INFO/ECO

ECONOMICS/INFORMATION/ECOLOGY

What's the Matter? What's the Difference? What's the Use?

Richard Lowenberg

RADLAB

This is an updated and reworked version of a series of essays begun in the mid-1980s. Info/Eco attempts to provoke consideration of the new 'information economy' within an integrated, whole-systems understanding of 'ecological economics' and the role of the arts therein. – RL

"Words ought to be a little wild, for they are the assault of thoughts upon the unthinking."

(J.M. Keynes)

Art & Economics: Towards a Cultural Ecology (Abstract)

In this age, increasingly shaped by communications and technology, humanity is becoming acutely sensitive to its frail security. The rationalism of science continues to accelerate the conflict between global mind and local body. Energy and information are now our major exchangeable natural resources. They constitute the primary components of the value system in a newly emerging economic structure.

Within the broad framework of information theory, the arts are recognized for their communicative efficiency and transcendence. The processes of creativity, though elusive, have lead mankind through historical mazes of uncertainty. In an information-based society, cultural development may assume an economic value comparable to that of military development in an industrialized society. Having learned to recognize the complex ecological interdependence of living systems and the environment, artists ought now to produce models of a sustaining cultural ecology.

State of the Arts

The arts, reflecting the state of the larger political, economic, and social environment, are in serious trouble. Too many artists are playing it safe, today. The role of the arts in this society, is now largely shaped by confused intellectualism; selfish, vested-interest capitalism; and absent-minded, fashionably crafted artificiality. There must be more.

There is, of course. There are many artists and cultural institutions working with deep, sincere integrity and dedication. Their creative life, admittedly, is proceeding at odds with a more dominant social momentum. Their perseverance and efforts are to be encouraged.

This essay hopes to provoke thought and discussion aimed at clarifying certain issues that are at the core of our human-environment relationship; and at the heart of our valuation of culture and creative action, for a more intelligent and sustainable society. There is a need and an all important opportunity for creative people, artists, to take full advantage of the great independence and freedom inherent in their calling, to take a more active personal responsibility to be proponents of a true sense of ecology; a cultural ecology.

A DECEPTION IS BEING PERPETRATED.

IT IS NOT AN OVERT DECEPTION.

IT IS NOT A COVERT DECEPTION.

IT IS THE EVOLUTION OF MISCONCEPTION.

Economics

There is no denying the miraculous evolutionary history of our belief systems, but our current political economies, fictions of ideology, have become an unmanageable misunderstanding of life, sustaining resources and values.

Capitalism, Communism, Socialism, etc. are political contrivances; catch-phrases that deny a comprehensive knowledge of the value of human life and work on this complexly dynamic planet. They are, more directly, sophisticated systems for social control. Intellectual impositions on society-as-system, they do not adequately account for turbulence, random effects or failure. These systems are, in fact, the antithesis of true freedom and democracy; social concepts and goals that ought to carry a profound responsibility for us to be more creatively intelligent and humane.

Our cultural economy is an integral part of, and merely mimics the problems and inconsistencies of the larger economy. In assessing our circumstances, actions, and intents, it becomes clear that the socio-economic bottom line is invariably tied to 'quality of life.'

Society is experiencing accelerated, consumer-driven, global, post-industrial, technological communications development. Often labeled the 'Information Revolution,' this evolutionary force is in part supported by a military-industrial power base, and by a selfishly motivated, catch-up minded technocratic elite. Though not a singular conspiracy, the results of this evolutionary tragedy-of-errors is that increasing populations of people around the world are confused and frightened by newly emerging class differences and social controls, while being torn from their sense of culture, and knowledge of place. This version of the Information Revolution is a sham.

"From a purely physical viewpoint, the economic process only transforms valuable natural resources (low entropy) into waste (high entropy). The true economic output of the economic process is not a material flow of waste, but an immaterial flux: the enjoyment of life."

(N. Georgescu-Roegen)

Ecology

The dynamic radiative information environment, the flow of information, and the sensory and communicative nature of information, have not been included in most whole-systems ecological thinking and applications, to date. It is a major error in human understanding that will have troubling consequences, as we increasingly interact with and manipulate this fragile ecosystem.

Ecology is the study of the complex relationships between living and non-living, inter-dependent dynamic systems. It describes the fragile balance in which such systems interact and by which they co-evolve. Information Ecology extends our basic understanding of ecology to include the physical, social, and economic transformations being wrought by the rapid developments in information technology, networked learning, and by our becoming an increasingly networked "society of mind".

No intelligent person can dispute what we now know about Ecology. The complexity of the chaotically dynamic processes that permeate our lives, imposes a dire need for us to reconsider economic relationships and social values. Some economists are now attempting to understand and to propose a new sense of values; new economic theories, based upon our knowledge of ecological processes.

