

Brundtland and Beyond .. Towards a Global Process



**By
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‘Our Common Future’, report of the World Commission on Environment and Development (1987) bridges north and south, east and west, provides an environmental context for the human phenomenon and adds an extended time-base as a fourth dimension. It is, however, the argument of this study that we require not only the ability to analyse the world system but also the capacity to change it. A further dimension of analysis is required, namely that of psycho-dynamics. Only in so far as we can increase consciousness of the global process can we begin to enact the agenda for global change.

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Brundtland and Beyond....

Towards a Global Process

The report of the World Commission on Environment and Development was published in mid-summer under the title 'Our Common Future'*. It stands in a line with prestigious pedigree, starting with the Brandt Commission Report 'North/South: A Programme for Survival' (1980), with its sequel 'Common Crisis' (1983). The absence of global solidarity and political commitment to sustained international problem-solving had sharpened the Commission's perspectives, increased its urgency yet raised its despair in the face of the ease of analysis and the impossibility of action. Meanwhile the Olof Palme Commission had produced 'Common Security: A Programme for Disarmament' (1982). Each Commission marked out a significant step in the dimensional integration of global awareness. Brandt highlighted the inter-dependence of the hemispheres, Palme spanned the caesura between East and West, now the Brundtland Commission provides an environmental context for the human phenomenon and adds an extended time-base as a fourth dimension. Our common future can only evolve out of the splits and complexities of our common present, against the backdrop of our common history and within the context of our common environment. The dimensions of integration of the world brain are developing to encompass the socio-economic, politico-historical and ecological realities.

It is, however, the argument of this paper that we require not only the ability to analyse the world system but also the capacity to change it. Intellectual comprehension is one thing, modification is something different. Gro Brundtland opened her chairman's forward with the words 'A Global Agenda for Change'. If the agenda is to be enacted then a further dimension of analysis is required. We must now move on with a great sense of urgency to add one further dimension, namely that of the psycho-dynamics of the world system. Only in so far as we can raise to consciousness the global process will we begin to be able to enact the agenda for global change.

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DIMENSIONAL EXPANSION

The new dimensional perspectives introduced by the Brundtland Commission are clearly articulated within the first chapter. The placing of economic perspectives within their environmental context is noted:

"There has been a growing realisation in national governments and multilateral institutions that it is impossible to separate economic development issues from environment issues; many forms of development erode the environmental resources upon which they must be based, and environmental degradation can undermine economic development. Poverty is a major cause and effect of global environmental problems. It is therefore futile to attempt to deal with environmental problems without a broader perspective that encompasses the factors underlying world poverty and international inequality." [p. 3]

Here, in a strange way, the historical logic has been inverted. Initially there is the recognition that it is impossible to handle economic development issues without regard to the environmental context within which they are placed. Exponential economic development of an exponentially increasing species cannot be sustained in the long term within a limited environment. The impact of unlimited patterns of growth on the boundaries of a limited holding environment creates shock waves which threaten to destroy both. Toward the end of the paragraph, however, the priority has shifted from a strategy of sustainable economic development to the strategy of the solving of environmental problems and the sustainability of a life-supporting ecosystem. This becomes the primary agenda, in the enactment of which understanding of economic issues is an important parameter. Here perhaps we see the interplay between the personal agenda and pilgrimage of the chairperson interacting with the direction of flow of the series of World Commissions. The Commissions themselves have moved from the study of economics to that of ecology, while Gro Brundtland has moved from an environmental minister to include issues of state, politics and economics. Her primary commitment is to ecology and the addition of socio-political and economic analysis represents the inclusion of relevant tools for her primary task.

Global problem-solving requires the raising of the level of system analysis to include the causal parameters of system behaviour. The task of co-operative, inter-dependent global management requires a global perspective. Not only do we have to include within that view the totality of parameters making up the cross-section of the human phenomenon within that turning still point of its present, but the phenomenon itself needs to be seen whole within its context. So Gro Brundtland calls us to stand back and view the symptomaticity of the species from a great distance.

"From space, we see a small and fragile ball dominated not by human activity and edifice but by a pattern of clouds, oceans, greenery, and soils. Humanity's inability to fit its activities into that pattern is changing planetary systems fundamentally. Many such changes are accompanied by life-threatening hazards, from environmental degradation to nuclear destruction. These new realities, from which there is no escape, must be recognised - and managed." [p. 308]

This is a Copernican shift in socio-economic analysis. It is the shift from homo-centric, to geo-centric, to helio-centric, a recognition of our dependence upon our environment and the dependency of that environment on the radiant energy of the solar fusion reactor. No longer is the species an insignificant infinitesimality within a relatively infinite system. Today the dependency is not only one-way. Within the ecosystem has evolved and proliferated an agent whose presence and practice threatens to disrupt the very system which gave it birth and on which its survival depends. If the parasitic symbiosis is to be successfully sustained, then the mutual interactions must be monitored and managed.

