SUSTAINABILITY:

Positioning the concept as a global goal

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INTRODUCTION : THE POWER OF PUBLIC OPINION

> "The problem of how to transmit our ecological reasoning to those whom we wish to influence – in what seems to us to be an ecologically "good" direction – is itself an ecological problem." — Gregory Bateson

The world's leading experts in all the relevant fields agree that Humankind now has the resources, technology, and knowledge to develop a way of living that could be economically healthy, socially equitable and ecologically sustainable (1). But implementation of the political, economic, technological and social changes required to develop a sustainable civilisation now requires a level of action and co-operation without precedent in history. It indicates a profound lack of political realism to suppose that such co-operation could possibly occur without widespread prior agreement on the goal. For when people share a common goal, their natural tendency is to co-operate in realising it.

This paper argues that the United Nations, NGOs, socially-responsible corporations, and the international educational community have utterly failed - for strategic reasons - to convince public opinion that sustainability is more important than short-term financial profit.

In the five years since the Earth Summit in Rio, some progress has been made to put the concept of "sustainable development" on the global agenda. But the concept of "sustainable development" is an oxymoron, and the progress falls dramatically short of the level of action that is needed (2). Consider the facts. Various International Treaties and Conventions have been agreed to conserve biodiversity, to protect against climate change, to ban cross-border toxic waste dumping, to outlaw trade in endangered species, and to emphasise the rights of future generations. Many countries now have national Agenda 21 plans in place: more than 1,800 local authorities in 31 countries have developed Local Agenda 21 actions plans for sustainable development (3). And some transnational corporations have significantly reduced their levels of waste and pollution (4).

But let us be realistic. The headlong rush to sign the World Trade Agreement overlooks many of its negative ecological and social consequences (5); most of the consumption and development now underway is more unsustainable than ever before; a billion peasants driven off the land are migrating to overcrowded cities in search of homes and jobs that don't exist (6); the promises of additional development aid agreed at Rio have not been kept; the long-awaited Peace Dividend from the end of the Cold War has failed to materialise; the world still spends 800 billion US dollars per annum on defence; the population explosion continues unabated; climate change, ozone depletion, tropical defores-

tation and desertification are increasing; loss of biodiversity continues at a hectic pace; water is becoming scarce; inequity, unemployment and homelessness are increasing (7); the former USSR and much of the developing world have fallen into a state of crime and anarchy (8); fundamentalist violence and racism are increasing; and the genie of genetically-modified living organisms (GMLO) is being unleashed from its bottle, threatening the stability of our planet's delicately-balanced ecosystem with a whole new level of risk. So while battles are being won, the war to achieve sustainability may yet be lost (9).

In order to win this historic struggle, those of us in the sustainability movement need to adopt a strategic approach which recognises the systemic nature of the crisis and which takes public opinion squarely into account.

Public opinion is the single greatest influence on our collective behaviour, and right now the most influential part of public opinion is more interested in so-called free trade and short-term profits than in sustainability. Sustainability is still perceived as an extra burden, a sacrifice we can't afford. But sustainability is no sacrifice: it is the greatest historical opportunity of all time!

To achieve sustainability while the window to do so remains "open", the UN / NGO community, educational institutions and socially-responsible corporations need to catalyse a shift in public awareness. This requires that we ourselves adopt a new way of seeing! Rather than reacting to the symptoms of the global crisis as they come up, in a piecemeal way, we must address the underlying cause. We need to adopt a proactive, strategic approach which takes public awareness squarely into account.

This paper provides a brief rationale for this approach and serves an an introduction to the Global Vision Project (10), an international educational media campaign now being launched with support from UNESCO, UNICEF, UNEP, UNDP, UNFPA, WHO, IISD and WWF International - World Wide Fund for Nature.

The purpose of the Global Vision Project is to "sell" the concept of sustainability as a global goal. It is designed to provide leading thinkers and organisations working on solutions to global problems with a means to join forces, combine our insights, integrate our outreach, and communicate our vision of a sustainable civilisation more effectively to the global public. The project is targeted especially at the global teenager. The potential audience is 1.3 billion viewers world-wide.

ADAPT OR PERISH

The evolutionary challenge of making our Human species ecologically sustainable is, in biological terms, a question of adaptation. If we fail to adapt to the reality of our new global environment, then we shall perish, as U. Thant said "if not with the bang of nuclear holocaust, then with the whimper of a species which ran out of air, water, resources and food."

Biology teaches us that any species which destroys its own environment eventually becomes extinct. But since the origin of the first towns and cities 7,000 years ago, urban civilisation has never had to be ecologically sustainable. As long as these urban centres could expand the territory from which they took their resources, civilisation could survive and prosper (albeit at the expense of the surrounding local ecosystem). This type of adaptation was an addictive relationship (11).

This expansion of our ecological life-support system gradually spread beyond the flat-earth horizons of local city-states, kingdoms, empires, and colonies, to superpowers and trans-national corporations whose global frontier has now returned upon itself to envelop the entire planet. What's new is that we are the first generation in all of history to be confronted with the fact that our ecologically imbalanced urban way of life is no longer viable, as the consequences are now becoming visible on a global scale. The point is that the 50% of Humankind who live in cities has little understanding of what sustainability really means, because the condition has never been part of its mythology, its history, or its experience.

It is therefore no exaggeration to say that the public relations challenge of "selling" the concept of sustainability to the global public is one of truly mythological proportions! But what is mythology? Ultimately, it is a Story which relates the individual to his fellow human beings, to history, to nature and to the universe itself. The Story is the glue that binds the society's world-view together in a way that empowers its individual members to perceive mutual issues of collective concern, to share agreement about their perceptions, to orient themselves in relation to them, and to form co-operative interpersonal and social relationships for mutual advantage, development and success. Let us than consider the Story of our human species in terms of ecological adaptation.

The evidence from palaeontology shows that for the first three million years of primate evolution, our hominid ancestors adapted very well to their changing environment (12). Archaeology and anthropology indicate that for the first three hundred thousand years of our existence as Homo Sapiens, our hunting-and-gathering lifestyles were also well adapted to their local ecosystems (13). Apart from the gradual extinction of a few species of megafauna such as the woolly mammoth and the sabre-toothed tiger, the vast majority of our ancestors were masters of the art of living - as Indigenous Peoples still do - in a harmonious relationship with Nature (14).

But this relationship changed suddenly wherever and whenever urban civilisation first appeared. This was a completely new form of adaptation, in which –paradoxically– the urban centre managed to prosper while simultaneously destroying the environment on which its survival depended. This was made possible only by the historical expansion of the territorial "footprint" from which cities extract their resources and into which they dump their pollution and waste. So long as these cities could expand their ecological footprint, this new type of adaptation was – for them – a great success (15).

If you have read Homer's *Odyssey,* you may remember that the landscape of Greece and the other the Mediterranean lands visited by Ulysses were mostly forested. Homer lived in the 8th century BCE. Only a few short centuries later, after the Greek colonies in Italy spawned the Roman Empire, most of the Mediterranean basin was deforested. In order to keep its cities, fleets and legions supplied with timber, fuel, and food, the Empire then expanded beyond the Alps to conquer most of Europe, much of the Near East, and most of North Africa. Having deforested the Eastern and Southern Mediterranean shoreline all the way from Lebanon and Egypt to Morocco in order to meet the Empire's growing demand for grain, topsoil erosion soon turned that entire region into the desert which remains today (and which is now spreading across the sea into Spain, France, Italy and Greece!) As Clive Ponting has shown in his book, A Green History of the World: The Environment and the Collapse of Great Civilisations (16), the same tragedy of deforestation, water depletion, salination and desertification caused the collapse of most of the great urban civilisations of antiquity, including those of Sumer, Mesopotamia, and Meso-America.

Urban civilisation is like a seven thousand-year credit card binge. As long as you can keep on borrowing from nature, everything in the short-term appears to be OK. Just as a heroin addict can lead a reasonably normal life so long as he can get his next fix, the addiction only becomes a problem the moment the supply runs out. In terms of our Story, this moment is where we stand today.

For this reason, one of the things we need to do in order to mobilise the level of action that is need for sustainability, is to make public opinion aware of the size of our addiction.