With the Second Law of Thermodynamics, and Entropy as fundamental understandings, this new thinking is beginning to have real and immediate effect among 'green' environmental workers. It has had little broad recognition or effect outside of this interest group, however. Much of humanity, attempting mainly to survive, does not have the resources or the time to consider such 'stuff'; and many of the rest of us, unfortunately, have a very limited grasp of our human relationship to 'nature'. To a great extent, our 'myth-understandings' are the result of intellectual entrainment, induced by legacy hierarchical social systems (governments, religions, schools, companies).

Many proponents of 'ecological economics' seem not to comprehend the big picture yet, either. While their theories are 'right on the money' regarding the 'green' matter-energy environment, they have hardly considered the 'information environment' in their attempts to better manage this household.

The study and practice of Ecology must take into full account the energy-information flux to, from, and on the Earth. Information, thus considered, poses difficult questions as to its potentially increasing physical and social influence, and as to a determination of its value within the broader economic sphere. An economy/ecology of information is as critical to life as that of watersheds, air quality, forests or migrating populations. Properly considered, ecological economics takes full account of value: use value, exchange value, and inherent value.

AN INFORMATION REVOLUTION IS BEING WAGED

IT IS AN ECONOMIC AND TERRITORIAL WAR

BETWEEN POWER AND SERVITUDE,

BETWEEN HAVE AND HAVE NOT,

BETWEEN KNOWLEDGE AND CONFUSION.

CLOAKED IN DECEPTION,

IT IS WAGED BY A VESTED INTEREST

IN NEGATIVE ENTROPY;

FUELED BY A THERMODYNAMIC LIE.

Information

"A bit of information can be defined as the difference which makes a difference."

(Gregory Bateson)

All too often, in considering the environment, we think of the Earth: soil, water, air, living things, etc.; a material, tangible environment. But these material systems are bound together in a flow of sustaining energy and information: the Earth-Sun-Universe connection. It is this thermodynamic life force, this radiant electromagnetic environment, and its impacts on the human body and mind, to which a sense of ecology must be acknowledged.

Electromagnetic radiation is the propagation of energy through space by means of electric and magnetic fields that vary in time. The orderly arrangement of radiation according to wavelength or frequency is called the electromagnetic spectrum. All electromagnetic waves transport energy-information from a source to a receiver.

Human use and manipulation of the electromagnetic spectrum for communications, and the production and evermore saturating flow of energy for power, are having direct effect upon living organisms, in ways barely understood. This energy-information environment; the flows and concentrations of cause and effect in this invisible, dynamic ecosystem; and the symbiotic relationship between the evolutionary production of communications technology, with the co-evolution of the human psycho-sensory system, is considered too esoteric and unfathomable a subject for most people to involve themselves in.

Information can be considered in a number of ways. Mechanistically, information has qualities much like mass or energy. It is transmitted and received with some force or action. Information channels may be compared to the

nerves and bones in living systems. They are the web of social communications. The flow of information determines the course of dynamic social evolution. According to this view, information may be treated as a useful natural resource; a commodity that can be transported, bought and sold, and regulated.

"Capital is knowledge imposed on the physical world in the form of improbable arrangements."

(Kenneth Boulding)

Information, however, must also be considered as patterns of perception, relationships and differences. In coming to terms with an ecology of the information environment, with an ecology of the force, the message and the medium of this valued natural resource, accounting for such dynamic cognitive and sensory processes must be integral to any comprehensive formulation.

Lest we give ourselves too much credit, let us realize that all living systems are incredibly fragile. The overpowering chaos of the universe is miraculously awesome. The continuous, delicate balancing act between order and disorder involves us entirely, from molecule to mind. High entropy (chaos) matter-energy displays resistance and implasticity. It is the quality of low entropy (order) that makes matter-energy receptive to the imprint of human knowledge and purpose. We can neither create nor destroy matter, energy or information. We live on the qualitative difference between these natural resources and waste; the increase in entropy. High entropy; noise in the information environment, is constituted by ignorance, confusion, falsehood, and deception. To ignore the simple and elemental truths of the Entropy Law, is undoubtedly to promote more undesired disorder over time.

The Information Revolution, if it is primarily a technology mediated revolution, will likely result in increased consumerism, social systematization, bureaucracy, waste, and war. The more cumulatively energy consuming and less ecologically sustainable, the more fragile technological progress will become; and ultimately more disruptive in its potential (inevitable) failure.

Life's delicate balance requires greater sensitivity and perception. An ecology of the information environment; an 'ecology of mind'; would foster intelligence, creativity and inspiration as our most valued resources. Within this conceptual framework, the arts and sciences, in pursuit of truth and beauty, ought to be the ultimate exemplars of a culturally rich, sustainable community.

This would be a real Information Revolution.