Norms of development and management, which have evolved over millennia of insignificance, are no longer appropriate. The human value-system stands at a caesura, a point of discontinuity between past and future. We can no longer project our history onto the screen of tomorrow - to follow such a pathway is to tread the road of common destruction. Time past no longer provides a map for tomorrow's journey. So the Brundtland Commission introduces the dimension of future time:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." [p. 43]

"Many present efforts to guard and maintain human progress, to meet human needs, and to realize human ambitions are simply unsustainable - in both the rich and poor nations. They draw too heavily, too quickly, on already overdrawn environmental resource accounts to be affordable far into the future without bankrupting those accounts. They may show profits on the balance sheets of our generation, but our children will inherit the losses. We borrow environmental capital from future generations with no intention or prospect of repaying. They may damn us for our spendthrift ways, but they can never collect on our debt to them. We act as we do because we can get away with it: future generations do not vote; they have no political or financial power; they cannot challenge our decisions." [p. 8]

Concern for the survival and quality of life of succeeding generations replaces the value-system of the maximisation of profit of contemporary organisations. Today's democracy must take account of its inter-generational responsibility. It must listen to the voice of the voiceless, take heed of the concerns of the as yet unconceived and legislate today for the lives of tomorrow. In so doing the power struggles which currently determine corporate decision making are seen to be destructively dysfunctional. The political process itself requires a transformation to take into account the presence of the absent, the needs of the impotent, the costs of the context and the judgement of history. The democratic institutions are no longer accountable to the contemporary majority alone.

THE VICIOUS SPIRAL

Exponential spread of exponentially growing industrialisation within an exponentially increasing species is now clearly perceived to threaten global catastrophe. As the Hon. Victoria Chitepo commented:

"The remarkable achievements of the celebrated Industrial Revolution are now beginning seriously to be questioned principally because the environment was not considered at the time. It was felt that the sky was so vast and clear nothing could ever change its colour, our rivers so big and their water so plentiful that no amount of human activity could ever change their quality, and there were trees and natural forests so plentiful that we will never finish them. After all, they grow again. ... Today we should know better." [p. 34]

It is as if the species has been acting like some mega-foetus, assuming that it can stay forever in the womb of Mother Earth, sustaining forever its pattern of unlimited growth in an environment which provides unending nurture with infinite resources and whose capacity for pollution absorption knows no end. The foetal assumptions of homo sapiens assume no species-responsibility for the environment whatsoever. Today we have eaten of the tree of knowledge, we have lost our innocence, we have been faced with the devastating consequences of living out the myths of foetal consciousness. The mega-foetus faces imminent placental failure but reacts to the realities of the global environment much in the same way that it reacted to those dimly remembered, but deeply imprinted, experiences of the terminal phase of intrauterine existence. There is denial, and the repression of environmental signals, regression, psychic reversal, burrowing back into the known world of yesterday, seeking within some time-fixation the perpetuation of a womb-life detached from reality. Then there is the rising sense of angst, of paranoia, of resourcelessness, of impending cataclysm, of titanic struggle, of the battle between good and evil and of impending fall. Tragically today, there is nowhere into which we can be born. We will have to make do with what Lebensraum we have. We have to learn to live within the limits of a sustaining and sustainable environment. For the species to out-grow the womb of Mother Earth is to threaten the destruction of one or both. The myths of Eden and the religions of salvation no longer serve to provide the value system for tomorrow's world.

Species and ecology are now clearly seen to be inter-dependent, their interactions inexorably linked by a complex system of time-delayed feedback loops and inter-dependent chains of cause and effect.

A non-industrial, agricultural economy is constrained to live within the confines of its immediate and contemporary ecosystem. If the cash flow of this current account runs into debt then, in the absence of stored food from the harvest of yesteryear or the availability of further resources from wider forage (or pillage!), there is an ineluctable readjustment of the population through infighting, plague or famine, until the new level can be sustained by the available resource flow. That finely tuned equilibrium was destabilised by a series of innovations. The first option was migration, provided the migrants could find somewhere to go with resources adequate to meet their needs, or an indigenous population whose levels of technology and armament were inferior and could so be annihilated, expropriated, or at least subjugated and exploited. Transport and trade provided a somewhat more sophisticated

alternative to migration. Struggle however was never for equity within the transaction, but always for advantage at the expense of the other. The terms of trade shifted significantly in favour of the more powerful. Down the trade routes flowed representatives of the trading powers, embedding resource-mining communities within indigenous ecologies, laying the foundations for world trade and colonial expansion. The so-called 'surplus wealth' creamed off by the trading powers in this process fuelled and fired not only population explosion but also the capital investment required for the Industrial Revolution itself. Systemic equilibrium was destabilised into a hyper-exponential developmental phase. The disequilibrium could only be sustained by continuous asset-stripping. Fuel and resource use moved from dependency upon the annual increment representing solar energy trapped by the vegetable life-forms. Deforestation, the use of the capital asset instead of the cash-flow of the current account, raced out of control. With increasingly sophisticated technology core nations turned to mined fossil fuel, first solid (coal) and later liquid (oil) and finally nuclear power.

