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## **Global Family: The True Evolutionary Mandate of Globalization**

**By Elisabet Sahtouris**

Surely we live in the most exciting and fascinating, if also the most complex and confusing, time in human history. For the first time, ordinary people as well as leaders are having instant conversations around the entire planet. Our conversations are about huge global issues as well as myriad personal and local matters. Whatever they are about, these people-to-people conversations are changing our world. While many people and organizations are actively engaged in positive change, many others are losing hope as they watch the world's seemingly insurmountable crises pile one on another. It is an amazing stew of events that churns the world and dizzies our minds with its complexity.



For me, as an evolution biologist, the key to understanding this complexity, so rife with contradictions, has been to observe humanity along with other species in the great evolutionary trajectory of planet Earth. As I engaged in this exercise, I came to see an intelligent harmony working itself out in nature again and again. I came to see the Earth as a great living being with a common gene pool shared by all its species, and the cosmos at large as a living, evolving, self-organizing system. This view of things went far beyond what I was formally taught as a scientist, but I gradually discovered many other scientists independently coming to see things this way and eventually realized that the whole scientific story of "How Things Are" was evolving along with humanity itself.

### **Creation Stories**

All cultures need, and have, creation stories to give meaning and purpose to human life. In the modern era, scientists were given the mandate to tell their creation story as the "official" story of How Things Are in our cosmos and world. The scientific creation story is intended to come from research rather than revelation and is therefore subject to its own evolution as science gains in knowledge.

While much of the world has become convinced that the scientific story as told is worth believing, it has also led many to despair of the human condition and driven them back to older religious creation stories that provide consolation and hope.

We need to understand the depressing aspects of this scientific creation story that have locked us into inequitable economics and environmental degradation, as well as how this story is now changing to give us new hope for a truly better world.

The scientific creation story at its simplest comes from physics and biology. Physics begins it, telling us we live in a nonliving accidental universe running down by entropy--a universe without meaning or purpose. Biology continues this basic theme by telling us we are doomed to endless competitive struggle in scarcity because that is nature's way of evolution and thus our own human nature.



*[Kevin Schafer/Uniphoto]*

This is, obviously, a depressing story. It developed most clearly during the two decades from 1850 to 1870, when Rudolf Clausius formulated the entropy law and Charles Darwin the theory of biological evolution. Though both physics and biology have evolved their stories considerably since then, these essential teachings still prevail as the scientific creation story for our world culture today.

An important social consequence of this scientific story has been to see human life as devoid of any meaning or purpose beyond material acquisition. Another was the retreat from science to the older creation stories of the great religions as the only source of meaning and hope. A third, stemming from the claim that science is value-free, was cultural relativism--the proposal that beliefs and ethical truths only hold for a specific culture. This last idea is now foundering as we recognize the need for basic common values in a time of globalization.

The Western scientific story fostered a dominant world culture that increasingly sacrifices the richness of relationships found in older human cultures to material consumerism, which is widely advertised even to those who have been made poor in the competitive struggle of our world economy. This highly inequitable consumer culture is now acknowledged as unsustainable--a term that literally means "can not last; must be changed."

Unsustainability is the prevailing material crisis of the present, with hopelessness our prevailing spiritual crisis--but both are rich in opportunity for our evolution into cooperation.



**A dust storm in Mali; the Western scientific story has changed our relationship to the Earth with negative consequences [©Grant McDowell/naturepl.com]**

Scientific belief in a nonliving universe is just that: a fundamental belief, an unproven assumption on which Western science is built, not a research result. For the founding fathers of Western science, who were religious, believing in the universe as a vast mechanism gave them hope of understanding it as the invention of a Father God in whose image they were made and by whom they were empowered as inventors in their own right. When God was later rejected by science, the belief in a mechanical universe actually became illogical, since mechanisms are assemblies of parts designed to meet their inventors' particular purposes. It is this illogic of seeing nature as meaningless, purposeless, accidental machinery that drove me to work on new foundations for Western science that would be more compatible with its research findings.

### **An Evolving Scientific Story**

More and more I meet Western scientists who, like myself, have reversed their belief in a material universe giving rise to consciousness in the process of evolution, taking up the opposite belief that consciousness is primary and gives rise to material worlds that evolve. Even if they have not yet made this clear reversal in belief, many will acknowledge that all human experience occurs within human consciousness. Scientific models of the universe should therefore be acknowledged as models of a universe seen through human consciousness and defining reality as the sum total of direct human experience.

Human experience is perceived both as an outer world including scientific experiment and as an inner world of thoughts, feelings, emotions, dreams, awakenings and intuition. Taking inner experience as seriously as outer, the new breed of scientists is engaged in research projects inspired by cultures with long experience in studying inner worlds, thus building important bridges with spiritual traditions. The Dalai Lama's ongoing work with neurological laboratories is a case in point.



**The Eagle Nebula, a giant star-birthing region 7,000 light-years from Earth; the giant pillars of hydrogen gas and dust in the center are light-years in length and so dense that interior gas contracts gravitationally to form new stars, several of which are visible here [T.A. Rector (NRAO/AUI/NSF and NOAO/AURA/NSF) and B.A. Wolpa (NOAO/AURA/NSF)]**

From this new perspective, everything perceivable in our universe and on our planet self-organizes and creates itself within and from a common field of Oneness, now called the Zero-Point Energy field in physics. New theories are emerging that challenge the doctrine of a universe slipping toward the meaninglessness of entropy, seeing instead a dynamic balance of forces.

