

By Rajeshwari Prakash

Encouraging reverence for Earth as a living being, the Gaia hypothesis, Dr James Lovelock's lasting contribution to ecology, is acquiring increasing recognition as our planet fights for survival

Every time I see mountains or take a walk by a stream, I know that creation is not here just for us to take care of. I feel creation is here to awaken and replenish our faith. The ancient masters were careful observers of the natural world and knew that the mountains, rivers, rain, clouds, water, fire... are all living entities that possess consciousness. They observed the delicate balance of the ecosystem and the long-lasting effect on all aspects of life when that equilibrium is disturbed. They learnt to commune with nature and cooperate with her plan.



Holism, Douglas R. Hofstadter says, "is the most natural thing in the world to grasp. It's simply the belief that the whole is greater than the sum of its parts". The prime word used to describe New Age is 'holistic', a word that focuses attention on the whole, the universe, the ultimate reality as a whole reality and not just a mystical reality. The vision of the whole under a variety of names is a common end point of mystical experiences of all cultures. Philosophically, the universe is the ultimate whole system that includes a number of other systems at differing levels. All systems are intricately connected and interdependent, with each part reflective of the whole.

The most important of whole systems for the New Age is the earth. It is a whole system of which we as human beings form an intricate part. Our welfare depends upon the earth—a concern that takes its most dramatic form in the 'Gaia hypothesis', which proposes that the earth is a self-regulating organism, or as evolutionary biologist Lynn Margulis calls it, a "super organismic system", a living entity, and humanity is a vital part of its life system.

The Gaia hypothesis is simply that idea that the Earth is a living organism complete in itself. And that all life forms are but a part of Gaia.

For James Lovelock, the idea hit him from outer space. In the 1960s, during the space race that followed the launching of Sputnik, he was asked by the Jet Propulsion Laboratory and NASA to help design experiments to detect life on Mars. The Viking gathered and tested some Martian soil for life, with no results. Lovelock had predicted as much just by analyzing the atmosphere of Mars: it is in a dead equilibrium. By contrast, the atmosphere of Earth is in a "far from equilibrium" state—meaning that there was some other complex process going on which maintained such an unlikely balance. It occurred to him that if the Viking had landed on the frozen waste of Antarctica, it might not have found any trace of life on Earth either. But a sure give-away would be a complete atmospheric analysis... which the Viking was not equipped to do. Lovelock's approach was not popular because NASA needed a good reason to land on Mars, and the best was to look for life.

This, however, led to Lovelock perceiving the earth as a complete whole. While on a walk in the countryside in England, Lovelock described his hypothesis to his neighbor William Golding

(author of *Lord of the Flies*), and asked advice concerning a suitable name for it. The result: 'Gaia'—after the Greek goddess who drew the living world forth from Chaos—was chosen.

Lovelock acknowledges that he was not the first to conceive the idea of biological regulation. Scientist Alfred Redfield put forward the hypothesis as early as 1958, when he theorized that the chemical composition of the atmosphere and oceans was biologically controlled. While other scientists had also considered the same hypothesis, the idea never gained much audience and even the papers co-authored by Lovelock and Lyn Margullis largely went unnoticed until Lovelock's book, *Gaia: A New Look at Life on Earth*, caught attention. In the book Lovelock states that humankind is part of an overall complex biosphere organism. People along with all other life forms on the planet, make an integral contribution to Gaia's homeostasis, which in turn makes life possible.

Critics of the hypothesis contend that life on the planet was created by and is maintained through a series of fortuitous events. Some scholars blame early Western thought: the simplistic dualism of Platonic philosophy that separates the ideal from the phenomenal world, and the Christian religion whose transcendent God exists apart from nature. In contrast, Eastern philosophies and religions conceive of an interconnected web of life on Earth and throughout the cosmos, in which nature and all sentient beings are sacred.

In reflecting on the work of Plato and Pythagoras, we find their themes "know thyself (microcosm) and you will know the universe (macrocosm)" particularly relevant in the understanding of this hypothesis. Many physicists who have studied Taoism, Hinduism and Zen Buddhism find many parallels to 21st century high energy physics, particularly when equated to meditation and other disciplines such as yoga, Tai Chi, Kung Fu and so on. Fritjof Capra, in the introduction to his ground-breaking book, *The Tao of Physics*, says: "Science knows the roots and mysticism knows the branches and the challenge of today is to bring these two disciplines together and join them at the trunk."

Tantrics assert that the planet Earth and all it contains is one conscious entity, even though it may seem separate from us. Apparently we are born and we die, while the planet goes on living. But the truth is that what we experience as birth and death is simply the consciousness of Earth assuming particular forms of matter and energy, and then abandoning them to inhabit other forms.

The Gaia hypothesis does not conflict with any of the major schools of religious thought: Christ, Lao Tzu, Buddha, Krishna, Quetzalcoatl, Moses, Zarathustra, Mohammed and Baha'u'llah may have been among the first blossoming flowers of Gaia. Some proponents of the hypothesis, thanks to Lovelock and the evidence of the earth as a conscious entity, see it as an idea with profound spiritual implications. Lovelock maintains that his hypothesis does not suppose the existence of a purposeful planetary self-regulation.

He suggests that some parts of the earth are 'vital organs' that, if disturbed, could cause the whole organism of the earth to malfunction. Lovelock is extremely concerned about the tropical areas and the seas close to the continental shores and recommends 'wise husbandry' to allow Gaia to function well. Further, he suggests that the collective intelligence of humans constitutes a Gaian brain and nervous system that can anticipate environmental changes. The result could be that in the future, nationalism would give way in the face of the need to belong to the commonwealth of all creatures that constitute Gaia.

Lovelock believes that 'we' have a special place in creation because of our technology, thereby making it crucial for us to become responsible for the planet. He warns that Gaia can get rid of our species if we threaten the rest of life on earth: "Gaia is not purposefully antihuman, but so long as we continue to change the global environment against her preferences, we encourage our replacement with a more environmentally seemly species."

By applying the ecological idea of an ecosystem to the earth as a whole, Lovelock has made a lasting contribution to ecology. The Gaia hypothesis enlarges theoretical ecology by taking the species and their physical environment together as a single system, and provides mathematical models that demonstrate that 'increased diversity among species leads to better regulation', confirming the older view that greater complexity leads to stability in an ecosystem.

The success of the Gaia hypothesis in environmental circles, was primarily because it undermined the prevailing view that nature was a primitive force to master and the Earth a spaceship forever traveling around the sun. In today's secular world, Gaia offers almost a pagan new religion to many, and in some circles has even become a kind of earth worship. Lovelock however, has been careful to distance himself from any theological interpretation of Gaia and denies that it assumes the earth's ability to plan and have foresight. He stresses that Gaia is only a hypothesis: it is not ultimately capable of being tested.

Nevertheless he does admit that at times the whole planet appears as if it were celebrating a 'sacred ceremony'. Gaia, to him, is a religious and scientific concept: "She is of this Universe and, conceivably, a part of God."

Strictly speaking, the hypothesis is nothing more than an intriguing supposition that is nevertheless of great value. It supports the view of modern physicists that the universe is more like an organism than a machine, and implies it has intrinsic value and that its interests as a whole are worth human consideration. It encourages a welcome reverence for life—we came from nothing; it is too early for us to return to nothing.

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