In philosophy, a testimony is known as statements that are based on personal experience or personal knowledge. A statement is accepted on the basis of person's testimony if his or her asserting it renders it acceptable. We cannot, rationally, accept a claim on the basis of another person's testimony if even one of the following is found to be true: 1. the claim is **implausible**; 2. The person or the source in which the claim is quoted lacks **credibility**; 3. The claim goes beyond what the person could know from his or her own **experience** and **competence**.[3]

The Christian can argue that Jesus is a competent witness to the creation of life if He is truly the one He claimed to be; namely, the Messiah the Son of God.

The claim that Jesus is a competent witness is plausible if indeed He was there at the creation. John, in his gospel, says that He was. John maintained that Jesus is the Logos, the Word, and that the Word is God. John said,

> John 1:3 "All things came into being through Him; and apart from Him nothing came into being that has come into being."

His credibility rests upon two pillars. He as the Logos performed the creation, and as God the Son He never lies because it is impossible for God to lie.

That the creation is within the experience of Jesus Christ rests upon the truth of the assertion that He is the Christ the Son

of God. For this God has offered proof by raising Him from the dead.[18]

Both Matthew and Mark wrote that Jesus said, "…God made them male and female."[19]

Therefore, Jesus makes a plausible claim that God is the First Cause of human life and His testimony should be accepted because He is a competent, credible witness who was there to experience the creation first hand.

[18] Acts 17:31.
[19] Mark 10:6; Matthew 19:4.