FOOTPRINT ANALYSIS REVEALS THE SIZE OF OUR ADDICTION

William Rees, Professor of Regional and Community Planning at the University of British Columbia defines the ecological footprint as follows :

> The ecological footprint is the corresponding area of productive land and aquatic ecosystems required to produce the resources used, and to assimilate the wastes produced, by a defined population at a specified material standard of living, wherever on Earth that land may be located." (17)

Rees' ecological footprint analysis of his home city of Vancouver, Canada, indicates that this city appropriates the productive output of an land area nearly 174 times larger that its political area to support its present consumer lifestyle. Other research shows that the aggregate consumption of wood, paper, fibre and food by the inhabitants of 29 cities in the Baltic Sea drainage basin appropriates an area 200 times larger than these cities themselves. Herbert Girardet, author of Gaia Atlas of Cities (18) and a co-founder of Sustainable London Trust (19), has calculated that the ecological footprint of London (with only 20% of Britain's population) covers 98% of the productive land in the UK!

It thus becomes quickly obvious that the developed countries have a global footprint. For example, William Rees estimates that the footprint of the Netherlands - for food production alone - appropriates between 100,000 and 140,000 square kilometres of agricultural land, mostly in the third world. He goes on to say:

> "This 'imported land' is five to seven times larger than the area of Holland's domestic arable land... It is worth remembering that Holland, like Japan, is often held up as an economic success story and an example for the developing world to follow. Despite small size, few natural resources, and relatively large populations, both Holland and Japan enjoy high material standards and positive current accounts and trade balances as measured in monetary terms. However, our analysis of physical flows shows that these and most other so-called 'advanced' economies are running massive, unaccounted ecological deficits with the rest of the planet... Even if their land area were twice as productive as world averages, many European countries would still run a deficit more than three times larger than domestic natural income. These data emphasise that (most developed countries) are over-populated in ecological terms - they could not maintain themselves at current material standards if forced by changing circumstances to live on their remaining endowments of domestic natural capital. This is hardly a good model for the rest of the world to follow!
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> Ecological deficits are a measure of the entropic load and resultant 'disordering' being imposed on the ecosphere by so-called advanced countries as the unaccounted cost of maintaining and further expanding their wealthy consumer economies. This massive entropic imbalance invokes what might be called the first axiom of ecological footprint analysis: On a finite planet, not all countries or regions can be net importers of carrying capacity. This, in turn, has serious implications for global development trends.
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> The current objective of international development is to raise the developing world to present first world materials standards. To achieve this objective, the Brundtland Commission argued for 'more rapid economic growth in both industrial and developing countries' and suggested that 'a five to ten-fold increase in world industrial output can be anticipated by the time world population stabilises some time in the next century.' (WCED, 1987).
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> Let us examine this prospect using ecological footprint analysis. If just the present [January 1996] world population of 5.8 billion people were to live at current North American ecological standards (say 4.5 ha/person), a reasonable first approximation of the total productive land requirement would be 26 billion hectares (assuming present technologies). However, there are only just over 13 billion hectares of land on Earth, of which only 8.8 billion are ecologically productive cropland, pasture, or forest (1.5 ha/person). In short, we would need an additional two planet Earths to accommodate the increased ecological load of people alive today. If the population were to stabilise at between 10 and 11 billion sometime in the next century, five additional Earths would be needed, all else being equal - and this just to maintain the present rate of ecological decline (Rees and Weinberger, 1994).
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> While this may seem to be an astonishing result, empirical evidence suggests that five phantom planets is, in fact, a considerable underestimate (keep in mind that our footprint estimates are conservative). Global and regional-scale ecological change in the form of atmospheric change, ozone depletion, soil loss, ground water

depletion, deforestation, fisheries collapse, loss of biodiversity, etc., is accelerating. This is direct evidence that aggregate consumption exceeds natural income in certain critical categories and that the carrying capacity of this one Earth is being steadily eroded. In short, the ecological footprint of the present world population/economy already exceeds the total productive land area (or ecological space) available on Earth.

This situation is, of course, largely attributable to consumption by that wealthy quarter of the world's population who use 75% of global resources. The WCED's 'five to ten-fold increase in industrial output' was deemed necessary to address this obvious inequity while accommodating a much larger population. However, since the world is already ecologically full, sustainable growth on this scale using present technology would require five to ten additional planets." (20)

This is an apt indicator of the size of the addiction needed to keep our unsustainable society going, and of the massive shift in public awareness – and technological- and resource-efficiency – that will be needed to kick the consumption habit.

THE PROBLEM OF CITIES

Being unsustainable has been the economic modus operandi of urban civilisation for the past 7,000 years. What is new is the realisation that it is no longer possible to continue operating in this way. In cultural terms, developing a sustainable civilisation therefore requires that we make our cities sustainable. This need is clear, for most urban centres – as presently structured – are not sustainable. Unless they become so, the international effort to achieve a sustainable civilisation will fail, as the ecological impact of the world's rapidly growing urban population wreaks increasing havoc on the Earth's biosphere.

In 1900, only 15% of Humankind lived in cities. 50% do so now. There are already 213 cities of more than one million inhabitants, and 23 mega-cities of more than ten million (21). Today's urban population is expected to double in the coming century. Since the UN City Summit in Istanbul in 1996, some 1,800 local authorities around the world have begin to implement Local Agenda 21 programmes. But this has not stopped the urban juggernaut. Urbanisation is happening faster than ever before, and not only in the developing countries, but in the developed countries as well.

So long as the inhabitants of cities do not understand what sustainability means and why it is not a soft option, they will continue to perceive it as a some kind of extra burden, a sacrifice they can't afford, utterly failing to comprehend the magnitude of untapped economic and social benefits it offers.

Try to imagine what it would feel like to live in a world where the population were stable, every country was self-reliant in terms of energy and food, where climate change, deforestation, desertification, hunger, poverty, illiteracy, human rights violations and easily-preventable diseases had been eliminated, and where we did not have to waste 800 billion dollars a year to feel safe. Of course this is very hard to imagine, but that is precisely the point!

PERSONAL RESPONSIBILITY

"Universal responsibility is the key to human survival." — The Dalai Lama.

Another cultural consideration we must not overlook is the issue of personal responsibility. The archeological and artistic evidence - as comparative mythologist Joseph Campbell has shown in his excellent book and TV series The Power of Myth (22) - indicates that during the 30 millennia of prehistory, the mythological worldviews of our pre-urban ancestors were universally expressed through metaphors of animism, pantheism, and the Goddess immanent in Mother Earth (23). Emphasising a profound awareness of human partnership with nature, these versions of the Story highlighted the importance of personal responsibility. The Iroquois Confederacy of North America, for example, discour-

aged any behaviour that might jeopardise the welfare of their descendants and of their fellow-species for seven generations into the future.

As psychiatrist John Weir Perry points out, this indigenous tradition of personal responsibility for the common good collapsed when the old metaphors of partnership were replaced by those of domination, embodied in form of authoritarian male gods (24). These autocratic rulers made the first appearance in the Story when the first cities appeared upon the land in India, Mesopotamia, China, Egypt, Greece and the Americas. The Old Testament God, Yahveh, is a classical example. Bursting on the scene when Jewish pastoralists first settled into cities, he was an absolute ruler, the only one who is responsible. Everybody else's job is to follow orders: you are not responsible, and you will be punished if you do not do His will.

While this political arrangement suited the needs of God-Kings, Pharaohs, and Emperors intent upon expanding empire, it was achieved at a price – the abdication of personal responsibility. But as the Dalai Lama observed during the Earth Summit in Rio, "universal responsibility is the key to human survival." (25)

In historical and anthropological terms, we should not forget that the vast majority of people in the world today are the descendants of conquered peoples. Centuries of socialisation have robbed us of our traditional dignity, repressed our innate sense of personal responsibility, and conditioned us to expect our leaders – and the experts through which our societies manage our collective affairs – to do our thinking for us and take responsibility on our behalf.

This statement may sound far-fetched until one looks at the way in which our society's world view became so fragmented that we have forgotten the most basic fact of life: that we and the world are a whole system in which what we do depends on what we see, and this, in turn, depends on our own way of seeing.

WAYS OF SEEING

"We can't even think of solutions without correctly recognising the problems, and it is now commonplace to pose our problems incorrectly. We tend to focus on what's seen, rather than on our way of seeing... Instead of focusing on how we produce and consume, we must focus on how we perceive and on how we communicate."

– Gene Youngblood (26)

The [industrial] world begins by making splits, then drawing boundaries, then solidifying these boundaries. Then we fool ourselves into believing what we have made ourselves see. Solidifying boundaries is very comfortable, because it allows us to deny our experience... We miss the whole system."

