

# A Holistic Paradigm for the 21<sup>st</sup> Century

By

Phyllis Creighton and Derek Paul  
Science for Peace, Canada

## Preamble

Earth, indeed the ecosphere, faces unprecedented threats from the destructive effects of civilization — the warring, wastefulness, consumerism, burgeoning population, overexploitation of natural capital, and blindness of humankind toward the living system of which it is part. Failure to change course will spell disaster before long. Thus a new basis for policy making is imperative. This new basis must be grounded in a holistic way of thinking, to replace the paradigm that has underpinned thinking in the western world for more than three centuries.

We pause for a moment to examine what the old paradigm amounts to. Faith in reason, science, and technology took hold during the Renaissance and then the Age of Enlightenment, leading to an assumption of progress as their inevitable reward. The paradigm of that long era, which still holds sway, posits economic growth and the concomitant technological advances as measures of the desired progress. The result is the present materialism and wasteful consumerism. Reason must now be applied to develop a new understanding of progress [1]. For too long men have shortsightedly ridden roughshod over nature [2]. Seeing it as an externality to be dominated and used, they exhaust its resources through greed and wanton warring. This human drive for mastery has left us an ecologically threatened planet in the throes of social disintegration. The risk of ecosystem collapse [3] is matched by prophetic scientific insights: if a living system such as the ecosphere is allowed to reach a state of too great disorder, death will ensue. Social stress, strife, and violence compound the breakdown. Regionally or globally, such disorder will mean death on a large scale – perhaps universal [4].

For all of the above reasons, the old paradigm must be abandoned. Sound thinking and policy must be based on a realistic awareness that all living things are linked in a web of life [5]. Human life, dependent on the water, air, and land of the biosphere, is interlinked with plants and creatures. The new paradigm must be the web of life, which implies interconnectedness and justice for Earth and humanity as the moral imperatives for the renewal dictated by our present peril. Consonant with hard science and ethics — being grounded in conscience and scientific principles — this holistic paradigm centred on life provides the framework we need. The choices to be made must be analyzed in terms of life and death. The meaningful question when choosing is: will this policy sustain, enrich, and enhance life and its variety, or will it be harmful, destructive, and death dealing? Honest searching is needed to find good answers, which is never easy.

Analytical reason, as well as intuitive, emotional, and moral insights are needed for the thinking demanded by the present crisis. Our approach to policy-making must be visionary and Earth-minded. It must provide equitably and inclusively for both short- and long-term interests of living things and of humanity – all nations, peoples, races, and both genders. At this juncture, we need the broadest application of mind and energies.

To achieve the essential changes, we must end the paucity of women's voices in the world's top decision-making bodies. By their bent and by socially framed roles, women are most often inclined towards nurturing and sustaining life. Governance frames policy making. Most

parliaments, the U.S. Congress, most cabinets, the White House, the Pentagon, the CIA, NATO's hierarchy, the UN Security Council, the UN General Assembly, and the Vatican operate in male-dominator mode. What is needed is a partnership mode. A commitment to such partnership was in fact made at the 1995 Beijing Conference [6]. It was reinforced by the UN Security Council's adoption on 31 Oct. 2000 of Resolution 1325 on Women, Peace and Security, which mandates increased representation of women at all decision-making levels in national, regional, and international institutions and mechanisms for the prevention, management, and resolution of conflict. Women's issues and insights must be truly represented. The failure to achieve equity in any significant measure is a sobering sign and it impedes the framing of policy appropriate to the Earth's predicament.

## Modern policy: an ever-present choosing between life enhancing and death dealing

The evidence shows the world's ecosystem is under extreme stress and makes clear why the human race is at a critical juncture [3]. The concept of ecological footprint helps appraise humankind's predicament. The ecological footprint of a specified population is "the area of land and water ecosystems required on a continuous basis to produce the resources that the population consumes, and to assimilate (some of) the wastes that the population produces, wherever on Earth the relevant land/water may be located" [7]. The bio-capacity of the area occupied by the same population, by contrast, may be larger or smaller than the footprint. If the bio-capacity is smaller, the population can only sustain its existing lifestyle by importing or by living on its natural capital, which has the effect of reducing its bio-capacity later. If the footprints of all people are added and exceed the bio-capacity of the whole Earth, the natural capital of the Earth will decline unless steps are taken to reduce the footprint. A high quality of life could be had with a greatly reduced ecological footprint through appropriate technology and lifestyles in developed countries, and by a better match between population and Earth's carrying capacity.

