

Preparing the Way for a Planetary Civilization

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THE BIOSPHERE

Biosphere is the scientific name for the living and life-supporting system in the outer part of the Earth. It came into being when life originated on Earth. Over billions of years it has evolved into a highly structured global system, stupendous in size, unbelievably beautiful, intricately complex, and wondrously diverse. It includes the sunshine that warms the Earth, the atmosphere, the hydrosphere (rivers, lakes, groundwater and oceans), the upper-most few kilometers of the lithosphere (soils, sediments and rocks), and millions of species of plants and animals, including ours. Everything in the Biosphere is, in one way or another, connected. The Biosphere operated as a globally integrated system without us for nearly 4 billion years; and there is every reason to believe that it can, if necessary, do so again.

The realization that our species arose from and lives within a complex globally integrated system was slow in coming. First, the Earth had to be explored, systematically mapped and scientifically described - the geography of oceans and continents, the distribution and different kinds of plants and animals, the varieties of minerals and rocks, the global cycle of water, the composition and circulation of the atmosphere, the evolution of the Biosphere, and so on. Of the workings of the Biosphere there is still much to be learned.

Eduard Suess (1831-1914), an eminent Austrian geologist, coined the word *Biosphere* in a passing sentence in his book, *The Origin of the Alps* (Suess 1875). Nothing further happened for half a century until a small group of scientists, philosophers and mathematicians came together in Paris in the early 1920s. Stunned by the global impact of World War I, and captivated by the idea of creative evolution, they began exploring scientific and philosophic implications of the concept of the Biosphere.

Two leading participants in this group were Vladimir I. Vernadsky (1863-1945), an integrative Russian mineralogist-geochemist and author of the first book on the Biosphere (Vernadsky, 1926); and Pierre Teilhard de Chardin (1881-1955), a French Jesuit paleontologist, who explored the spiritual and evolutionary dimensions of human consciousness in *Le Phénomène Humain* (Teilhard, 1955) and other posthumously published books. Vernadsky was the

leading mineral strategist in Russia in World War I; Teilhard served a stretcher-bearer for the French army.

Interesting as all this was, it was only after World War II that radioactive fallout from nuclear bombs transformed the Biosphere from an intellectual concept into a geochemical and political reality.

A SUCCESSION OF APPROACHES TO PROBLEM-SOLVING

At the same time as radioactive fallout from nuclear bombs was raining down from the stratosphere, a rash of air and water pollution erupted in urban and industrial areas all over the face of the Earth. Suddenly it became clear that piecemeal (one-by-one) approaches to problem-solving were not working; that a more integrated approach to problem-solving was needed. In response, governments initiated an environmental approach to problem-solving the 1960s and 1970s - integrating separate management units involved with air, water, biota, and health. Unfortunately, the integration did not go far enough.

After the declaration by the New York State Commissioner of Health in August, 1978, that the Love Canal, a buried toxic industrial waste site in Niagara Falls, New York, was a hazard to human health, governments around the world recognized that a change of context had taken place. The attempt to deal with environmental problems in a political context was not working because it dealt with only part of an integrated ecological system. What was needed was an ecosystem approach which viewed people as parts of larger integrated ecological systems.

One of the first political responses to this need was the Great Lakes Water Quality Agreement signed in November, 1978, by Canada and the United States. The Agreement began by defining the Great Lakes Basin as an ecosystem consisting of air, land, water, and biota, including people. This reflected a shift from a framework that viewed environment in a political context to a framework that viewed politics in an ecosystem context. Political recognition in the late 1980s that chlorofluorocarbons were destroying the ozone layer, and that greenhouse gases in the atmosphere were causing global climate change, initiated a Biospheric approach to problem-solving.

By-passing what might be called an initial “*ego-system*” (self-centered, environmentally indifferent, “me first”) approach to problem-solving, examples of the various approaches referred to above are given in table 1. It is important to note that these approaches are complementary rather than mutually exclusive; also, that they appeared in response to undesirable side-effects of runaway demotechnic (*demos*, population; *techne*, technology) growth.

