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Although in theory every educated person knows that the world is more than people, resources, and a vague environment to be protected, the very fact of seeing it as one spherical air-water-land system gives it a new and different reality. From a vantage point outside our home, a revealing perspective has shown us the planet for what it really is; a ball of living star dust, a four-and-one-billion year old miracle.

Marshall McLuhan noted that environments are most appreciated by those who escape them either in space or in time. We don't know who discovered water, he said by way of parable, but we're fairly certain it wasn't a fish. Just so, it takes the '80s to discover that the '60s or '50s or

'40s were special environments, only now to savoured nostalgically, gazing back from an unexceptional present. But today too will take its place in the museum of environments left behind--appreciated in the only way possible--by outsiders. The geographic equivalent is to perceive one's country through the eyes of a foreigner, or as a returning traveller asking, "What do they know of England who only England know?"

Perhaps the strange human hankering to fly away from the planet, to "slip the surly bonds of Earth," is a necessary impulse for discovering who we are. Perhaps we can never be satisfied on Earth until we have travelled away in space and come back home, back to our roots, to where we belong.

For the beginning of wisdom must surely be the realization that people are earthlings, out of this supernatural planet by some generative miracle. Furthermore, we and millions of companion life-forms form a part of the greater whole that James Lovelock has called **Gaia**, the Earth Being.

I say that this clearer perspective as to who we are, where we are and what we evolved from, will eventually revolutionize how we know ourselves and our environments, because it represents a different reality than that constructed within the myopic western tradition of religion and science. The heavy thinkers of the past have laboured long to justify God's ways to man and man's ways to surrounding water and soil, animals and plants. Knowing little of geological history or of biological evolution, these great men constructed a universe that essentially omitted the world which was therefore ignored and devalued as nothing more than a provisioner

of humanity, and beyond that a meaningless stage on which the chosen species --a little lower than the angels-- played out its dramas.

To the question, "What is the world?" the answers still tend to be fuzzy. In the traditional sense, the Earth remains the supportive environment for humanity; merely the means for enhancement of the one animal "made in God's image." To physical science that has denatured reality the world is a material place of molecules and atoms, of solids, liquids and gases, of atmosphere, hydrosphere, lithosphere and biosphere. For biological science it is a scene wherein mechanistic organisms compete for survival, driven by selfish genes. To the economist it is raw materials and resources, valueless until transformed by the "innovative genius of man" into marketable commodities. These are our humanistic homo-centred legacies--no longer reasonable.

In the profounder ecological sense, the world is now known as a unity. The various spheres--atmo, hydro, litho, and bio--are intertwined and related, both in the historical evolutionary sense and in the present functional sense. Organic tissues of living things are fashioned from the elements of air, water and soil which in turn bear the imprints of life. Thus, the nutrient composition of sea water is maintained by organisms which also stabilize the improbable composition of the atmosphere. Plants and animals formed the limestone in mountains whose sediments make our bones. Our blood and sea water are consanguineous. On the Earth's surface the artificial divisions that we have made between living and non-living, biotic and abiotic, organic and inorganic, are not only false but mischievous.

The reality of the world is not people and separate "other things." Nor is the Earth a machine whose secrets lie in its fragmented parts. It is--beyond all understanding--an integrated Ecosphere of marvelous creativity.

The root meaning of "eco" is "home," and the revealed Ecosphere is the home-sphere from which all life came and in which all life exists. Thanks to NASA, ecology--which means study of the home--has had its eyes opened to the reality of the Home of all homes.

Are ecological hearts gladdened by this gift, this revelation? Not really--because the vision arrived too late. Blind to their environment because embedded in it, ecologists for 100 years have been developing a biologically centred science concerned not with the Ecosphere and its sectoral ecosystems but with organisms believed to exist in an abstract factored environment.

Science is a cultural pursuit, meaning that it is neither objective in the choice of phenomena to be studied nor in the theories and hypotheses proposed to explain them. By taking organisms rather than ecosystems as their focus, ecologists have shown the natural propensity to select for study what seem to the majority most important: those things most like themselves. For without the insights of an out-of-this-world view, organisms appear to be the *only* important phenomena on the face of the Earth. Indeed, the justification today for not taking ecosystems as objects-of-study in a serious way is that they
are not organisms!
And if they are not organisms they must be less than organisms, less than us, hence relatively unimportant except perhaps as providing a useful conceptual framework by which to arrange environmental data around organisms.

It is true, of course, that the Ecosphere as the largest ecosystem--and the regional and local ecosystems that it comprises--is not an organism. But perhaps there are things in the universe that are more important than organisms? Ecosystems are *supra-organismic* in Odum's terminology. From them life came and continues to come. Their mystery as non-living objects that nonetheless comprehend life does not disqualify them from importance. If ecology is to be true to its name it must take as its goal the understanding of Earth's living skin and body, composed of those three-dimensional home-systems of air/water-soil activated by solar energy where living things dwell.

Ecology needs to escape its infatuation with organisms--the legitimate subject matter of biology--and fasten its attention on the larger whole in which organisms, including people, function as parts. Ecology's natural subject of interest is the Earth-home, the Ecosphere, not its fragmentary compositional parts. Ecology studies the whole; biology studies the organic constituents of the whole that are no more important than air, water and soil.

Thus biology is a derivative and reductionist form of ecology, just as chemistry is a degenerative form of biology, and physics a degenerative form of chemistry. Each studies smaller fragments, and in doing so necessarily loses sight of the most important whole.

From this a corollary emerges, hitherto taboo. Humanity is at a point where the subject matter of science--what scientists do or do not do--is all-important. Unless the guiding light in the selection of problems and methodologies is the sympathetic understanding of Nature, with the goal of fitting civilizations to *ecological* models, a large part of science can no longer be justified. Without a realization of what it must do, science is likely to destroy as to save. The

conventional but aimless "search for new knowledge" is just not good enough any more. It is time to ask: " *Knowledge to what end?"* Otherwise phrased, *"What in the World are we aiming to do?"*
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By J. Stan Rowe
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