– Gregory Bateson (27)

Fragmentation of the urban world-view occurred both vertically and horizontally (28). Instead of the coherent cosmology that was shared by all members of pre-urban societies, the information explosion associated with territorial expansion, urbanisation, and increased eco-social complexity triggered a multi-level splitting of the world-view, corresponding to each of the social classes into which the body-politic stratified itself at the onset of the urban revolution. But this division was unequal. Whereas members of tribal societies had more or less equal access to resources, knowledge, and responsibility, this was no longer the case by the time the tribe has become a kingdom or and empire.

The stratification of the world-view was arranged hierarchically in such a way that the higher up you were, the more general the information you had. Whether in Tutankhamun's Egypt, Caesar's Rome, Shogun's Japan, or Queen Victoria's British Empire, the illiterate serf could not possibly understand the complex world of his peasant master, the peasant that of the village squire, the country gentleman that of the city bourgeoisie, and so on up the social ladder to the aristocracy. Only the King, Pharaoh, or Emperor was the ruler of all he surveyed. This centralisation of the social decision-making process moved

responsibility away from the individual towards the ruler. Whether people abdicated their personal responsibility willingly, or it was taken from them by conquest, the result is the same: now only the ruler is responsible; the duty of his subjects is to do as they are told.

It seems hard to imagine how the historical expansion of the eco-social territory – to which the society needed, in turn, to adapt – could have possibly occurred without such vertical stratification of the world view. But as the urban centres grew and appropriated more and more territory to supply themselves with vital resources, there came a point when even the wisest emperors must have found themselves overwhelmed by the complexity of their empires.

SPECIALISATION

Whether oppressive or oppressed, most societies are descended from conquered peoples, conditioned to abdicate their personal responsibility and follow leaders.

Here we find the need for the horizontal fragmentation of the urban society's world-view. Beyond a certain level of growth, both the territorial and the social environments became so complex that the individual ruler was no longer capable of making collective decisions on his own. This is the point where individual common sense finally yielded to the pigeon-holed tunnel vision of professionally-qualified specialist expertise.

From here on in, specialists are seen as the indispensable answer to what now becomes a whole new kind of problem: for now that the fragmented world-view had de-coupled the individual common sense of the people from effective participation in the process of societal self-regulation, it is the very core of the society's self organising function which turned itself off. The metabolic parameters of the system / environment relationship then began to slip from dynamic equilibrium down exponential curves toward chaos. Even though the basic problem of unsustainable adaptation was pushed back by impressive feats of science and technology, it cascaded down through the centuries and multiplied itself in unimaginable dangers that thrive unseen, beyond the range of the society's world-view, like the accumulating ecological resource deficits that are all but invisible from the corporate boardroom and the stock-market trading floor.

As the urban / industrial transformation gathered momentum, the fragmentation of the world-view thus produced a corresponding splitting of the body politic into specialised professions. Accordingly, these mono-disciplinary compartments became the new focal points around which urban civilisation organised itself. The sacred and the secular became separated; economic activity was split off from learning, and upcoming generations of youth were sent off to "university" departments to become "qualified" for specialised "jobs" in the "marketplace". The resulting experts then attacked the symptoms. We delegated "inflation" to "economists", "unemployment" to "politicians", "disease" to "doctors", "crime" to the "police", "neurosis" to "psychiatrists", "enemies" to the "army" ,"security" to "intelligence agencies", and "ecological problems" to the "environmentalists."

Meanwhile, the underlying maladaptation did not, of course, improve. On the contrary, much precious time, effort and resources must be expended to reinforce these piecemeal solutions that our fragmented world view still delegates to the specialised institutions through which we attempt to manage our collective affairs.

Until the late 20th century, however, society's stability still appeared to rest on the pillars of government, industry, banking, medicine, law, education, advertising, the military, and the media. But token tinkering with symptoms does not cure a disease. As Socrates observed before the collapse of ancient Greece, the people "will appear to be omniscient, but will generally know nothing."

In this way, the fragmented structure of the urban world-view came to prevent people from using their common sense to deal with the social issues at hand. The ensuing loss of confidence in ourselves and our institutions fosters routine irresponsibility, rules, regulations, loopholes, bureaucracy, institutional rigor mortis, official paranoia, militaristic

posturing, and greed. Consider the average inhabitant of London, New York, Moscow, Rio, Cairo, Mexico City or Beijing: he or she often feels utterly impotent to deal with inflation, unemployment, the arms race, cancer, terrorism, repression, radioactive wastes, drug abuse, crime, resource depletion and mental stress. It then becomes commonplace for individuals – who are perfectly well endowed with common sense – to completely abdicate their responsibility for their own part of the problem, hoping, perhaps in a magical way, for ready-made solutions and quick fixes from more "powerful" experts or from some great leader, to whom they have unwittingly given away their own ability to respond (29)

This addiction to linear thinking and the abdication of personal responsibility – the inevitable result of the fragmented world-view – is then the heart of the problem: a vicious circle, a positive feedback loop that might eventually push our species over the brink of self-annihilation, so long as we continue to project the disorder we create outside ourselves, and fail to recognise the pattern that each one of us plays in the problem and its possible solution.

So how can Humankind recover that lost sense of personal responsibility that we so urgently need to mobilise for our species to become ecologically sustainable?

In this regard, the advent of the personal computer linked to the internet and the world wide web is rapidly making its users aware of interconnectivity on a global scale (30). There can be little doubt that this technology is the greatest advance since the invention of the printing press. By giving anyone with access the ability to search, find and browse the latest information on any subject under the sun, the web certainly has the potential to stimulate a massive shift in public awareness, giving every user access to a common cyberspace with its vast reservoir of information. But we must beware of technological fixes. The utlimate question still remains: will the consumption junkie be able to control his habit? To answer this question, let us consider the issue of communication and control.

CYBERNETIC ASPECTS

The science of communication and control is called Cybernetics (31). The word comes from the Greek for *helmsman* – the one who steers a ship. The science has two branches. One deals with the control systems of inanimate machines such as computers, spacecraft and so-called "smart" missiles. This does not concern us here. The second branch concerns itself with the ways in which living systems – i.e. biological organisms and human societies – organise, regulate or govern themselves. Perhaps the most brilliant thinker in this field was the late anthropologist and biological philosopher Gregory Bateson (32). An Englishman who lived much of his life in America, he was married to Margaret Mead and wrote a number of books including Steps to an Ecology of Mind and Mind and Nature : A Necessary Unity. Bateson, who chose his words very carefully, was convinced that:

> "Cybernetics provides the means of achieving a new and perhaps more human outlook, a means of changing our philosophy of control, and a means of seeing our own follies in wider perspective."

Bateson was a very wise man, and he did not make this claim lightly. What fascinated him was the way living systems maintain homeostasis. He pointed out that whereas mechanical machines are designed along principles of linear control, living systems are based on non-linear negative feedback loops. Linear control can be illustrated by the input-output system of a mechanical typewriter. Your press a key, the consequences travel along a series of levers, and the corresponding letter is pressed onto the page at the other end of the machine.

The non-linear control system immanent in living systems, on the other hand, can be illustrated by the predator / prey relationship. Imagine a small island inhabited foxes and rabbits. If the foxes maximise their appetite for rabbits, their consumption will soon outstrip the latter's reproductive rate. The resulting decrease in the number of rabbits will

bring down the foxes' own population; but this in turn, will allow the rabbits to increase theirs back up again, and so on. Here we see that the output of every stage of the process is fed back into the system as a new input. This negative feedback loop ensures that the whole is a self-organising, self-governing system.

Now Bateson pointed out that the spiritual or religious cosmological structure of our ancestors' world-views were all built around metaphors of such non-linearity, which served to remind them of the sacredness of the larger whole within which they were embedded; but the modern way of thinking which developed especially during the Renaissance and the Enlightenment tends to overlook this essential fact. He also observed that most of the systemic problems which now threaten Homo Sapiens are the direct result of misguided human attempts to try to apply linear control to natural and social systems which are essentially non-linear! In international relations, for example, we see the victors of the first world war trying to control Germany through the punitive war-tax reparations stipulated in the Treaty of Versailles. This produced precisely the opposite effect than was intended, as the massive economic hardship which resulted in Germany drove the people of that country to embrace Hitler as a new Messiah. Similarly, the Nazis' attempt to eliminate the Jewish race by the death-camp method also produced an opposite result: the creation of the state of Israel. Similarly again, the current Israeli government's hard-line policy of repression and settlement of Palestinian land in the Occupied Territories will most likely result in the creation of a sovereign Palestinian state.