Nearly every decision on major issues likely to be made in the next few years in the corridors of national or international power, whether by states, trade and financial institutions, or alliances of nations will support life in its fullness and diversity or move us closer to catastrophe [8]. What influences create the disorder that inches the world towards death, even universal death? Important among these are: greenhouse gas emissions; the culture of war, fueled by the cult of oil and resulting in militarization, armaments, and ongoing violent conflicts; failure to educate women, and indeed their suppression; denial of basic necessities to children; unfair trade policies; wasteful and destructive agriculture, fishing, and forestry practices; the use of inappropriate technology; disease, in particular, AIDS; improper use of the global commons; and punitive, unjust prison and justice systems.

By contrast, the world might still have a bright and long future if life-enhancing policies are pursued. These would be opposite to the gloomy list leading to decay and premature death: adopting a strong, realistic strategy to reduce greenhouse gas emissions quickly; guaranteeing the common security of nations; fostering transitions to democratic society in the dictatorships; abolishing armaments step by step, except in so far as international policing that does not rely on violence remains necessary in a crowded world; replacing military expenditures by necessary public spending on infrastructure worldwide; reining in greed; distributing wealth fairly; restraining and reversing world population growth through universal education, notably by educating women; replacing biased trading rules with equitable trading

policies; making sure children are well fed worldwide; abolishing structural adjustment conditionalities in a new and equitable international loan system; developing sound agricultural, fishing, and forestry practices and enforcing and enlarging their reach in the world community; extending medicare until it is instituted everywhere; restoring the integrity of the global commons; and establishing restorative and transformative justice. None of these objectives is impossible. All are economically and societally desirable and practicable.

This life-death choice may seem an extreme way of putting our predicament, but, in view of our planet's greatly strained ecosystems, it comes down to that. The growth model that resulted from regarding nature as an externality subject to human autocracy has proved neither benign nor sustainable. The web of life is the paradigm needed for thinking about the nexus of people, the environment, the economy, and society. Within this paradigm our responsibility is to live by an ethic of care for the natural world, our fellow human beings, and all living creatures, since we now recognize that they inhabit Earth by the same right as we do. Thus economics and use of finite resources must be undertaken as if both Earth and people matter. The protection of biodiversity — the riches of plants and other species — and of ecosystems is crucial. So too is social justice — ensuring that the basic needs of all people for food, clean water, shelter, health care, and education are met. Stewardship and the common good are indeed imperatives of interconnectedness and justice.

The relevance of this paradigm is starkly revealed in the fate of a very small country. The people of Tuvalu have been fortunate in finding a nation, New Zealand, that is prepared to take them in as their island territories become uninhabitable. Tuvalu is, however, only a bell-wether. We are grateful for the small mercy that this warning gives us.

In the end we come back to children, who are the human race of the future. Those who grow up malnourished do not develop fully physically and intellectually, and will not be able to make their full contributions to human society in what is likely to be a very difficult century [8]. To neglect them even for another decade would be a crime against humanity.

### **The way ahead**

Though they may well not have spelled out this holistic paradigm, many people have adopted it, as what they say and do shows. Such people are to be found among adherents of all the great religions, and also among environmentalists, organic farmers, and peace activists. You will find them in grass roots organizations — groups such as those working to reduce greenhouse gas emissions, people in the struggle to oppose corporate domination wherever it diminishes human rights, harms the environment, or undercuts social justice, as well as in the medical and helping professions. One practical way forward is therefore to join with them and learn from them. Governments and corporate leaders need to adopt the paradigm and to build on the achievements of those already paving the way. Much good news is already in print, as the short bibliography below illustrates.

### **Acknowledgements**

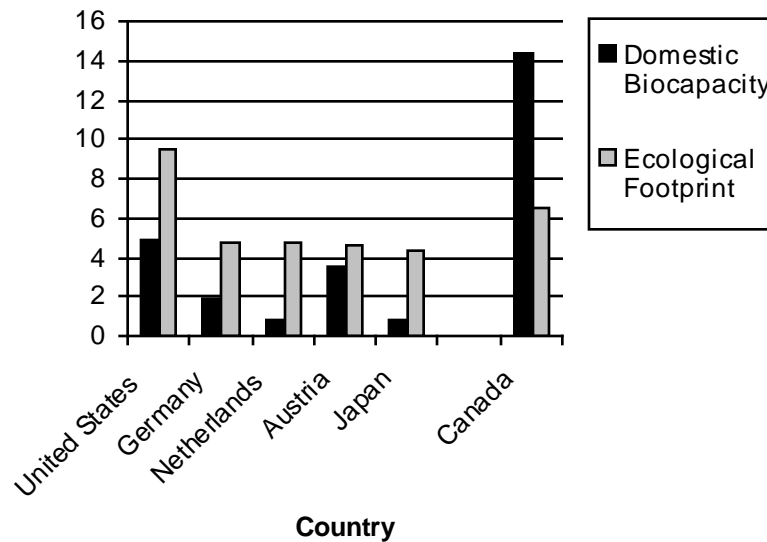
We warmly thank those who have critiqued drafts of this document: Helmut Burkhardt, Chandler Davis, Shirley Farlinger, Brydon Gombay, Franklyn Griffiths, Jamey Hecht, Phil Smith, and John Sparling.

