

Overview

The Gaia Paradigm

While reading on about the science of Gaia Theory – below and throughout this website – consider the term “Gaia Paradigm.” This phrase refers to the confluence of the best available scientific understanding of Earth as a living system with cultural understandings of human society as a seamless continuum of that system. The “Gaia Paradigm” employs the powerful metaphor of “Gaia” to take the perspective of human beings as part of a living system. This encourages us to explore scientific insights from scientists that have been associated with “Gaia Theory” and from those who identify themselves as researchers in “Earth system science” or other disciplines. The “Gaia Paradigm” is a context in which our society’s “cultural narrative” can best reflect and incorporate these scientific realities.

What is Gaia Theory?

Pick up a newspaper or listen to the news and you’ll quickly see that our understanding of the Earth and our relationship to it has never mattered more. The Gaia Theory offers insights into climate change, energy, health, agriculture, and other issues of great, if not urgent, importance.

Overall, the Gaia Theory is a compelling new way of understanding life on our planet. It argues that we are far more than just the “Third Rock from the Sun,” situated precariously between freezing and burning up. The theory asserts that living organisms and their inorganic surroundings have evolved together as a single living system that greatly affects the chemistry and conditions of Earth’s surface. Some scientists believe that this “Gaian system” self-regulates global temperature, atmospheric content, ocean salinity, and other factors in an “automatic” manner. Earth’s living system appears to keep conditions on our planet just right for life to persist! The Gaia Theory has already inspired ideas and practical applications for economic systems, policy, scientific inquiry, and other valuable work. The future holds more of the same.

Understanding Gaia Theory

The Gaia Theory posits that the organic and inorganic components of Planet Earth have evolved together as a single living, self-regulating system. It suggests that this living system has automatically controlled global temperature, atmospheric content, ocean salinity, and other factors, that maintains its own habitability. In a phrase, “life maintains conditions suitable for its own survival.” In this respect, the living system of Earth can be thought of analogous to the workings of any individual organism that regulates body temperature, blood salinity, etc. So, for instance, even though the luminosity of the sun – the Earth’s heat source – has increased by about 30 percent since life began almost four billion years ago, the living system has reacted as

a whole to maintain temperatures at levels suitable for life.

The Gaia theory was developed in the late 1960's by Dr. James Lovelock, a British Scientist and inventor, shortly after his work with NASA in determining that there was probably no life on Mars. His research led to profound new insights about life on Earth. The theory gained an early supporter in Lynn Margulis, a microbiologist at the University of Massachusetts. In the past 15-20 years, many of the mechanisms by which Earth self-regulates have been identified. As one example, it has been shown that cloud formation over the open ocean is almost entirely a function of the metabolism of oceanic algae that emit a large sulfur molecule (as a waste gas) that becomes the condensation nuclei for raindrops. Previously, it was thought that cloud formation over the ocean was a purely chemical/physical phenomenon. The cloud formation not only helps regulate Earth's temperature, it is an important mechanism by which sulfur is returned to terrestrial ecosystems.

The Gaia Theory has inspired many leading figures of the past 20 years, including Vaclav Havel, John Todd (inventor), Freeman Dyson (physicist), Al Gore, Joseph Campbell (mythology expert), and Elisabet Sahtouris (microbiologist). These and many other people have written and spoken eloquently about how the Gaia Theory can help us model human activities after the living systems of our planet; the concept offers lessons for the design of economic, energy, social and governmental systems.

– [Martin Ogle on Gaia Theory](#)

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