Increased energy availability released the capacity to transform increasing volumes of raw materials into consumer commodities for an exponentially increasing population base, the basic materials themselves being increasingly expropriated from less technologically sophisticated, militarily less able or economically less potent areas of the world. It is essentially a system which operates in debt on its current account. The current account deficit is written off year by year by cashing in assets from the past, by the expropriation of capital assets in the present and their conversion into current account cash flow, by generating a net imbalance in an inequitable trading system (in other words 'stealing' from less developed countries) or by mortgaging future assets which inevitably lowers the current account income of succeeding generations.

Any system which depends for its survival upon generating exponentially increasing levels of current account deficit is doomed in the long-term, since it requires for its continuance an infinite resource base upon which to draw. In theory such infinitude has never existed. In practice conditions approximated to an infinite resource base when the debt-generating species-phenomenon was relatively insignificant within its finite ecosystem. The conditions of relative insignificance and the concomitant existential perceptions of the possibilities of unrestrained exponential growth within an apparently infinite environment are no longer appropriate.

The maintenance of the hyper-exponential resource-usage within certain sub-sectors of the species, now represents a major threat to species survival within the finite environment. Initially when parameters of limitation were perceived only in terms of trade, other species sectors were perceived as 'the environment'. The requirements of aid, development loans, etc. to the poorer countries hid the underlying dynamic, namely the fundamental movement of capital asset from poor to rich, from underdeveloped to overdeveloped.

Capital accumulation by the trading nations has been enhanced, and in some situations surpassed, by the capital-accumulation of the trans-national corporations, representing independent centres of empire exploiting a global environment, asset-stripping from indigenous economies wherever they can gain a foothold. The next generation of capital aggregation institutions is now beginning to proliferate. We are moving beyond the trans-national corporations involved in trading and raw materials, manufacturing and mining, to the trans-national financial corporations, the global capital management institutions, which make money by the manipulation of money, accumulating wealth from the wealth accumulators

through the network of satellite-enabled 24-hour trading finance markets. The implications of this meta-shift in wealth accumulation are becoming clearer, the effects in the escalation of breakdown of the hyper-exponential expansionist mode of system behaviour are already being felt.

The patterns of hyper-exponential wealth accumulation in centres of power is rapidly replacing the exponential increase of population and hyper-exponential increase of resource use as the dominant motif of system behaviour. The phenomenon throws into sharp relief the underlying parameters of species-behaviour, now seen in global rather than sub-system terms. Current account deficits of species behaviour can no longer be met by asset-stripping from the past, the present or the future. It is the contemporary environment which is now bearing the brunt of the species onslaught. Sandwiched between the driving forces and the containing wall are those unfortunate species-sectors which have been perceived to be standing in for the environment during the earlier phase of expansion. The sustained hyper-exponential aggregation of wealth in power centres ineluctably threatens no longer simply the quality of living, but now the capacity for living, the very survival itself of large sectors of the global population. It leads to a policy of the application of great-grand-apartheid - the selective abandonment of large sectors of world population within selected homelands of the lowest possible raw material worth. Such zones effectively become low-concentration-camps within which those global sectors whose wealth has been completely stripped, and which are therefore no further use to the core system, are abandoned and left to die. In their dying, their migration, and their struggle for survival, the environment, that fragile, ecological system upon which we all depend, is also caught up in co-casualty.

The concept of global debt provides a higher system level understanding of international debt. In so far as the species is operating in a current account deficit, or trading imbalance, with its ecosystem, just so far is the species itself generating a cumulative debt to its environment. In that context it is easy to see that those who accumulate wealth are the ones in debt, that the subsystem from which the wealth is expropriated is the lending partner. In a Machiavellian twist of irony, understanding of debt within an international system has stood this process on its head. Here, although the net capital asset has been stripped from the developing nations or the underdeveloped nations and accumulated by the so-called developed nations, the debt is perceived as being in the hands and accounts of the poor, the under- and un-developed. In fact the dynamics of world debt are antithetical to this. It is the rich who are the debtors, it is the poor to whom interest and capital should be being repaid. However such is the inequity of the international market place, that the debt is not only reversed but compounded in such a way that those who have nothing are given more debt, so that those who have accumulated a lot of capital can in fact accumulate even more, by using the pumped in resource, like pressurised water in a salt mine to leech out the remaining resources which cannot be expropriated in any other way. Since the ultimate source of the capital so accumulated is in fact the global environment it is little wonder that it is precisely the global environment which is now placed at risk by the continuance of the hyper-exponential capital accumulation process of the world system.