In biology, the definition of life called *autopoiesis*, literally self-creation, states that a living entity is one continually creating and maintaining itself in relation to its environment. While developed for the biological entities that are the life forms of the Earth, this model is easily and persuasively extended to the Earth as a whole as well as to the entire self-organizing universe. One of the great advantages of seeing the universe as alive is that it helps resolve the difficult scientific question of how life emerged from nonlife, consciousness from non-consciousness and intelligence from non-intelligence.

From a biological perspective, then, we can see a universal metabolism of anabolic buildup and catabolic breakdown and recycling. This process is consistent from the fundamental vortex of a vast proto-galactic cloud in the macrocosm to the tiniest whirling particle in the microcosm. It reveals a universe self-organizing and maintaining itself at all levels--alive by the autopoiesis definition. Earth is a giant self-organizing living cell that continually recycles its component elements through tectonic plate activity, weather patterns, magma flow and sedimentation. Earthlife, as I have said, is rock rearranging itself.

The giant Earth cell gains greater complexity by evolving tiny cells on its surface through the intelligent alliance of DNA and proteins. These microscopic cells evolve enormous variety and complexity by exchanging their genetic material as DNA becomes the planetary language of life, permitting blueprints to be encoded and shared among all Earth's creatures--from the tiniest single-celled bacteria to the largest mammoths and redwoods.

Once physics and biology are reconciled in a common model, with Earthlife as a special case of additional complexity halfway between the macrocosm and the microcosm, as the ancients intuited and we now can measure, the other fields of science will quickly integrate themselves. Alternative medicine is already becoming mainstreamed; many conferences are organized to further the integration of religious and scientific worldviews. A whole new branch of scientific investigation into the ongoing communion and conscious cocreation among all species and life forms is emerging, with special attention paid to indigenous knowledge in this field.



**[©COMSTOCK IMAGES]**

## **Evolution Through Cooperation**

Perhaps most importantly, evolution biology, as I see it, involves evolutionary maturation cycles

that go beyond the Darwinian model of evolution through competitive struggle. So-called "pioneer species" exemplify the first immature stage of a living species evolution, in which they multiply rapidly, competing aggressively for resources to establish themselves. Beyond this, however, species can learn to form cooperative alliances in which they feed and nurture each other, evolving the collaboration that permits them to build complex stable ecosystems such as rain forests and prairies--not to mention complex multicelled creatures.

This cyclic evolutionary process of maturation can be seen in the way hostile, competitive ancient bacteria evolved peaceful collaboration that gave rise to larger and more complex nucleated cells through a cooperative division of labor. All fungi, plants and animals, including humans, are made from these cell cooperatives, which themselves went through the process of hostile competition for resources before evolving into multicelled creatures by the same process of learning collaborative division of labor. That very same evolutionary cycle is now driving our competitive human nations to collaborate as global family.

In this new model we see that Earth's greatest crises brought about her greatest waves of creativity. Periods of extinction of many, if not most, life forms were followed by a sudden explosion of new life forms, rather than slow linear Darwinian changes. Not until things were thoroughly shaken up did these novel patterns arise, as the fossil record reveals.

The research results pointing the way to this new scientific model of nature are already available in physics, chemistry, biology, medicine and psychology, their evidence accumulating over the past century, needing only to be put into a more holistic context founded on consciousness and universal life. Once the new scientific model is more widely accepted and publicized around the world, there will be an enormous release of human hope, joy and creativity, inspired by a dynamically balanced and sustainable universe that is not running down at all, and by an inspiring evolution theory showing that the way of the future is not hostile competition in scarcity but creative collaboration and recycling to produce sustainable abundance for all.

## **Building a Global Family**

Humans have known from experience that changing old rigidified structures involves existential crisis. A butterfly cannot happen without the meltdown of a caterpillar, and many cultural stories, such as the phoenix rising from the ashes, have recognized this fundamental pattern. Whole civilizations have collapsed before new ones arose. Philosophies and beliefs have been challenged and dissolved throughout history so that new ones could take their place. Evolution biology enables us to understand thousands of years of competitive empire-building--from kingdoms to nation states to multinational corporations--as the juvenile to adolescent phase of humanity's socioeconomic and political evolution.

Living systems are embedded within one another as holons in holarchy. They operate by the same principles at all levels--as cells, bodies, families, communities, ecosystems, nations, world economy. When every level is able to express and meet its self-interest, negotiations happen and cooperation evolves. Self-interest is only destructive when not contained by the self-interest of larger communities, or when larger communities fail to understand that their health depends on smaller communities embedded within them. The World Trade Organization, for example, cannot create a healthy world economy without meeting the expressed self-interests of local economies. Only healthy individuals in healthy families in healthy communities can serve as a basis for a healthy world economy.



Fishermen in the Sangha River, Central African Republic [R. Maro/Version-foto.de]

Every individual, like every cell in a body, must be supported in meeting her or his needs. Diversity must be recognized as essential to creativity, while our common goal should be bringing our planetary life system to the mature evolutionary stage of cooperation and mutual sustainability as quickly as possible.

New projects for building global family through cooperative enterprises have already cropped up everywhere around the globe, now woven together by the Internet through which they can communicate and strengthen each other. A story can be a powerful catalyst for change, and as the new story of science catches on, these efforts will flourish more and more.

In my travels around the world as an evolution biologist, I see spirits lift and sleeves roll up as I tell this story showing people that nature is actually on our side: that crises are opportunities for evolution. We humans can follow countless other species to mature collaboration precisely because we have gotten ourselves into such big trouble now.

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