The point, as Bateson remarked, is that life on Earth is a self-organising system, and "no part of such a cybernetic system can have unilateral control over the whole or any other part." (33) This Cybernetic truth applies not just to misguided human attempts to control nature, but also to individuals and social groups such as ourselves, who might like to change the behaviour of others - if only we had enough power to do so. But as Bateson said:

> "The myth of power, is of course, a very powerful myth; and probably most people in this world more or less believe in it... But it is still epistemological lunacy and leads inevitably to all sorts of disaster... If we continue to operate in terms of a Cartesian dualism of mind versus matter, we shall probably also come to see the world in terms of God versus man; élite versus people; chosen race versus others; nation versus nation and man versus environment. It is doubtful whether a species having both an advanced technology and this strange way of looking at the world can endure...
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> The whole of our thinking about what we are and what other people are has got to be restructured. This is not funny, and I do not know how long we have to do it in. If we continue to operate on the premises that were fashionable during the Pre-Cybernetic era, and which were especially underlined during the Industrial Revolution, which seemed to validate the Darwinian unit of survival, we may have twenty or thirty years before the logical reductio ad absurdum of our old positions destroys us. Nobody knows how long we have, under the present system, before some disaster strikes us, more serious than the destruction of any group of nations. The most important task today is, perhaps, to learn to think in the new way." (34)

Now consider the United Nations and all its specialised agencies, the governments of its 185 member states, and the NGO community. And consider the world-wide movement for sustainability, in the larger meaning of the word, including all the concurrent efforts for democracy, peace, health, human rights, gender equality, fair trade, religious pluralism, social justice and education. Insofar as our way of thinking is limited to attempts to control the symptoms of our global dis-ease, all we are really doing is trying to do modify the behaviour of those whom we may perceive to be responsible for the various problems we would like to solve! This pre-Cybernetic way of thinking reinforces the perceptual splitting of Humankind into opposing groups: the ecologists versus the polluters, pacifists versus the arms industry, human rights activists versus totalitarians, progressives versus conservatives, political party A versus political party B, religious fundamentalists versus their enemies, terrorists of the left versus terrorists of the right, people versus the

corporations, "us" against "the system" – and vice-versa! Enormous amounts of effort, resources, money and time – intended to make things better – are wasted by both sides in a mutual cancelling-out process of complementary antagonism, which changes nothing while the decades pass and we continue to destroy our planet.

But the global problems we face are not really separate from each other, nor from the global public which needs to resolve them within the coming generation. As of 1997 that's almost six billion people, each one of whom is part of the whole human / environment system in question, and this includes you and me and all of our unconscious assumptions, expectations, and beliefs as well. As Bateson said:

> "To want control is the pathology! Not that the person can get control, because of course you never do... Man is only a part of larger systems, and the part can never control the whole..."

Bateson put it in a nutshell:

> "The question of how to transmit our ecological reasoning to those whom we wish to influence in what seems to us to be an ecologically good direction is itself an ecological problem."

Carl Jung made the same observation in psychological terms:

> "To know where the other person makes a mistake is of little value. It only becomes interesting when you know where you make the mistake, for then you can do something about it. What we can improve in others is of doubtful utility as a rule, if, indeed, it has any effect at all."

So how could this whole systems approach translate into practical action? There is a precedent. 2,600 years ago in China however, the philosopher-poet Lao Tsu recognised the self-organising principle immanent in nature, which he named the Tao. Eloquently described in his poem, the Tao Te Ching, (35) this essentially Cybernetic idea became the general systems theory of Chinese cosmology. The cybernetic principles of Taoism were implemented in government, medicine, agriculture and religion. Adapted by Confucius and Buddha, they went on to influence the whole of Asian culture for thousands of years thereafter. Another Taoistic insight comes to us in the Chinese ideogram for "crisis", which as is well known, is a combination of the signs for "danger" and "opportunity".

Today, standing at the threshold of the global age, a whole systems approach to the global crisis - and the manner in which it came about - reveals the opportunity for a new strategic approach which have far greater potential for healing the underlying source of our dis-ease than the piecemeal efforts at controlling the symptoms currently underway.

This optimistic-sounding premise is based on the emerging scientific paradigm of the self-organising universe (36), including the conscious and unconscious beliefs of those human beings whose behaviour many of you in this conference would like to change. This leads to a realisation which may seem naïve until one understands the reason for it: namely, that individual common sense is now the largest untapped resource on the planet! The real naïveté, however, is to imagine that our existing political and legislative modes of action are going to be able to solve our crisis for us. Political action as we know it – in the age of the Internet – too often remains stuck in the organised attempt to obtain linear control over non linear eco-social organisations, and is therefore structurally obsolete.

By describing the cultural problem of how to adapt to our new global environment in Cybernetic terms, it appears that rather than attempting to control the symptoms of the world problematique in a piecemeal and adversarial way, it will be far more efficient, cost-effective, and fun to empower people to see for themselves what they can do to make a difference.

This requires a strategic approach to the use of information.

GLOBAL STRATEGY

Can humankind really develop a sustainable civilisation while the window of opportunity to do so remains open? As mentioned earlier, we still have the resources, technology, and knowledge to develop a form of civilisation that could be economically healthy, socially equitable, and ecologically sustainable. But the progress that has been made since the Earth Summit falls dramatically short of the level of action that is needed. So while battles are being won, the war to achieve sustainability may yet be lost. In order to win, those of us in the sustainability movement urgently need to adopt a whole-systems, strategic approach which recognises the systemic nature of the crisis.

This is a strategy which deals with the underlying cause, rather than attacking the symptoms, because tinkering with symptoms does not heal a disease. It is a strategy which takes public opinion into account, because public opinion is the ultimate shaper of human behaviour. And it is a strategy which recognises that public opinion is determined by various psychological and cultural assumptions, including unconscious feelings and unexamined beliefs about the world situation and about human nature itself.

We must not forget that in terms of our Story, the psychological dimensions of the Myth of Progress cast a long shadow in the image of Apocalypse (37). This ancient metaphor or world-destruction-and-renewal is found in all cosmologies. As Jung and others have shown, it is a symbol of transformation that relates to the process of personal growth (38). But its expression in the vision which St. John obtained on the Grecian isle of Patmos, immortalised in the Bible's Book of Revelations, has been interpreted literally for two millennia as an historical prophecy. Now that humankind has reached the stage where we have the capacity to make the world unfit for our own survival, the image of Apocalypse has acquired renewed potency and suggests that if we are doomed anyway, why bother trying to save the planet?

Many individuals and corporations certainly behave as if this were the case (39). But as the Dalai Lama pointed out, of all the threats we face, the greatest danger is that people lose hope for the future.

From this perspective, it is clear that our strategy should focus public awareness on the magnitude of untapped economic and social benefits which a sustainable civilisation could bring for all of humankind. If the United Nations, NGOs, universities, and other stakeholders committed to sustainability mean to succeed, we need to co-operate in massive educational campaign to foster the public awareness – and action – that are needed. From a whole systems point of view, the most effective strategy is to promote the idea of a sustainable civilisation as a global goal. (40)

The international public has little understanding of the dividend which a sustainable civilisation has to offer, for the economic and social benefits almost defy description. To sell the idea and also empower people to find out what they can do to make a difference, we need to foster the development of a new way of seeing that recognises the integrity of Humankind and the Biosphere as a whole system. As Al Gore said,

> "This is perhaps the most difficult and the most important challenge we face. If a new way of thinking about the natural world emerges, all of the other necessary actions will become instantly more feasible - just as the emergence of a new way of thinking about communism in Eastern Europe made feasible all of the steps toward democracy that had been 'unthinkable' only a few months before." (41)

Mikhail Gorbachev expressed the same idea:

> "No existing ideology or philosophy can claim success in addressing the global crisis... We need to make a transition to a new civilisation. The whole paradigm of civilisation will have to change... The fatalistic approach is not acceptable. We have to begin to think about how to guide the process of global change." (42)

This strategy will be far more cost-effective than attacking the symptoms as they come up in a piecemeal way, or trying to remedy the situation after it gets worse. As British futurist James Robertson said:

> "The same alternative will be a future that comes about by its own momentum, once enough of us decide that it is possible and decide to make it happen... Many of us see this breakthrough as the central project, the historic task for the two or three generations living at the present time." (43)

Promoting sustainability as a global goal will indeed help to make the transition come about in a self-organising way, as more and more people realise that sustainability is actually in everybody's self-interest. As Worldwatch Institute Director Lester Brown put it, "at first the changes are slow, but they are cumulative and they are accelerating. Mutually reinforcing trends may move us towards a sustainable society much more quickly than now seems likely." Brown then points out the mythological dimension:

> "Taking part in the creation of a sustainable society will be an extraordinarily satisfying experience, bringing a sense of adventure that our ancestors did not have. In effect, we have embarked on a shared adventure, the building of a society that has the potential to be an enduring one. This awareness could begin to permeate almost everything we do, imbuing it with a sense of excitement - one that derives, in part, from full knowledge of the risks and consequences of failure, as well as from the scale of the undertaking, which has no precedent... The development of a sustainable civilisation will require the most massive adult education program ever launched. This, in turn, will shift part of the responsibility for education from the formal educational system to the communications media." (44)

As Systems Theorist Erich Jantsch emphasised: "learning is not the importation of strange knowledge into a system, but the mobilisation of processes which are inherent to the system itself." (45)

In their book Seven Tomorrows, Global Business Network Chairman Peter Schwartz, Economist Paul Hawken, and Senior SRI International researcher James Ogilvy observed:

> "Humanity stands at an unique point: simultaneously our problems are so acute and our communications network so widespread that, for the first time in world history, genuinely collective and democratic decisions are both demanded and possible. In order to choose intelligently, we need a sufficiently widespread consciousness of our condition and of our capacity to alter it through the decisions of enough people. We need a collective intelligence of a kind that may not have characterised the human species in the past; but we see no reason to believe that, given the highly developed nervous system of an advanced communications network, a whole population cannot reach a stage of mature self-consciousness much as an individual does." (46)

Since our target audience is global, this presents an educational challenge of the first magnitude. It requires a whole-systems approach that is deeply informed by political savvy, multi-disciplinary insight, democratic values, and an anthropological sensitivity to the cultural diversity of Humankind. In effect, we need to articulate a new world-view, a mythology for the global age. And we need to express it in symbolic forms that can transcend ideological, religious, and cultural boundaries and be widely shared through the mass media.

UNLEASHING THE POWER OF THE GLOBAL TEENAGER

As we cross the threshold into the global age, half the population is under the age of 20. As Whole Earth Review magazine put it, "along the way, these billions of teenagers will listen to the same music, watch the same movies, wear the same clothes, and perhaps study the same things in school. There is a Global Teenager emerging, global both in proportion and in perspective (47). It goes without saying that it would be tragic if such

globalisation were to wipe out the rich diversity of their local cultures. But as Nobel Peace laureate Rigoberta Menchú Tum put it, "the solutions will come when people become educated about global community values."

Community values are traditionally expressed through the Story, i.e.: through religion and myth. As Joseph Campbell said:

> "There is no conflict between mysticism and science, but there is a conflict between the science of 2000 BC. and the science of 2000 A.D.... The three-level universe of the Bible is of no use to us. We have to have poets, we have to have seers who will render to us the experience of the transcendent through the world in which we are living." (48)

Cultural historian William Irwin Thompson explains:

> "The transformations of culture do not take place in history, they take place in myth. It is because the individual cannot perceive in the limits of his own lifetime such transformations as the Neolithic or Industrial Revolutions that we have need of myth. A model, a hypothesis, or a myth is a way of rendering the invisible. Because the unconscious is outside of time, it can perceive transformations beyond the limits of the ego. These unconscious perceptions are expressed in art or mythologies. We ourselves are living in an age of cultural transformation, but if you went to the experts to ask for a description, they would tell you nothing. You have to go to those who are at home in the unconscious and in the subconscious, the artists and prophets: through myth and symbol in art, science fiction or religion, they will describe the present by speaking about the future." (49)

As James Joyce said in A Portrait of the Artist, the task at hand is to "forge in the smithy of my soul the uncreated conscience of my race." (50)

This strategy requires an artistic approach to the use of information. Marshall McLuhan put it in a nutshell:

> "The new age of education is programmed for discovery rather than instruction. Art as radar feedback, early warning system, the antennae of the race."

In response to this challenge, I would like to finish by recommending four practical programmes of action for your consideration.

RECOMMENDATIONS FOR ACTION

1. ADOPT A GLOBAL CURRICULUM FOR SUSTAINABILITY

    All UN member states should adopt a global curriculum for sustainability, by the year 2,000. As Task Master for Chapter 36 of Agenda 21, UNESCO should put this project at the top of its agenda and present its recommendations at the 1998 gathering of the Ministers of Education during the International Conference on Education (ICE) in Geneva. Such a curriculum should integrate basic principles of general systems theory and cybernetics at the primary level, teach them in more detail at the secondary level, and promote their adoption in greater depth in universities. Gregory Bateson should be required reading.

2. CREATE COMMUNITY-BUILT VISIONS OF SUSTAINABILITY

    Implementation of Agenda 21 requires a community-built vision of sustainability. As the excellent Local Agenda 21 Planning Guide (published by ICLEI, UNEP and IDRC) points out, "experience shows that the development of sustainable cities and the indicators used to measure progress in that direction are most effective when they are 'owned' by community stakeholders, i.e. when the process of their creation has been agreed upon by the whole community. Only when they are thus legitimised, will they be actively used as the basis for planning and action." The Agenda 21 Planning Guide provides an excellent approach to building the community vision through stakeholder participation, issues identification, assessment of problems and priorities, agreement on action goals, formation of a strategic plan, and implementation and evaluation thereof. Details may be found on the World Wide Web at www.iclei.org

3. DEVELOP COMPUTER SOFTWARE
    FOR SUSTAINABLE URBAN MANAGEMENT

    Making our cities sustainable would be greatly facilitated through the development of computer software to enable any town or city to measure its metabolism and footprint. This would enable the various stakeholders - municipalities, the private sector, schools and universities, and NGOs - to understand the hidden long term costs of unsustainability, discover the magnitude of untapped benefits which sustainability has to offer within their own communities, and empower them to find out for themselves what they can do to make a difference. A detailed proposal may be found on the World Wide Web at www.global-vision.org/city

4. SELL THE CONCEPT OF SUSTAINABILITY AS A GLOBAL GOAL

    The Global Vision Project is a long-term international educational media campaign to "sell" the concept of sustainability as a global goal. This project is designed to provide UN agencies, NGOs, institutes, universities, schools, socially-responsible corporations, professional associations, religious groups, and leading thinkers working on solutions to global problems with a means to combine our insights, integrate our outreach, and communicate our message of a positive future more effectively to the global public. Media products currently in development include Sustainability (a multimedia package of 10 films, a CD-ROM, student activity pack and website), and a feature film. International partners include UNESCO, UNEP, UNDP, UNICEF, WHO, WWF International - World Wide Fund for Nature, and the International Institute for Sustainable Development (IISD). Details of how to participate may be found on the web at www.global-vision.org

ENDNOTES:

1. For an authoritative overview of the prospects for sustainability, see Beyond The Limits: Confronting Global Collapse, Envisioning a Sustainable Future. by Donnela H. & Dennis Meadows and Jorgen Randers. Chelsea Green Publishing Company, Post Mills, Vermont, USA. 1993. The authors summarise the facts as follows:

    "A. Human use of many essential resources and generation of many pollutants have already surpassed rates that are physically sustainable. Without significant reductions in material and energy flows, there will be in the coming decades an uncontrolled decline in per capita food output, energy use and industrial production.

    B. This decline is not inevitable. To avoid it two changes are necessary. The first is a comprehensive revision of policies and practices that perpetuate growth in material consumption and in population. A second is a rapid, drastic increase in the efficiency with which materials are used.

    C. A sustainable society is still technically and economically possible. It could be much more desirable than a society that tries to solve its problems by constant expansion. The transition to a sustainable society requires a careful balance between long-term and short term goals, and an emphasis on sufficiency, equity, and quality of life rather than on quantity of output. It requires more than productivity and more than technology; it also requires maturity, compassion, and wisdom."

2. See Earth Summit Ends With Disappointment and Hope, by Martin Khor, in Rio Reviews, Centre for Our Common Future, Geneva, 1992. Khor, who heads the Third World Network, pointed out that the Secretariat of the UN Conference on Environment and Development (Earth Summit) "estimated that US$600 billion [of additional annual development aid] is required by the South alone, of which the external aid component is US$125 billion. But the actual commitments from the North are not forthcoming... Without the commitment of the industrialised countries, which hold all the important levers of world economic and political power, it would be difficult, if not impossible, to tackle the causes of environment or development problems."