Impingement on the environment was first observed as a spin-off from uncontrolled industrialisation within the developed nations. However as Brundtland notes, poverty itself is as much a source of environmental degradation as wealth-generating over industrialisation.

"Environmental degradation, first seen as mainly a problem of the rich nations and a side effect of industrial wealth, has become a survival issue for developing nations. It is part of the downward spiral of linked ecological and economic decline in which many of the poorest nations are trapped." [p. xi]

"Environmental stress has often been seen as the result of the growing demand on scarce resources and the pollution generated by the rising living standards of the relatively affluent. But poverty itself pollutes the environment, creating environmental stress in a different way. Those who are poor and hungry will often destroy their immediate environment in order to survive: They will cut down forests; their livestock will overgraze grasslands; they will overuse marginal land; and in growing numbers they will crowd into congested cities. The cumulative effect of these changes is so far-reaching as to make poverty itself a major global scourge."

There is a quantum shift in the problem of environmental degradation. To be sure irresponsible industrial expansion generates massive environmental pollution, though even that pollution pales into insignificance when compared to the ecological destruction of international conflict, itself a by-product of industrial technology. However as the limits to growth have been encountered and the periphery of the global system has been driven to the wall of the containing environment it is the survival activity of the periphery, as displaced environmental degradation of the core, which is posing the gravest and most rapidly growing threat to the frail global ecology. When a culture or an economy is under threat to its survival, long-term asset management is an immediate casualty. Existence is hand-to-mouth. Survival is a question of every person for themselves and the devil take the hindmost, let alone the future generations. So it is that in those marginalised areas of the world population where the basic resources of food, fuel and shelter, water, sanitation and pollution absorption are no longer adequate to sustain the survival of the present population, the swarm attacks its environment and destroys it, collapsing into dependence on external aid, migrating outwards in desperate search for succour, or imploding in famine, plague and death. Whatever the saga, the environment is reduced to a wasteland.

In such situations the city is perceived as a centre of sanctuary, a potential source of resource to the marginalised rural poor. Compulsive patterns of urban expansion place escalating demands upon limited resources and lead to the breakdown of sanitation and primary health care in the mushrooming shanty towns around the city centres of the third world. Intense social conflict erupts around the boundaries of social control as affluent protectionism faces the insatiable demands of survival-driven poverty. Increasing resources of the city-centres are diverted into processes of law and order and the management of social unrest. Conditions in the city, however, do nothing to change the fantasy-perceptions of the rural poor, drawn in an increasing flood like moths to a flame at dusk.

"... authorities have not been given the political power, decision-making capacity, and access to revenues needed to carry out their functions. This leads to frustration, to continuing criticism of local government for insufficient and inefficient services, and to a downward spiral of weakness feeding on weakness." [p. 248]

If city centres offer one potential source of resource, then migration to the affluent, developed, industrialised western nations is also perceived as offering salvation. Intense influx control and international boundary management proliferate, as the haves defend their affluence from being overwhelmed by this in-rushing tide from the sea of world poverty. As those boundaries hold, so the waves are reflected back outwards again from core to periphery, from centres of affluence to boundaries of deprivation. The environment has no legislation, no barbed wire, no immigration control, no forces of law and order, no police dogs, whips, or armoured vehicles. It is open and vulnerable to the rape and pillage of the human swarm.

It is all too easy to see environmental degradation under conditions of survival as a symptom of poverty rather than the poverty itself as a symptom of the bifurcation in the accumulation of capital within the world system. This splitting and denial of causal links within the system chain displaces responsibility and disowns the damage.

The world we inhabit is one world. If the ecosystem breaks down at one point it is one point of the world environment that has broken. It is essential to integrate the local as an element of the global. Every element of the world system must now be acting with global responsibility for the global environment at every point. We can no longer wash our hands of responsibility, leaving someone else to die from the pollution of our dirty water. The global ecosystem is like a soap bubble shimmering in space, its biosphere stretched almost to breaking point. Here and there, first as isolated pinpricks, develop those tell-tale little black spots which slowly enlarge, gyrate, coalesce and spread across the surface, before the global bubble bursts. When that happens it is not simply the south seas which will be caught in that enmeshed and inter-linked disaster of ecology and economy - the effects can no longer be limited to one small area - our world is one world.

It is not simply physical survival of marginalised people which leads to this kind of impingement upon a fragile environmental ecosystem. In an even more powerful way it is the survival drive of a national economy which can do even greater harm. A nation which has been subject to sustained asset-stripping over generations finds itself deeply in debt to the capital accumulator core. Interest rates rise - the debt accumulates. Cash cropping to pay off the international financial obligation becomes a more and more dominant activity. The world markets become flooded with the cash crop product and prices plummet. The rate of debt accumulation accelerates, environmental destruction escalates in an attempt to expand the cash-cropping, to cash in the capital resources of environmental asset, to pull in and sell anything into the world commodity market which can enable the national economy to survive a little longer. Every intervention is system-destructive, leading dysfunctionally into the long term towards the degradation of the national environment and its internal economy. Inevitably its most marginalised sectors are themselves pushed into physical survival activity, further degrading the environment and another black spot gyrates on the surface of the global bubble. In the process the regenerative capacity of a large tract of the national ecology has been destroyed. Top-soil erosion, desertification, flooding, natural disaster, famine and imploding dependency follow inexorably. Weather patterns shift, oxygen producing plant-life is destroyed. The carbon dioxide content of the global atmosphere increases, the global bubble has moved a little nearer to bursting point.