PATHS TO A COSMIC CIVILIZATION

Based on the above trends and increasing public awareness and acceptance of the findings of evolution and ecology, a case can be made that nations are progressing (stumbling might be a better word) along paths that are leading to the development of a Cosmic civilization. By Cosmic civilization I mean a planetary civilization founded on the belief that it has a Cosmic purpose to fulfill.

Four stages in the development of a Cosmic civilization are described in table 2. These are: (1) the evolution of a technological species; (2) a stage characterized by warring, subplanetary, technological civilizations; (3) a globally integrated planetary civilization; and (4) a Cosmic civilization.

Our species passed through the first and most essential features of stage (1) long ago with the train of events leading from the development of language to agriculture and printing based on moveable type. We are currently stuck in stage (2), and have been there far too long. Stage (3) may be close to becoming a reality, but progress is currently stalled by

seemingly insurmountable political and human behavioral obstacles. Stage (4) is based on a speculative, but insightful, blend of recent scientific, evolutionary and religious beliefs. Just as photographs of the Earth from space transformed subplanetary thinking into planetary thinking, it is possible that one “intelligent” communication from an extra-terrestrial source could attitudinally transform a planetary civilization into a Cosmic civilization over-night.

The focus of this article is limited to the transformation from stage (2) to stage (3).

MORALITY AMONG NATIONS

There is a disturbing parallel between the past few centuries of European history and an interval in Chinese civilization known as The Period of The Warring States (453-221 B.C.). This was a time of great chaos in China, incredible despotism, interminable wars, protracted campaigns, rebellions, subterfuge, trickery, revenge and lots of coups d’etat. According to Samuel Griffith, translator of Sun Tzu’s (1963) classic, *The Art of War*:

Thousands of crimes were punishable by death or mutilation. Castration, branding, slicing off the nose, cutting leg tendons or breaking knee caps were commonly afflicted. The most pressing problems were the same as they always have been: to preserve and enrich the state and enhance its power and influence at the expense of enemies either actual or potential.

Table 1: Succession of four different approaches to resolving human, self-made problems: See text for explanation.

<i>Problem</i>	<i>Piecemeal</i>	<i>Environment</i>	<i>Ecosystem</i>	<i>Biosphere</i>
Demotechnic Growth	subsidize, promote, reward	reduce side-effects	reduce front-end effects	globally, reduce to zero
Infectious Diseases	pills, piped water, quarantines	public health programs	monitor, reduce spread, anticipate	monitor, reduce spread, anticipate
Attitude to Nature	dominate, exploit, cost/benefit	save endangered species	conservation, ecosystem ethic	Biospheric ethic
Acid rain	discharge permits, scrubbers, tall stacks	Use clean fuel on bad days	alternative energy sources	reduce energy consumption
Energy Shortages	increase energy supply	expand grid, conservation	use renewable energy	reduce energy consumption
Organic Waste	discharge downstream	reduce biochemical oxygen demand	phosphate removal, recycling	energy recovery, nutrient recycling
Traffic Congestion	more roads and highways	superhighways, staggered hours	public transport, fast lanes	energy tax, live close to work
Pests	traps, aerial sprays, biocides	selective biocide application	integrative pest management	ecological management
View of Future	egocentric, linear	linear, predictable	wary of surprises	adaptive, evolving

Table 2: Stages in the evolution of a Cosmic civilization: (1) evolution of a technological species; (2) subplanetary, warring, technological civilizations; (3) a planetary civilization with a Biospheric focus; and (4) a Cosmic civilization. See text for explanation.