    Maurice Strong, the Secretary General of the UNCED Conference, made the following statement during a press conference immediately after the Earth Summit:

    "Whilst the Conference was successful as a meeting, not a single thing has changed regarding our civilisational behaviour. We didn't succeed 20 years ago at the Stockholm Conference (the first international environment meeting), and we don't have another 20 years to waste. Here we have got agreement without sufficient commitment (from governments)... We can't sustain our current lifestyle. We have got to get through to people the absolute need to change our economic system... The evidence is very powerful that the present course of economic behaviour will lead to tragedy, the economy will not survive. We have got to get this message through to people and they must hold their governments accountable. Because governments took decisions that add up to a significant change of course at Rio, it is a shift in direction. But we can't be complacent. We leave Rio without satisfying commitment for that concern. We've got the basis for change, but we must keep pushing like hell."

    Five years later, the Rio + 5 extraordinary session of the United Nations General Assembly, attended by 60 heads of state and 2,000 NGOs, was widely considered to have been a failure. The USA, Canada and Japan categorically refused to agree to a binding reduction in greenhouse gas emissions. The European countries, which proposed a mandatory reduction of 15% by the year 2000, accused the Americans of failing their responsibility as a superpower. European Commission President Jacques Santer said "I am frankly disappointed. The future of our planet is at stake." German Chancellor Helmut Kohl, visibly furious, promised tough negotiations at the next conference on climate change in Japan. The French President Jacques Chirac said "the debate with the Americans was very difficult" and accused them of being "the biggest polluters on the planet."

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Another example of disagreement is the Earth Summit promise of 0.7% of GNP for development aid, which is now less than 0.3%. In 1995, the US development aid contribution was only 0.1% of its GNP. Greenpeace representative Cliff Curtis said the failure of the Rio process "represents the abdication of responsibility by the world's governments... The governments are saying: we admit our failure to deal with the environment, but we are incapable of reaching agreement on the solution and have therefore decided to postpone any decisions for another five years."

3. Regarding Agenda 21 at the local level, we recommend The Local Agenda 21 Planning Guide: An Introduction to Sustainable Development Planning, International Council for Local Environmental Initiatives (ICLEI) and the International Development Research Centre (IDRC), Toronto, Canada, 1996, ISBN: 0-88936-801-5. This excellent book is available from ICLEI at www.iclei.org, tel: + 1 416 392 1462. Although 1800 cities, towns and villages have adopted Local Agenda 21 initiatives as of 1997, this is far less than was hoped for.

   An excellent children's version of Agenda 21 has also been published (in 18 languages) by Rescue Mission : Planet Earth, The White House, Buntingford, SG9 9AH, UK (tel: + 44 (0)176 327 4459, fax: + 44 (0)176 327 4460; web site: www.oneworld.org/peacechild. To facilitate the implementation of Agenda 21 at the local level, Rescue Mission also publishes a Sustainability Indicator pack for secondary level teachers and students to measure the indicators of progress towards sustainability within their own village, town or city.

4. Of the 200 largest economies in 1997, over half were corporations and less than half were nation states. The greening of corporations is now a fashionable trend, although one must beware of disinformation. Notable efforts include the US President's Council on Sustainable Development, the World Business Council on Sustainable Development, the Forum for the Future in the UK, the Prince of Wales's Business and the Environment Programme at the University of Cambridge Programme for Industry, and the Global Environment Programme at the Leonard N. Stern School of Business, New York University, and the work of SustainAbility Ltd., a strategic management consultancy and think tank based in London (website: www.sustainability.co.uk).

5. See Claude Julien, Régimes Globalitaires (Globalitarian Regimes) in Le Monde Diplomatique, No. 514, January 1997, where he makes the following observation: "More and more countries, which have massively sold off their public enterprises to the private sector and deregulated their market, have become the property of large trans-national corporations. The latter dominate whole regions of the economy in the South; they use local States to pressure international fora so as to obtain the political decisions most favourable to their pursuit of global domination. These phenomena of globalisation of the economy and of concentration of capital destroy social cohesion. They aggravate economic inequalities everywhere, which are increasing as fast as the supremacy of the market... Is it not time to demand the establishment, on a global scale, of a new social contract?"

   He then goes on to say:

   "By favouring, over the past two decades, monetarism, deregulation, free trade, the free flow of capital and massive privatisation, the political leaders have allowed the transfer of major decisions (regarding investment, employment, health, education, culture and environmental protection) from the public sector to the private sector. Because of this, over half of the two hundred largest economies in the world today are no longer countries but corporations."

   See also Julien, Claude. Le Libéralisme Contre La Societé, in Le Monde Diplomatique, No. 477, December 1993.

   The anti-North American Free Trade Agreement (NAFTA) graffiti by Mayan indigenous people during the New Year's Day 1994 Zapatista uprising in Mexico protested the

fact that their country is now legally obliged to import cheap grain from the USA. The low cost of the imported grain results from the unsustainable agribusiness methods used to grow it, which subsidise the production costs by depleting the topsoil and water needed for future growing seasons, whilst externalising the social and environmental costs of dealing with water pollution from insecticides, fungicides and fertiliser runoff, plus the cost of salination of lands from excessive irrigation, onto both US and Mexican taxpayers. This undercuts the more realistic market price of grain grown by traditional Mayan techniques, and destroys their economy overnight. That such trade is called "free" illustrates the wisdom of the Native American proverb "White man speaks with forked tongue."

6. The greatest migration in history of the human species is happening now: the migration of peasants in the developing countries, forced off their lands by the effects of globalisation to move to cities in search of homes and jobs that don't exist. For a devastating indictment of this, see The Trap, by James Goldsmith, reprint Edition, Carroll & Graf, 1995, ISBN: 078670263X. See also the George Soros article in Atlantic Monthly magazine, Boston, 1997.

7. According to the Human Development Report 1997, published by UNDP, "In 1994, the income ratio between the richest 20% of the world's population and the poorest 20% was 78 to 1, considerably more than in 1960 when the ratio was only 30 to 1." The net worth of the richest Mexican was 6.6 billion dollars in 1995, equal to the combined net worth of 17 million of his poorest fellow-citizens; "It is possible to eradicate extreme poverty between now and the beginning of the next century: this would require an investment of 80 billion dollars per annum, i.e. less than the combined net worth of the seven richest people on Earth."

8. See Robert D. Kaplan, The Coming Anarchy : How Scarcity, Crime, Overpopulation, Tribalism, And Disease Are Rapidly Destroying The Social Fabric Of Our Planet; in The Atlantic Monthly magazine, Boston, February 1994. After extensive travels in developing countries - especially Africa and Central Asia - Kaplan foresees the following scenario for the first decades of the twenty first century: "Nations break up under the tidal flow of refugees from environmental and social disaster. As borders crumble, another type of boundary is erected - a wall of disease. Wars are fought over scarce resources, especially water, and war itself becomes continuous with crime, as armed bands of stateless marauders clash with the private security forces of the élites."

    On the same subject, see War and Anti-War: Survival at the Dawn of the 21st. Century, by Alvin and Heidi Toffler, Little, Brown and Company, New York, 1993. These leading international futurists foresee "a new dark age of tribal hate, planetary desolation, and wars multiplied by wars."

    For a report on the situation in the former USSR, see Compost of Empire, by Bruce Sterling, in Wired magazine, April 1994. This excellent magazine about the online communications is also available on the Internet (call Wired Online Services on + 1 415 904 0660 for details.)

9. For an excellent critique of neoliberal ideology and globalisation, see When Corporations Rule the World, by David C. Korten, Berrett-Koehler / Kumarian Press, 1996, ISBN: 1887208011. Squarely addressing the controverial issue of modern corporate power, this excellent book explains how economic globalization has concentrated the power to govern in global corporations and financial markets, detaching them from the human interest. Korten presents a policy for restoring democracy and rooting power in people and communities. Nobel Peace Laureate Archbishop Desmond M. Tutu described Korten's book thus: "This is a 'must-read' book - a searing indictment of an unjust international economic order, not by a wild-eyed idealistic left-winger, but by a sober scion of the establishment with impeccable credentials. It left me devastated but also very hopeful. Something can be done to create a more just economic order." John Cavanagh, Fellow of The Institute for Policy Studies, and coauthor

of Global Dreams said: "If you can read only one book on how to understand and address the enormous challenges of our time, When Corporations Rule the World is it!"

10. Complete information on the Global Vision Project may be found on the web at www.global-vision.org

11. As Gregory Bateson (see note 32 below) points out "addiction is a way to make life confortable for one's symptoms.... Things like warfare, armaments, or atom bombs are addictive phenomena... Addiction is the training ofparts of your body to expect certain sorts of things." For a sobering historical account of the consequences of urban civilisation's addiction to natural resources, see A Green History of the World: the Environment and the Collapse of Great Civilisations, by Clive Ponting, New York, St. Martin's Press, 1991.