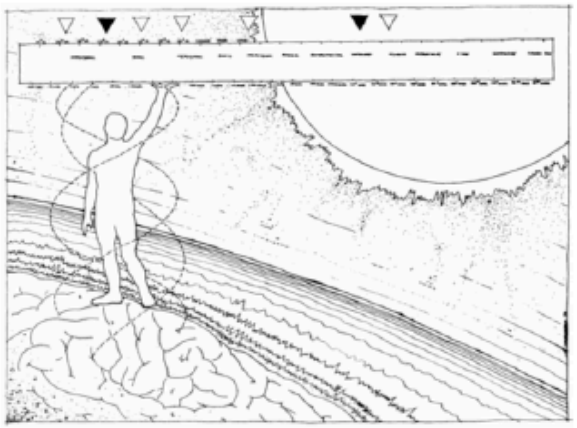
IF IT IS NOT MATTER, IT IS ENERGY.

IF IT MATTERS, IT IS INFORMATION.

IF IT DOES NOT MATTER, IT IS NOISE.

Information Ecology: The Nature of Information

- Information, like matter and energy, is a primary ecological constituent.
- Information requires life, and it endows life.
- Information is universal, with qualities and properties varying according to scale.
- Information is the difference in a state of being resulting from any interaction, macro to micro, between two or more systems.
- Information at human-earth scale may be thought of as a complex dynamic environment, with which all of life interacts.
- The dynamic flow of information tends to reorganize living systems and social constructs.
- The human brain and nervous system have evolved through cumulative genetically coded experience, unique self-referencing processes, and a seeming tendency to be all knowing.
- Human senses evolved to sense narrow visible and auditory ranges of spectral information, though we invisibly and intangibly continually interact with all information.
- Human technological development allows us to tune in to and manipulate large parts of the information environment.
- Information has value. It may be free, cheap, or expensive, based on its availability and demand, processing requirements, and ability to make a difference.
- In human terms, pollution and waste in the information environment are qualitative: ignorance, confusion, deception; as well as quantitative: sensory overload and high noise to signal ratio.



Art and Culture

Art has become an almost indefinable term. It is the irony of the 'information age', that reflecting the crisis of meaning in our lives, the arts are being relegated to the marketplace of mass-appeal superficiality; having become popularly synonymous with entertainment, fashion and commercial product. At the same time, the richness and diversity of wilderness and indigenous cultures around the world, is increasingly being valued for its scarcity and novelty, while being exterminated and replaced by the greed of progress and 'new world orders'.

The mindless pursuit by artists, of 'the good life'; of 'making it'; at a time when all humanity should be questioning the existing order, is revolting. To call oneself 'artist', is either a grand conceit, or a bold decision to assume greater individual creative freedom. That freedom ought to carry with it, a responsibility for honesty and transformative intelligence. Artists, having chosen a freedom of aesthetic and intellectual vision and pursuit, are almost always at odds or in conflict with the prevailing social norm. This is precisely the artist's value. The artist is in a way, the personification of society's means of checks and balances; the promoter of individuality and nonconformity, amid the ever increasing systematization of this information-based world.

While some artists yell "censorship" at recent reactionary assaults upon their freedom of expression, many are ignoring the larger conspiratorial censorship of the social spirit. We are in the midst of an 'information war', the ecological consequences of which may be devastating.

ART CUTS THROUGH THE CRAP
IT IS A DEVIOUS MODE OF HEALING;
THE VOODOO OF AN INFO-CULT.
IT IS THE IRRATIONAL
BECOME INSPIRATIONAL.

The Information Revolution, as it is presently evolving, is a runaway conspiracy of control. The forces of homocentric, selfishly misguided business-as-usual, living in fear of nature's wondrous dynamics, are perpetrating an undeclared eco-war; a turbulent disruption of ever increasing and threatened human populations. The volatile social waste produced in the wake of such 'progress', is contaminating our physical and perceptual environments. Our cultural bodies and minds are suffering the effects of this great thermodynamic deceit.

If we take the incentive of applying our creative talents towards an ecologically considered future, we must be comprehensive. Society is in need of clear, intelligent, inspired communication, the nonmaterial information resources that constitute the true wealth and aspirations of a culturally secure community. As technological development shapes our concepts of the future, those artists working with new tools and processes, need to weigh the eco-cultural worth of their endeavors, against their merely being narrow-minded advocates of technological consumerism. As communications systems advance into the 'photonic era', where will we find enlightenment?

Will artists, sensate pathfinders, contemporary tricksters, lead the charge in a real Information Revolution? We may have the least to lose and the most to gain. Artists, as cultural agents, must make some difficult decisions, but have equally exciting opportunities to set examples, create models, and express simple truths. Let's be overt. Our very survival is at stake. Amid life's complex compromises, creative idealism must be part of the equation.

THE BEST DEFENSE IS A CULTURAL OFFENSE.