Characteristics	(1)	(2)	(3)	(4)
scope	tribal/cities	national	Biospheric	Cosmic
purpose	technological	economic	ecological	Cosmic
	power	power	integration	development
conflicts	tribal/national	world wars	regional, limited	few, limited
communication	oral/written	electronic	Internet	?
transport	foot/horse/boat	train/auto/ship	jet planes	?
energy	wood/water/wind	fossil fuels	hydrogen	solar
spiritual focus	person/gods	person/God	person/planet	person/Universe
personality	egotistic	ego/nationalistic	ecological	Cosmic

Griffith quotes Mo Ti (c. 479-381 B.C.) who, in the Period of The Warring States, denounced war in uncompromising terms:

If a man calls black black if it is seen on a small scale, but calls black white when it is seen on a large scale, then he is one who cannot tell black from white. Similarly if a small crime is considered crime, but a big crime such as attacking another country is applauded as a righteous act, can this be said to knowing the difference between righteous and unrighteous?

Apart from the increase in geographic scale, the immoral acts committed by all nations at one time or another have not changed much since the Period of the Warring States. Similar types of appalling atrocities have repeatedly surfaced throughout the history of human civilizations, including a marked escalation in scale during the twentieth century - by all nations (most notably Germany) involved in World Wars I and II, in Chile under the rule of General Pinochet, in Guatemala under the rule of General Efraín Ríos Montt, in Cambodia under Pol Pot, in Uganda under Idi Amin, in The Philippines under the Marcos, in the former U.S.S.R. under Joseph Stalin, and in Viet Nam, in East Timor, Chechnya, Burundi, the Union of South Africa, Rwanda, and other nation states. The reports of Amnesty International overflow with horrifying details of jailing, torturing, and killing for political purposes.

Is this the same Global Village of which many economists, "dot coms," futurologists, and leaders of corporations and nations so lovingly speak? How is it that we can conveniently show disgust and abhorrence at immoral acts in our neighborhoods, yet ignore or even wholeheartedly approve of much

greater atrocities on the part of our governments? Is human civilization incapable of devising and implementing moral rules to modify this genetically based and culturally abetted tribal behavior?

After examining these questions from many sides Mary Maxwell (1990) in *Morality Among Nations* concluded: "I do not think there is any *a priori* reason to believe that we are foredoomed when it comes to the matter of inventing a civilization that requires international morality."

Maxwell argued that human morality evolved from morally based emotions that arose from tribalism in our primate ancestors. She contrasted "standard" morality (among members to each other within a tribe) with "group" morality (relating one tribe to another) as two opposites. She identified the "slipperiness" of moral language as the greatest and yet most easily surmountable obstacle to making the two norms of morality identical - or, as Mo Ti aptly said, calling black black, and white white, regardless of the level of political organization.

THE BIOSPHERE AS A POLITICAL CONCEPT

There are seven good reasons for choosing the Biosphere as a focal point for moral, political and practical discussion:

1. With the Biosphere as context, nations become politically defined ecosystems, life takes precedence over nationality, and the principle of sovereignty is circumvented.
2. With the Biosphere as an ally, people and citizen groups are predisposed to taking leadership roles. This is because they are familiar with the operation of the Biosphere and political "*ego-systems*" are not.
3. With the Biosphere as an ally all the forces of nature are at people's disposal. Sunlight creates

- smog from air pollutants, food webs return persistent toxic chemicals to human sources, and new pest species arise from long-lived pesticides. This penalizes human "*ego-systems*" for making stupid ecological mistakes.
4. For all practical human purposes, the Biosphere is closed to in respect to matter. Everything in it has to go somewhere. This deprives human "*ego-systems*" of a basis for belief in unlimited growth.
 5. The Biosphere epitomizes people's love for nature. To ravage it is generally considered immoral.
 6. The Biosphere is indispensable for human life. To over-stress it is to over-stress ourselves. To destroy it is suicidal.
 7. By identifying with the Biosphere people can draw on an inexhaustible source of psychic energy. God, Manitou, Tao, The Force, Gaia, downward causation - whatever the name - is power to those who know how to use it.

Serious problems can only be resolved by transcending the causes that brought them into existence. In this sense, the interests of nations are likely to be well-served by transcendence into politically designated subdivisions of the Biosphere.