Brundtland notes the process, but sustains the disintegration of global environment.

"Many parts of the world are caught in a vicious downward spiral: Poor people are forced to overuse environmental resources to survive from day to day, and their impoverishment of their environment further impoverishes them, making their survival ever more difficult and uncertain. The prosperity attained in some parts of the world is often precarious, as it has been secured through farming, forestry, and industrial practices that bring profit and progress only over the short term. [p. 27]

"The heaviest burden in international economic adjustment has been carried by the world's poorest people. The consequence has been a considerable increase in human distress and the overexploitation of land and natural resources to ensure survival in the short term." [p.36]

The ever-growing demands of capital accumulation and capital transfer from poor to rich generates patterns of environmental breakdown, but it is the environment of the rich, displaced into the context of the poor, that is placed under stress. It is ecological violence at a distance, but nonetheless causally linked to the capital accumulation characteristics of the affluent global core. Exportation of acid rain across a national boundary can clearly be seen as an environmental concomitant of industrial expansion in one place being displaced into the environment somewhere else. Economic displacement is much easier to disown. Brundtland notes the effects but fails to penetrate the dynamic.

"Societies have faced such pressures in the past and, as many desolate ruins remind us, sometimes succumbed to them. But generally these pressures were local. Today the scale of our interventions in nature is increasing and the physical effects of our decisions spill across national frontiers. The growth in economic interaction between nations amplifies the wider consequences of national decisions. Economics and ecology bind us in ever-tightening networks. Today, many regions face risks of irreversible damage to the human environment that threaten the basis for human progress." [p. 27]

So the feedback loops linking population growth, industrialisation, economy and ecology are recognised as constituting one interlocked global system, the underlying dynamics of which are generating a self-destructive vortex. Brundtland repeatedly uses the symbol of a vicious downward spiral, with all the imagery of the whirlpool, draining life out of the surface into some subterranean Hades. It is a symbol of the common unconscious, linked to that deeply denied but universally encountered experience of birth. It is hardly surprising that other primally loaded words like 'pressure', 'stress', 'growing demand on scarce resources', 'pollution', 'ever-tightening networks' emerge within the text. The situation in which we find ourselves as a species resonates so deeply with that dimly remembered, yet so decisively imprinted experience of full-term foetal consciousness. It is from the analysis of these little emotional load-carriers, these straws in the wind, that we begin to pick up indications of the unconscious symbolism, the ice-berg tips of the common unconscious process by which our species responds to its contemporary crisis. In the face of any new problem, we all and always fall back upon previous experience for some kind of model by which to resolve the presenting situation. Perhaps the most pregnant ground of symbolism, the deepest and most meaningful layer of experience triggered by the present situation is precisely that of the distress of the full-term foetus. It faces placental failure, breakdown in the supply of resources, inability to sustain the exponential pattern of growth, hypoxia, the struggle to sustain life with rising concentrations of carbon dioxide flooding the system, pollution

retention - the inability of the environment to absorb waste product. Then with increasing pressure in waves of interlocking networks of muscles, comes the breaking of the waters, the downward spiral, the funnel, the pain and the titanic struggle as the under-nourished, polluted, and oxygen-starved organism fights for survival in the birth canal, in crushing waves of cranial pain from a head grown too large with the rapid evolution of a third brain to pass easily through a channel rendered narrow and tight from the pelvic musculature of the upright posture. It would appear that the trauma of birth is providing the unconscious ground of species reaction during the process of transition to a pattern of sustainable development.

In so far as the species re-enacts the trauma of birth in irrational response to the drama of development, it runs a major risk of the most massively dysfunctional behaviour. It is for this reason that **understanding of global process is essential for the management of change in global systems**. The dimension of psychodynamic depth must be added to the systemic variables currently employed in the analysis of global dynamic. In the absence of such analysis international policy makers are inevitably locked in conditions of impotence, helplessly watching the global system degrade. Their fantasies of hope slowly fade into the realities of despair:

"Despite official hope expressed on all sides, no trends identifiable today, no programmes or policies, offer any real hope of narrowing the growing gap between rich and poor nations." [p. xi]

FRAGMENTATION

Any large group subject to resource deprivation, survival stress and rapid transition tends to behave in ways which are now well-documented and closely predictable. The global international community is no exception. There is, for example, the degrade in the ability to see the system as a whole, and the fragmenting into competitive struggle groups, each vying with all other such groups for the largest possible share of the resource base. There may, in fact, be enough resources to go round but if the perception is that there are not, then resource-hoarding and a culture of mutual expropriation, in which the most powerful gain the most resource at the expense of the most powerless, becomes the order of the day. The result is that while total system resources are gathered and hoarded by a powerful few the system as a whole moves into increasing disparity, with unequal distribution, which eventually generates a catastrophic crisis of system collapse, beginning at the edges of powerlessness and moving steadily in towards the centre.