12. See Origins, by Richard Leakey, (check details).

13. Re. successful adaptation of early humans, see for example (check details).

14. See The Gaia Atlas of First Peoples: a Future for the Indigenous World, by Julian Burger, London; Gaia Books, Ltd., 1990. See also Endangered Peoples, a Future for the Indigenous World, by Art Davidson (check titles). Foreword by Rigoberta Menchœ, with photographs by Art Wolfe and John Isaac, San Francisco; Sierra Club Books, 1994. See also Voices of Forgotten Worlds: Traditional Music of Indigenous People (a book and two compact discs), compiled and edited by Larry Blumenfeld, forewords by Julian Burger & David Lewiston. Roslyn, New York; Ellipis Arts, 1993.

15. While territorial expansion was a stop-gap solution to urban civilisation's need for more resources, the effect on the inhabitants of the conquered territories was (and continues to be) devastating. For a close-up historical account of the impact of "civilisation" on Indigenous People, see the Journal of Christopher Columbus edited by Bartolomé de las Casas, quoted in Kirkpatrick Sale's excellent book The Conquest of Paradise: Christopher Columbus and the Columbian Legacy, Alfred A. Knopf, New York, 1990. For a contemporary account of the same behaviour in the 20th century, see Year 501: The Conquest Continues, by Noam Chomsky, South End Press, Boston, 1993.

16. Re. Clive Ponting's book, see note 11 above.

17. Quoted with permission from William E. Rees, Revising Carrying Capacity: Area-Based Indicators of Sustainability, in Population and Environment: a Journal of Interdisciplinary Studies, Volume 17, Number 2, January 1996, © 1996 Human Sciences Press Inc.

18. The Gaia Atlas of Cities : New Directions for Sustainable Urban Living, by Herbert Girardet, foreword by Dr. Wally N'Dow, Gaia Books Limited, London, 1996, ISBN 1 85675 097 3.

19. Creating A Sustainable London, published by Sustainable London Trust, 7 Chamberlain St, London NW1 8XB. Tel + 44 (0)171 722 3959. For more on this initiative, see the Sustainable London Trust web site at www.greenchannel.com/slt/

20. See also The Netherlands and the World Ecology, Cas Besserlink, Netherlands Committee for IUCN, Amsterdam, 1994. (Tel + 31 20 626 1732.)

21. Twenty world cities with populations over 10 million are now participating in the Mega-Cities Project, a collaborative multi-sectoral endeavour to share solutions to their common eco-social problems. As of 1995, this network includes Accra, Bangkok, Bombay, Buenos Aires, Cairo, Calcutta, Delhi, Jakarta, Karachi, Lagos, London, Los Angeles, Manila, Mexico City, Moscow, New York, Paris, Rio de Janeiro, Sao Paolo, and Tokyo. Expected to grow to 23 Megacities by the year 2000. Contact: Jan-

ice Perlman, Executive Director, The Mega-Cities Project, Inc., 915 Broadway, Suite 1601, New York, NY 10010. Tel: + 1 212 979 7350, fax: + 1 212 979 7624, website: www.megacities.org.

22. The Power of Myth, by Joseph Campbell (with Bill Moyers), Doubleday, New York, 1988; there is also an excellent television series of the same name, available as a best-selling six-part boxed set of videotapes from Mystic Fire Video at PO Box 422, New York, NY 10012-0008, USA. You can order these tapes by credit card by sending an e-mail message to mysticfire@echonyc.com, by fax to + 1 212 941 1443, or by calling 800 292 9001 toll-free in the USA. You may also wish to browse their web site at www.mysticfire.com.

   See also Joseph Campbell, The Hero With A Thousand Faces, first published in 1949, and later by Bollingen University, Press, New York, 1968.

23. For a richly illustrated archaeological study of the Goddess tradition in Europe, see The Language of the Goddess, by Marija Gimbutas, with a foreword by Joseph Campbell, Harper and Row, San Francisco, 1989. For a psychological overview, see The Great Mother : An Analysis of the Archetype, by Erich Neumann, translated from the German by Ralph Manheim, Bollingen Series XLVII, Princeton University Press, Princeton, 1955. For a poetic and literary tour de force on the same subject, see The White Goddess : A Historical Grammar of Poetic Myth, by Robert Graves, Farrar, Straus and Giroux, New York, 1948.

   For a good anthropological study of the Celtic spiritual tradition, carried out in Ireland, Scotland, Wales, Cornwall and Brittany in 1908, see The Fairy Faith in Celtic Countries, by W.Y. Evans-Wentz, with a new introduction by Terrence McKenna; Library of the Mystic Arts, Citadel Press, published by Carol Publishing Group, 1990. (Originally published in Oxford, 1911.)

   For a transcultural overview of pre-urban mythologies, see "The first Storytellers", and the "Love and the Goddess" sections of Joseph Campbell's book The Power of Myth, Doubleday, New York, 1988.

24. For a fascinating psychological study of the projection of individual responsibility onto the authority figure of the King or Emperor, which seems to have occured in every culture whenever urban civilisation first appeared, see The Heart of History: Individuality in Evolution, by John Weir Perry, State University of New York Press, Albany, 1987.

25. From a speech given by H. H. the Dalai Lama, June 7 1992, United Nations Conference on Environment and Development (Earth Summit), Rio de Janeiro, Brazil.

26. For a devastating critique of how alienated people are easy prey for media manipulation (based on observations of Americans during the 1991 Gulf War), see Media Control, by Noam Chomsky, 1991. See also: Comments on the Society of the Spectacle, by Guy Debord, translated by Malcolm Imrie, Verso, New York and London, 1990.

27. For more on this, see Global Vision : Cognitive Process in Self-Organising Systems, by Michael O'Callaghan, published on the Global Vision web site at www.global-vision.org/gvmanual.html

28. See note 24 above re. John Weir Perry.

29. Regarding personal responsibility for future generations, see for example: Theodore Roszak, Person / Planet : the Creative Disintergration of Industrial Society, Doubleday, 1979, ISBN: 0385000820; Ecopsychology : Restoring the Earth, Healing the Mind, by Theodore Roszak (Editor), Mary E. Gomes, Allen D. Kanner (Editor), Sierra Club Books, 1995, ISBN: 0871564068; and Joanna R. Macy, Dharma and Development, in Dharma Gaia : A Harvest Of Essays In Buddhism and Ecology, Alan Hunt

Badiner ed., Parallax Press, Berkeley, 1990.

30. Re. all aspects of the Internet see Wired magazine, an excellent monthly review of the current communications revolution (also available on-line at www.wired.com).

31. For a good introduction to Systems Theory, see Stafford Beer, Platform for Change : A Message from Stafford Beer, (Stafford Beer Classic Library), John Wiley & Sons, 1995, ISBN: 0471948403. See also George T. Land, Grow or Die: The Unifying Principle of Transformation, Delacorte Press, 1974, ISBN: 0385283733. See also The Web of Life : A New Scientific Understanding of Living Systems, by Fritjof Capra, 1 Anchor Edition, Anchor Books, 1996, ISBN: 0385476752.

    For a good overview of Cybernetics, see Norbert Wiener, Cybernetics, MIT Press, Cambridge, Massachussets, 1961 and John Wiley and Sons, New York, 1961. See also Gregory Bateson, Steps to an Ecology of Mind, Ballantine Books / Random House, New York, 1972. See also Erich Jantsch, Design for Evolution : Self-Organization and Planning in the Life of Human Systems (The International Library of Systems Theory and Philosophy), George Braziller, 1975, ISBN: 0807607576.

32. Gregory Bateson (1904-80) was an English anthropologist and biological philosopher. Educated at Cambridge, he did early work on pattern and communication in New Guinea and Bali. He then carried out research in psychiatry, schizophrenia, and dolphins. He played a major role in the early formulation of Cybernetics, and helped introduce Systems Theory and Communications Theory into the work of social and natural scientists. His influence is most strongly felt in the fields of education, family therapy and ecology. He was married to the anthropologist Margaret Mead for many years, sat on the Board of Regents of the University of California, and was Scholar-in-Residence at Esalen Institute in Big Sur. He rose to international prominence through his book Steps to an Ecology of Mind, (Ballantine Books / Random House, New York, 1972), and is widely regarded as one of the giants of twentieth century thinking. See also his book Mind And Nature: a Necessary Unity, E. P. Dutton, New York, 1979.

33. For the most succinct definition of this, see Autopoiesis: a characterization of the living system, Francisco Varela, Humberto Maturana, and Uribe. Could also be from Principles of Biological Autonomy, North Holland, New York, 1979 (also published by Appleton & Lange, 1979, ISBN: 0135009502) - (to be checked).