## Notes

1. Robert Bateman, in *Thinking Like a Mountain* (Toronto: Penguin, 2000) p.ix, writes: The speed and volume of new discoveries have "imprinted on us the idea that endlessly accelerating growth and technological change are good in themselves. We've indentured ourselves to the master called 'Progress' and neglected to look after the planet on which all depends." He urges, "Humanity needs a new definition of 'Progress', one that values our heritage, both natural and human."
2. The early development of agriculture, beginning some 10,000 years ago, was part of this process, but only changed the ecosystems on a scattered and limited scale, and did not reduce the abundance and diversity of life. What has been happening these last hundred years amounts to environmental destruction on a huge scale and at an unprecedented rate.
3. There are many clear indicators of ecosystem collapse today. The decimation of the ocean's fisheries, the expansion of deserts, the rapid destruction of rainforest and cutting of boreal old-growth forest, complete in some areas, and the accelerated decimation or extinction of species are important examples — E.O. Wilson, *The Future of Life* (New York: Alfred A. Knopf 2002). The disintegration of the Arctic ice shelf is another warning, perhaps of a different kind, but nevertheless a warning.
4. Disorder is precisely defined in the science of thermodynamics, where it is called entropy, and associated with randomness. Applied to living systems, we find that too great disorder corresponds to death. The reference of physicians to illnesses as disorders is very apt, and fits the thermodynamic concept nicely. A single illustration will serve further to relate the concept of disorder to the lowering of the level of and diversity of life. Consider a savannah that is being encroached upon by a sandy desert. The newly formed desert illustrates randomness by the placement of the grains of sand, which appear at first sight to be all there is. Meanwhile most complex living systems, such as mammals, have left the desert. These, by contrast represent very high levels of order, being the opposite of random in structure. Thus living systems are highly ordered. Factors that increase disorder are well known to nonscientific observers, even those who know nothing of thermodynamics. Wars and pillage of the environment are two obvious examples.
5. Peoples whose technology was that of the Stone Age were aware of this web of life, and of the interdependence of the elements of this web, by living closer to nature than do urban dwellers today. However, this is not to say they watched over sustainability. Their world seemed sustainable because only occasionally would a group exhaust essential resources, thereby causing the collapse of its local economy. Today the importance of sustainability is global and this importance is being established in diverse ways, through environmentalists and ecologists, both amateur and professional, and through eco-feminism.
6. The United Nations' "Fourth World Conference on Women" — one of the world's largest — was held in Beijing, 4-15 September 1995. Its 6000 delegates from 189 countries agreed upon a substantial statement, "The Beijing Declaration and The Platform for Action", published by the UN in 1996.
7. W.E. Rees, *Encyclopedia of Biodiversity* (Academic Press, San Diego, 2000) vol. 2, pp.229-44. Figure 9.3 below is based upon estimates of bio-capacities of the indicated countries, uncorrected for declines in soil quality that are taking place; that is, the bio-capacities are likely overestimated. (W.E. Rees, in *Renewables-Based Technology: Sustainable Assessment*, eds. Jo Dewulf and Herman Van Langenhove (Chichester UK: John Wiley, 2006) Ch.9). The figure is reproduced by kind permission of John Wiley and Sons, UK.

In 1999, the world's footprint was calculated to be at least 20 percent higher than the world's bio-capacity. Thus the population of the world has already overexploited its natural capital. Almost all countries have footprints larger than their bio-capacity.

**Figure 9.3 Domestic Biocapacity Compared to Eco-Footprints of Selected Countries (2001 data)**



8. For an account of the plight of children, the “World Health Report” of the World Health Organization, and the UN’s “Human Development Report” are useful.

### **Bibliography**

David Suzuki and Holly Dressel, *Good News for a Change: how everyday people are helping the planet* (Toronto: Stoddart Publishing Co. Ltd., 2002; first paperback edition Greystone Books and David Suzuki Foundation, 2003)

The Ecologist team, *Go Mad: 365 daily ways to save the planet* (Think Publishing, London 2001)