REFORM OF THE UNITED NATIONS ORGANIZATION

When the United Nations (UN) came in to being in 1945, the notion of ecology was unknown in the political domain, and global economic and environmental statistics were non-existent. Now, various departments and agencies of the UN provide a vast body of annually updated, statistically reliable, global information on everything from demographics, energy consumption, health, environment, industry, labor, food, agriculture, fisheries, housing, vehicles and international treaties to the annual consumption of beer and cigarettes. The time is ripe to establish a set of new operational definitions and procedures for the UN to circumvent the fictional notion of sovereignty and start nations, jointly, on a new, planetary course.

Let us begin by turning the clock back to the sixteenth century when the notion of the nation state arose in Europe. Nation states were politically ratified in 1648 with the Peace of Westphalia following The Thirty Years' War of religious conflict. By this act, the political influence of the Holy Roman Empire was downgraded and that of secular states upgraded. But, undercutting the religious basis of war did not make wars go away. Wars were merely justified in secular rather than

religious terms. When this situation escalated into World Wars I and II and the Cold War in the twentieth century, it became obvious that the notion of the nation state needed to be despatched to an intensive care unit. Major problems include:

- the quasi-religious fervor associated with nationalistic feelings and impulses, particularly in time of war
- sovereignty, which "by grace of God" affirms the right of nations to prevent other nations from interfering in their internal affairs
- the self-affirmed right of nations to maintain armies and conduct war, and
- the underlying human "*ego-system*" behavior.

All of these may seem perfectly reasonable and adaptive in a world of international conspiracy, trickery and subterfuge; yet it is also obvious that failure to manage conflict globally is jeopardizing the evolutionary future of all technologically-based nations and civilizations.

A new approach is needed. The question is: how to facilitate the transformation of nations from warring powers into participants working in joint interest toward a planetary civilization. Evolution generally proceeds by converting some existing structure into a new design - for example transforming the forelegs of a reptile into the wings of a bird or bat. In our case the need is to re-structure some of the founding principles of the UN.

The first place to start this is with the procedures of appointment and assignment of duties to ambassadors to the UN. At present, ambassadors to the UN are obligated to represent the interests and policies of their respective governments. This procedure effectively stalemates processes leading to the evolution of a planetary civilization. A necessary condition for the evolution of a planetary civilization is that ambassadors to the UN be appointed by their respective governments to act in the joint interest of nations, globally. Such a re-structuring would give meaning, legitimacy and credibility to the intentions of governments in respect to the UN.

A second step would be for governments collectively through the UN to give political recognition to the need for preserving and enhancing the health and integrity of the Biosphere in the common interest of all nations. This would require the tacit agreement of a substantial majority of member nations and overwhelming popular support globally.

A third step would naturally follow from the second step: an open-ended process in which co-operating nations would designate themselves as national ecosystems (i.e., politically defined subdivi-

sions of the Biosphere) responsible for managing affairs within their boundaries in both national and Biospheric interest. To give this legitimacy it would have to be built into national constitutional and legal systems

A necessary fourth step would be to insert into the charter of the United Nations and national constitutions procedures to be followed in the event that a substantial majority of citizens in an area might wish to disengage from their current government. This was recently done in Canada when the federal government in power asked the Supreme Court of Canada to spell out the conditions under which Quebec could legally separate from the rest of Canada.

I am sure that most politicians today would look on these suggestions with horror and profound distaste. Nevertheless, it needs to be repeated, as H.G. Wells (1928) pointed out, that one can never expect a world union from national politicians, diplomats or military leaders. Would it not therefore not be wise to examine what might be facilitated under the proposed changes that is negated under the present set of rules?