    On the Earth as a self-organising system, see James E. Lovelock, Gaia : A New Look at Life on Earth, Reprint Edition, Oxford University Press, 1987, ISBN: 0192860305. See also his The Ages of Gaia : A Biography of Our Living Earth, (Commonwealth Fund Book Program), Updated Revised Edition, W. W. Norton & Co., 1995, ISBN: 0393312399. See also his Gaia : The Practical Science Of Planetary Medicine, Gaia Books, ISBN: 1 85675040X(HB).

34. Gregory Bateson, Steps to An Ecology of Mind, Ballantine Books / Random House, New York, 1972.

35. Carl Gustav Jung, re mistakes.

36. Lao Tsu, Tao Te Ching, 6th. century B.C.E.; translated from the Mandarin by Gia-Fu Feng and Jane English, Wildwood House Ltd., London, 1972.

37. Peter Schwartz and Jay Ogilvy, The Emergent Paradigm, Center for the Study of Social Policy, SRI International, Menlo Park, 1978. For an outstanding investigation of the effect of unconscious assumptions and beliefs on everyday personal and societal behaviour, see Changing Images of Man, Policy Research Report no. 4, Center for the Study of Social Policy, Stanford Research Institute, Menlo Park, 1974. This seminal interdisciplinary paper was commissioned by the Charles F. Kettering Foundation and co-authored by Joseph Campbell, Duane Elgin, Willis Harman, Arthur Hastings, O. W.

Markley, Floyd Matson, Brendan O'Regan, and Leslie Schneider. See also also Erich Jantsch, The Self-Organizing Universe: Scientific and Human Implications of the Emerging Paradigm of Evolution, Pergamon, New York, 1980 (re-issued by Pergamon Press 1980, ISBN: 0080243126).

For a brilliant synthesis of the emerging paradigm in science, see Fritjof Capra, The Tao of Physics, Wildhood House, London, 1973; in society, see Fritjof Capra, The Turning Point, Wildhood House, London, 1982; in economics, see Paul Hawken, The Next Economy. (New York: Random House, 1983) and The Ecology of Commerce (New York: HarperCollins, 1993); in economics and politics, see Hazel Henderson, Building a Win-Win World : Life Beyond Global Economic Warfare Berrett-Koehler Pub, 1996, ISBN: 1881052907. Alvin and Heidi Toffler, authors of The Third Wave said "At a time when conventional economics is tottering into senility, a handful of thinkers are forging imaginative alternatives. Hazel Henderson is among the most eloquent, original-and readable-of the econo-clasts."

38. For more on this, see When The Dream Becomes Real: the Inner Apocalypse in Mythology, Madness and the Future, by Michael O'Callaghan, published on the Global Vision website at www.global-vision.org/dream.

39. Regarding the therapeutic function of death/rebirth imagery at the individual level, see The Far Side of Madness, John Weir Perry, MD, Prentice Hall, Englewood Cliffs, 1974. See also: Perry, John Weir. The Self In Psychotic Process: Its Symbolization in Schizophrenia; with an introduction by C.G. Jung (Los Angeles: University of California Press, 1953). Also: Jung, Carl Gustav: †ber Wiedergeburt. (ZŸrich: Eranos Jarhbuch [1939], 1940). Regarding the function at the cultural level, see Perry, John Weir. The Heart of History: Individuality in Evolution. (Albany, NY, USA: State University of New York Press, 1987.) For more on the psychology of death and near-death experiences, see Stanilav Grof and Joan Halifax, The Human Encounter With Death, E.P. Dutton, New York, 1977.

40. See for example, Géopolitique du Chaos (The Geopolitics of Chaos), by Ignacio Ramonet, Galilée, coll. "Espace Critique", Paris, 1997. In the chapter entitled "The Rise of the Irrational", Ramonet (the Publisher of Le Monde Diplomatique) points out that:

"The current economic crisis, in its brutality, provokes here and there effects of panic and confusion. In the societies which are in principle dominated by reason, when the latter slides or becomes dislocated, citizens are tempted to find recourse in pre-rationalist forms of thought, and relapse into superstition... More and more citizens who feel threatened by a brutal and forced technological modernisation are subject to anti-modernist feelings of resentment. And one can observe that the current economic rationalism, which so despises human values, breeds a rising tide of social irrationality... Indeed, many citizens believe that the alliance of capital, industry and science have betrayed the ethics of the latter, and that the commercial conception of progress is in large part responsible for our most serious global ills. While the planet drifts towards world-wide ecological catastrophe, apathetic compromises and innocuous recommendations merely delay the inevitable and the moment of truth. For the citizens, with feelings of rage in their hearts, continue to witness the disappearance of the forests, the devastation of the meadows, the erosion of the land, the spreading of the deserts, the dwindling supplies of fresh water, the corruption of the oceans, the population explosion, and the spreading of pandemic diseases and of poverty. More and more people are convinced that science no longer has any solutions to offer either for the planet or for themselves, and that progress, when driven only by the interests of commerce, is 'the mother of all crises.'"

"During previous economic crises in the highly industrialised countries, one could see massive movements towards irrationality. In the great depression of the thirties, the Old Continent thus witnessed a moment when archaic myths resurfaced with a dynamic force that was essentially instinctive and emotional. The failure of modern-

ism, the economic crisis, social despair and the aspirations of identity then provoked a kind of disenchantment of the world and led, particularly in Germany, to a fascination with the irrational which the far right seized upon. 'Many German citizens', according the historian Peter Reichel, 'sought escape from a present which they could not understand, by plunging into the abyss of a trompe-l'oeil universe..."

In the Germany of the 20s, military defeat followed by hyperinflation and bankruptcy provoked a fascination with the occult, the supernatural, and make-believe... As early as 1930, Thomas Mann warned his fellow citizens... about the political dangers... Traumatised by the complexity of the crisis, impoverished and disoriented, German citizens gave up their will, their common sense, their faith in reason, and gradually succumbed to obscurantism and the cult of the leader... 'The stage was set', said Thomas Mann, 'for belief in Hitler.'

Nazism took root when Germany was in the throes of despair, it took advantage of the impact of the economic depression, of the convulsive mutation of capitalism, and of the national trauma. This is the explosive mix which now confronts Europe once again. Will the citizens be able to mobilise themselves to prevent a reoccurrence of the nefarious precedent?"

41. See Global Strategy : Promoting the Concept Of Sustainability as a Global Goal, NGO paper for the United Nations Commission on Sustainable Development, by Michael O'Callaghan, Global Vision, New York, 1994. This text examines contemporary fears about the future - reflected in various assumptions such as entropy, resource-scarcity, the threat of eco-social collapse, and the image of Apocalypse - which are implicit in the modern world-view and stand as the shadow of the Myth of Progress. These fears influence perception, shape public opinion and affect social, economic and political behaviour in ways which are not always conscious. The paper points out the UN / NGO community's capital failure to take this psycho-cultural reality into account and emphasizes the need to express a positive vision of the future in artistic ways that transcend cultural boundaries, fire up the collective imagination, and inspire the level of action that is so urgently needed. Published on the Global Vision web site at www.global-vision.org/un/strategy

42. Al Gore, Earth in the Balance: Ecology and the Human Spirit. Plume, Penguin, New York, 1993.

43. Mikhail Gorbachov, quoted in International Green Cross flyer, 1993.

44. James Robertson, The Sane Alternative. River Basin Press, 1980.

45. Lester R. Brown, Building A Sustainable Society, WW Norton, New York, 1981.

46. Erich Jantsch, The Self-Organizing Universe: Scientific and Human Implications of the Emerging Paradigm of Evolution, Pergamon, New York, 1980 (re-issued by Pergamon Press 1980, ISBN: 0080243126).

47. Seven Tomorrows, Paul Hawken, James Ogilvy, Peter Schwartz, (check).

48. Whole Earth Review re teenagers.

49. Joseph Campbell, quote check with sheldon.

50. William Irwin Thompson - check source: may be from The Time Falling Bodies Take To Light.

51. See note 31 above re. Systems Theory and Cybernetics.

52. The Local Agenda 21 Planning Guide : An Introduction to Sustainable Development Planning, International Council for Local Environmental Initiatives (ICLEI)

and the International Development Research Centre (IDRC), Toronto, Canada, 1996. ISBN: 0-88936-801-5. Available from ICLEI: Tel: + 1 416 392 1462, e-mail: 75361.3043@compuserve.com