"The Earth is one but the world is not. We all depend on one biosphere for sustaining our lives. Yet each community, each country, strives for survival and prosperity with little regard for its impact on others. Some consume the Earth's resources at a rate that would leave little for future generations. Others, many more in number, consume far too little and live with the prospect of hunger, squalor, disease, and early death." [p. 27]

The dynamics of survival culture permeate every sector and every level of the system. They energise the political and institutional behaviours, trading, conflict-management and

environmental transactions. They also intensify alienation and scapegoating of sub-cultures on sexual, racial, ethnic, religious and other ideological parameters.

The report notes the fragmented nature of agencies seeking to work in the field of international co-operation. Similarly at intra-national level different agencies, handling different sectors of the socio-political, economic and ecological concerns of society also work in a disintegrated mode.

"Yet most of the institutions facing those challenges tend to be independent, fragmented, working to relatively narrow mandates with closed decision processes. Those responsible for managing natural resources and protecting the environment are institutionally separated from those responsible for managing the economy. The real world of interlocked economic and ecological systems will not change; the policies and institutions concerned must." [p. 9]

It is becoming clearer that the fixed parameters of the real world demand change at a fundamental level in the institutional processes of the social construct. Tragically, the kind of changes which emerge at an institutional level under the conditions of the situation we now face within the global village intensify the struggle, deepen the fragmentation, increase the competition, escalate the conflict and withdraw commitment and resources from common problem-solving. So Brundtland notes:

"Many international economic problems remain unresolved: Developing country indebtedness remains serious; commodity and energy markets are highly unstable; financial flows to developing countries are seriously deficient; protectionism and trade wars are a serious threat. Yet at a time when multilateral institutions, and rules, are more than ever necessary, they have been devalued. And the notion of an international responsibility for development has virtually disappeared. The trend is towards a decline in multilateralism and an assertion of national dominance." [p. 36f.]

The decline in internationalism and the increase in competitive unilateralism is not simply a matter of attitude. The dysfunctional dynamics are also showing themselves practically in terms of the redeployment of political power and commitment and the withdrawing and redistribution of funds previously placed at the disposal of multi-lateral organisations.

"However, just at the time when nations need increased international co-operation, the will to co-operate has sharply declined. By the mid-1980s, multilateral institutions were under siege for many, and often contradictory, reasons. The UN system has come under increasing attack for either proposing to do too much or, more frequently, for apparently doing too little. Conflicting national interests have blocked significant institutional reforms and have increased the need for fundamental change. By the mid-1980s, funds for many international organizations had levelled off or declined in both relative and absolute terms." [p. 313]

The result is that as the need for global level decision-making and application becomes more pressing, so the ability to work at that level and to actualise significant change in terms of intra-and inter-national policies begins to degrade. There is an unconscious,

negative feed-back loop within the dynamic linking awareness of the problems being faced with the commitment and ability to deal with them realistically. The analysis, intervention and reversal of this dynamic process trend is now the most pressing agenda of the world community.

As the following two quotations serve to show, secondary reinforcing feedback loops are also in place, which link dynamic response to the confronting problems to escalation of the dysfunctional dynamic itself.

"Environmental stress is both a cause and an effect of political tension and military conflict. Nations have often fought to assert or resist control over raw materials, energy supplies, land, river basins, sea passages, and other key environmental resources. Such conflicts are likely to increase as these resources become scarcer and competition for them increases." [p. 290]

"Arms competition and armed conflict create major obstacles to sustainable development. They make huge claims on scarce material resources. They pre-empt human resources and wealth that could be used to combat the collapse of environmental support systems, the poverty, and the underdevelopment that in combination contribute so much to contemporary political insecurity. They may stimulate an ethos that is antagonistic towards co-operation among nations whose ecological and economic interdependence requires them to overcome national or ideological antipathies." [p. 294]

The report notes very succinctly that environmental stress is both cause and effect of political tension and military conflict. Any increase in military conflict decreases the environmental resource base which increases the likelihood of military conflict. It is this inter-linked feedback system which means that a small degrade in environmental resourcefulness can trigger a massive environmental destruction through the dysfunctional, socio-political reaction to the initial trigger. These deeply ingrained and archaic species-response patterns to resource shortage are no longer appropriate for problem-solving in today's world. They are not only inappropriate, they are highly dysfunctional in that the preferred solution actually exacerbates the presenting problem, leading to an increased intensity of the preferred solution, which in turn makes the situation massively worse. These archaic survival drives threaten the balanced ecological system of today's world with a catastrophic breakdown, however appropriate they may have been during past millennia.