First and foremost, the new circumstances could, if globally desired, lead in the direction of a planetary civilization. Politicians could view this as giving up one sort of power (sovereignty, a political fiction which is on its way out anyway) for the opportunity of access to collective global power through cooperation. Furthermore, it could lead to the reduction or dissolution of nationally directed armed forces (a step that Costa Rica has already taken) permitting the redirection of finances toward the peaceful resolution of international disputes. The driving forces might be fear of the consequences of nuclear war, people's frustration over inability to change the warring system, and improved prospects for controlling conflict, if not peace. On the other hand, it could well be that another global catastrophe, like World War II, may be necessary to persuade people and nation states of the desirability of restructuring their relation to the UN.

A USEFUL MODEL

The Boundary Waters Treaty, concluded in 1909 between Canada and the United States, may be a useful model to follow in exploring the desirability of the changes proposed above. The Treaty has been in operation for nearly a century; furthermore, it is widely recognized in legal circles as a significant document in the history of international legislation for the peaceful resolution of international disputes. Yet, perhaps because of the stubborn reluctance of most politicians to give up power under their direct

control for broader powers not under their sole control, the Boundary Waters Treaty remains unique, globally.

The Treaty specifies ground rules for the establishment and operation of an International Joint Commission. The Commission is a body of six persons, three appointed by the President of the United States with the advice and consent of the Senate, and three by the Governor in Council of Canada on the advice of the Prime Minister of Canada. Under the terms of the Treaty, the Commissioners are obligated to act as a single body in the joint interest of the two nations rather than as national delegations under separate instruction from their respective governments.

The Treaty gave the Commission four powers:

- the quasi-judicial power of approving, or withholding the approval, of applications for the use, obstruction or diversion of boundary waters that would affect the levels or flows on the other side of the boundary
- the power, to conduct specific investigations (technically known as “references” under Article IX of the Treaty) at the request of either or both governments. (These have included questions related to the transmission of water-borne diseases, remedial works to improve the aesthetics of the American Falls at Niagara, water pollution, air pollution, flooding, damming, the use of water resources for irrigation, and the possible utility of transfer to Canada of Point Roberts, a small area in the State of Washington only accessible by land from Canada.)
- responsibility for surveillance and coordination of jointly approved programs, with an obligation to alert the two governments to discrepancies on either side of the boundary, and
- a fourth power, which has yet to be employed: with the consent of both Contracting Parties, and with the advice and consent of the Senate in the United States and the Governor in Council in Canada, questions may be referred to the Commission for *decision*.

Three aspects of the Boundary Waters Treaty make it a useful model for the evolution of a planetary civilization:

- (1) in practice, it follows an ecosystem approach to environmental management;
- (2) it uses the International Joint Commission as a kind of “supranational referee” to resolve trans-boundary problems in joint interest, and
- (3) it can be terminated on twelve months’ written notice by either Party.

The Treaty empowers the Commission to appoint experts from various disciplines and organizations to

assist the Commission in its work. These experts, like the Commissioners, are appointed to act for defined times and purposes in the joint interest of the two countries and not as representatives of the organizations that employ them. This allows the Commission to make full use of expert talents in exploring the feasibility of implementing of new opportunities and new institutions in supranational interest.

RESOLVING DISPUTES

In *The Transformation of War* Martin van Creveld (1992), military historian at Hebrew University in Jerusalem, wrote: "However unpalatable the fact, the real reason we have wars is that men like fighting, and women like those men who are prepared to fight on their behalf." But, Van Creveld also noted that many informed people in the developed world are now convinced that armed force can no more resolve differences between nation states than the Thirty Years' War was capable of resolving religious disputes. He regards low-intensity conflict as the probable future:

Judging by the experience of the last two decades, the visions of long-range, computerized, high-tech warfare so dear to the military industrial complex will never come to pass. Armed conflict ... will have more in common with the struggles of primitive tribes than with large-scale conventional war of the kind that the world may have seen for the last time in 1973 (the Arab-Israeli War), 1982 (the Falklands), and 1980-88 (the Iran-Iraq War). ... It will be a war of listening devices and of car-bombs, of men killing each other at close quarters, and of women using their purses to carry explosives and the drugs to pay for them. It will be protracted, bloody, and horrible.

