

The source of life essay

[Environment](#), [Earth](#)



The question of where life originated is almost as old as life itself. While humanity has likely always been self-aware, at least as long as it has existed, the source of the first life on Earth is still a mystery. In ancient times, cultures came up with cosmogonic myths that sought to explain the source of life. One example is the Judeo-Christian cosmogonic myth, in which God is an immortal being who was the only Life, hovering above some waters, before creating what would become the planet Earth and then filling it with life. There are other myths that envision a giant egg floating and then being cracked in half by conflicts among the gods, splitting into the sky and the land/water.

The evolutionary theory of Charles Darwin purported to take all of the divine mystery out of the question of life on Earth. His work *The Origin of the Species* suggested that humanity emerged from a series of developments affecting earlier primates. Life itself, according to proponents of this theory, grew out of what was known as “Haldane’s Soup,” becoming increasingly complicated through a series of evolutionary changes that resulted in the immense biodiversity of life on the planet as we know it now.

All of this begs the question of what the first spark was that started life, and where that life came from. Even the mysterious soup had to have a spark that set the first changes into motion. Those who believe in a “Big Bang” theory for the origin of the universe still are left at a loss when it is time to explain how the swirling masses in the universe somehow coalesced into a planet with literally millions of species (assuming that Earth, of course, is the only planet fostering life, which is far from certain).

A 2013 study suggested that all of life on Earth may originally have come

from Mars. The reason behind this theory is that the Red Planet is home to many of the minerals that are most effective at building RNA (ribonucleic acid). This substance is one of the central elements of life; many scientists believe that RNA is actually older than DNA.

Growing on Earth, these materials would have dissolved in the sea, because water is a corrosive substance for RNA. However, on Mars, there are not the immense bodies of water (or the water-rich atmosphere) that is present on Earth. Life could have sprung up on Mars and then flown to Earth aboard meteorites.

The central focus of this investigation is the way atoms arrange to make DNA, RNA and proteins. American scientist Steven Benner asserts that minerals containing oxidized molybdenum and boron were an important part of the original process, but at that stage, Earth lacked the ability to support the appearance of these minerals. After analyzing a Martian meteorite, scientists discovered that boron was present on Mars. Scientists later came to believe that molybdenum in oxidation was also present on Mars. The conclusion of this study is that, in reality, life began on Mars and traveled to our planet on a meteorite (Cantor).

Of course, if this is true, it is extremely fortuitous, given the low probabilities involved in meteorites from Mars happening to hit the Earth at the right spot. Another theory involves the work of hydrothermal systems, or hot water systems that appear in places where volcanic activity has taken place. Under the crust, molten rock gives heat to the groundwater. The result is geysers and hot springs, such as Yellowstone and Hot Springs in the United States. Some of these hydrothermal systems were created by impact craters. When

meteors strike the earth and cause an impact, they leave behind so much energy that it is quite easy to heat water and make it circulate throughout the crust of the Earth. Evidence of these hydrothermal systems still exists, although the vast majority no longer have active geysers or hot springs shooting up into the air. It is possible, then, that volcanic activity and impact cratering provided the energy levels necessary to change chemical compounds into organisms and may have created the sort of habitat that these early forms of life needed to thrive and evolve.

The question of where life began and where life came from is one that scientists never answer conclusively. This question is made even more complicated by the discovery of other planets with the same relative size and distance from their stars as the Earth. The sheer distances between our planets means that it may be centuries, or even millennia, before any communication takes place between planets that have sentient beings. As further research takes place on the surface of Mars, it may be that scientists will unlock more secrets of the actual source of life. For now, though, there is nothing definitive to separate one theory from another. It is likely that all of the suggested possibilities played a partial role in the development of life on our planet.

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