The changes required to sustain problem-solving in today's world are not at the comparatively superficial socio-political and economic levels but go right through to the value structures and the fundamental core dynamics of human behaviour itself. Failure to grapple not only with the dynamics but also with the processes of change required to modify these dynamics is totally irresponsible, particularly when new skills for such analysis and intervention are rapidly becoming available.

ARMS AND HUMANITY

One of the most dysfunctional responses of the human species is that of armed combat and fight in response to, and in an attempt to resolve, anxieties generated by environmental stress

and resource-deprivation. That archaic and inappropriate response is now supported by such sophisticated technology and mounted on such a massive scale internationally as to constitute one of the most intensely species-threatening symptoms of the present process.

Threat to survival raises anxiety. Response to anxiety results in the preparation to fight. Today that response itself threatens our survival, so raising anxiety and fuelling the motivation and commitment to military action. The historically functional linear response has been transformed by the effects of sophisticated armaments technology into a dysfunctional feedback loop.

"Globally, military expenditures total about \$1 trillion a year and continue to grow. In many countries, military spending consumes such a high proportion of gross national product that it itself does great damage to these societies' development efforts. Governments tend to base their approaches to 'security' on traditional definitions. This is most obvious in the attempts to achieve security through the development of potentially planet-destroying nuclear weapons systems. Studies suggest that the cold and dark nuclear winter following even a limited nuclear war could destroy plant and animal ecosystems and leave any human survivors occupying a devastated planet very different from the one they inherited." [p.7]

In individual behaviour any such diversion of major personal resources into the process of anxiety-defences would be seen as pathological and would lead to a condition of neurotic, or even psychotic, breakdown. It is strange that the pathology of social systems should go unremarked. The goal is survival and security but the means adopted to achieve that end threaten survival and increase insecurity. Until that negative feedback loop is recognised and reversed the growing social angst is mobilised by the body politic as a mandate to divert ever-more resources into the bottomless pit of the international arms race.

The dysfunctional feedback loop has two fundamental dangers inherent in it. The first is somewhat similar to the effects of capital accumulation in centres of wealth. Here the capital accumulation is diverted into programmes of research and development, high technology armaments, the stock-piling of nuclear arsenals and the proliferation of delivery systems, together with the complexification of the technology of detection and protection. So far as world development is concerned, the procedure amounts to withdrawing vast quantities of global capital and locking it up in impenetrable vaults of the world's armament bank.

"The arms race - in all parts of the world - pre-empt resources that might be used more productively to diminish the security threats created by environmental conflict and the resentments that are fuelled by widespread poverty." [p. 7]

Even without any active conflict the escalation of anxiety defences within the global dynamic exacerbates the splitting and polarisation, not only between the armed nations but also between the haves and the have-nots. It exacerbates world poverty, immobilises resources required to sustain global development and accelerates the degrade of the global environment. Fall-out from the arsenals of the world is already destroying the delicate ecosystem of Island Earth.

In the event of social anxieties getting out of hand, leading to the collapse of political processes and the outbreak of nuclear war, an even greater danger to the environment emerges. Historically conflict has been seen as a win/lose struggle between two parties, with negligible environmental consequences. Potential effects of today's technology have introduced two massive shifts in the process. In the first place the war game has moved from a win/lose to a lose/lose scenario. There is no meaningful victory for any party in the exchange of thermonuclear destruction. The socio-political and economic problems generated by the conflict are far in excess of those which any such conflict is designed to solve.

Secondly, and for the first time in human history, the technology of human conflict poses a massive threat to the ecological system upon which the species depends for its survival. Such conflict therefore constitutes for the first time an essay in species suicide. As Brundtland notes:

"Among the dangers facing the environment, the possibility of nuclear war, or military conflict of a lesser scale involving weapons of mass destruction, is undoubtedly the gravest. Certain aspects of the issues of peace and security bear directly upon the concept of sustainable development. Indeed, they are central to it." [p. 290]

Technology in the service of human pathology is now the greatest threat of all - whether that pathology shows itself in the irrational and paranoid drives of resource hoarding and aggregation, or the idealisation and splitting between in-group and out-group, good and bad, fuelled by ideological projection and driven by the uncontrolled feedback loop of escalating armament. The analysis and the resolution of human pathology itself constitutes the only realistic and sustainable form of defence, for humanity is now its own worst enemy.