A NEW ERA

As a result of Biospheric effects from the runaway growth of human population and technology we have entered a new era; and not only in respect to war. No one knows what global climate change may offer in the future. The short-term projection is for the greatest warming near the poles, melting of glaciers, rise of sea level, and flooding of coastal cities. Unpredictable side effects include: increased variability of weather; increased spread of tropical diseases; increased destructiveness of hurricanes and tornadoes; and increased desiccation, particularly when combined with upstream uses of water for

irrigation, and others.

Continental glaciers have repeatedly advanced and melted during the past two million years. During the advancing phases, sea level dropped by more than 100 meters, and continental glaciers several kilometers high crunched down over the land. For all that is known, the inadvertent flip of some unknown ecological "switch" could initiate a change from warmer to colder, or colder to warmer, with attendant global changes in the pattern of ocean currents. Such changes, if or when they come, can reasonably be expected to result in massive migrations of populations and re-definitions of political boundaries.

The differential growth of human populations can also lead to political changes. Joel Garreau (1981), a former editor of the Washington Post, traveled for two years to rediscover North America. What he found was expressed in the title of his book, *The Nine Nations of North America*. Irrespective of present political boundaries, these were (clockwise, starting from northeastern North America):

- **New England** (the Atlantic provinces of Canada and the northeastern part of the United States)
- **The Foundry** (southern Ontario, New York and other Great Lakes states, through other eastern states to Washington, D.C.)
- **Dixie** (the southeastern states, excluding the southern tip of Florida)
- **The Islands** (Cuba, Jamaica and other Caribbean islands, plus the southern tip of Florida)
- **The Breadbasket** (southern parts of Saskatchewan and Manitoba to northern parts of Oklahoma and Texas)
- **MexAmerica** (Mexico, Central America, southern parts of Texas, Oklahoma and California)
- **Ecotopia** (coastal areas of northern California, Oregon, Washington, British Columbia and Alaska)
- **The Empty Quarter** (Nevada, Colorado and inland areas north to Alberta, British Columbia, Alaska, and all of northern Canada except for Quebec and Labrador), and
- **Quebec.**

None of Garreau's readers argued about the authenticity of the nine nations, only whether the boundaries should be 50 miles this way or that.

Who knows where political boundaries may lie in North America, or for that matter around the globe, at the end of the present century? Will major parts of coastal cities be submerged? Will the European Union persist? Will large scale wars be a thing of the past? What about terrorism?

No one knows what contingencies a planetary civilization will have to deal with in its first millennium. And that is precisely why it is important

for nations to designate themselves as politically defined ecosystems responsible for managing their internal affairs jointly in national and Biospheric interest.

KEY WORDS Ecosystem Approach. Biosphere. UN. Morality. Boundary Waters Treaty.

ABSTRACT Four stages are described in the evolution of our species: (1) the development of a technological species; (2) a period characterized by subplanetary, warring nations; (3) an integrated planetary civilization; and (4) a Cosmic civilization (a planetary civilization that believes it has a cosmic purpose in being here). Stage (1), while still in progress, has been essentially completed. We have been stuck in stage (2) for too long. Stage (3) is in early phases of formation. A basis for stage (4) has recently been emerging from an insightful blends of scientific, evolutionary and religious beliefs etc. A re-structuring of the United Nations Organization (UN) is essential to facilitate the transformation from stage (2) to stage (3). Necessary changes in the UN system include: (1) political recognition of the need to preserve and enhance the health and integrity of the Biosphere in the joint interest of nations; (2) appointment of ambassadors to the UN to act in the joint interest of nations globally rather than as representatives of national governments; (3) an open-ended process in which nations designate themselves as politically defined national ecosystems, managing their affairs jointly in national and Biospheric interest; and (4) adoption by the UN and national constitutions of procedures to be followed in the event that a substantial majority of people in an area express a firm desire to disengage from their current national government. The

Boundary Waters Treaty of 1909 between the United States and Canada is suggested as a useful model to follow in instituting the above changes.

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