Current advances in the analysis of human behaviour indicate that the patterns of defensiveness and aggression under stress are not instinctive, as had previously been assumed. They are learned responses imprinted very early in the development of each individual and reinforced by the cultural and historic settings within which we grow up. As such the behaviour patterns are open to interpretation and change. They are clearly not necessary adjuncts of human interaction. It would now appear that **the establishment of a sustainable mode of human existence within a sustainable and stable ecosystem depends upon the resolution of human pathology, the disarming of homo sapiens, the reduction of phantasy projection and neurotic reactions under stress, so increasing the resources available for reality-orientation, human integration and the development and application of the full range of human potential at every level of the global system. It is imperative to add the understanding of process to the dimensions within which we comprehend the behaviour of human systems.**

DIRECTIONS OF DEVELOPMENT

Four elements are essential for significant problem-solving in complex systems. These are: data gathering and system description; diagnostic analysis; prescription; and application. The

World Commission on Environment and Development is a report-producing advisory body. By its very nature it has no political or economic power and the responsibility for application therefore is vested elsewhere. The great strength of the Brundtland Report lies in the high dimensional level of its system description, integrating the great divides between North and South, East and West, human species and environmental ecosystem, past, present and future. **The weakness of the report lies in the absence of the psychodynamic dimensions from the field of diagnostic analysis. As a result the prescribed directions of future development set out guidelines or principles for necessary changes in system behaviour but are unable to grapple with the dynamic intervention strategies necessary to bring about the prescribed changes. The report is quite clear about where it would like to see the world system heading. It is, however, quite unclear as to how the system can change in the given direction. Effective change processes depend upon accurate dynamic analysis. That task is as yet untackled. The resulting report inevitably remains without teeth.**

The little word 'must' accompanies every statement of a new direction of development, as if simply transforming the direction into a directive is enough. Encouragement, motivation, authority are inadequate to generate significant change in the kind of complex systems which generate global social and environmental phenomena. Once we have arrived at a common commitment to movement in a given direction we still face the fundamental question, 'How can it be done?' The question becomes even more sharply focussed when we realise that system dynamics and trends are moving in the opposite direction to that whose necessity is indicated by the report itself.

a) Disarmament

One of the most sharply focussed directions of development emerges from the study of international armament and the effects of its development, deployment and use.

"Among the dangers facing the environment, the possibility of nuclear war is undoubtedly the gravest.... But the greatest need is to achieve improved relations among those major powers capable of deploying weapons of mass destruction." [p. 19]

Nuclear war would lead to environmental degrade on a totally different scale from that being generated through industrialisation, poverty and population explosion. The necessity for sustaining a viable ecosystem prohibits recourse to nuclear exchange as a means of discharging international conflict. Lowering tension, increasing trust and the establishment of co-operative international teamwork across the boundaries of the superpowers provide an indication of the direction for tomorrow's world. What is lacking is the effective means to achieve the end. **Analysis of particularly conflicted boundaries may extend to socio-economic, political and historical description, but without the elements of psychodynamic analysis, there is little hope of any effective implementation of the Brundtland imperative. We require a much deeper understanding of the pathology of irrational conflict which emerges at the boundaries of macro-systems and of the processes which generate such phenomena.**

The situation is made even more difficult by two further trends. The first is the escalation of socio-economic and environmental stress, as previously unlimited patterns of exponential growth impinge upon the constraints of a limited holding environment. Rising stress and decreasing resources accelerate the process of conflicted polarisation across all group boundaries. The second trend is the proliferation of parties capable of unleashing a nuclear arsenal in reaction to the rising levels of international stress. However in the absence of practical strategies for dealing with the problem and initiating the necessary changes, Brundtland resorts to the imperatives of 'ought', 'should' and 'must'.

"The potential for the spread of nuclear weapons is one of the most serious threats to world peace. It is in the interest of all nations to prevent proliferation of nuclear weapons. All nations therefore should contribute to the development of a viable non-proliferation regime. The nuclear-weapon states must deliver on their promise to reduce the number and ultimately eliminate nuclear weapons in their arsenals and the role those weapons play in their strategies. And the non-nuclear-weapon states must co-operate in providing credible assurances that they are not moving towards a nuclear weapon capability." [p. 182]

Reinforced imperatives without practical means of goal achievement simply increase the levels of frustration and impotence.

The Commission accurately notes that the absence of armed conflict does not itself constitute the peace of co-operative problem-solving. Fear-driven escalation of investment in research and the development of ever-higher technological means of mass destruction can so easily be detached from significant causes other than similar behaviour in other nations. In this situation the feedback loop becomes self-sustaining and exponential in its intensity. Sedating national anxiety demands an accelerating arms race, which in turn intensifies the insecurity, degrades the environment, increases poverty and restimulates the fear-driven cycle.

"The absence of war is not peace; nor does it necessarily provide the conditions for sustainable development. Competitive arms races breed insecurity among nations through spirals of reciprocal fears. Nations need to muster resources to combat environmental degradation and mass poverty. By misdirecting scarce resources, arms races contribute further to insecurity." [p. 297]

The need to maximise resources for the development of sustainable environmental ecosystems and overcoming the spread of absolute poverty demands the redeployment of resources from armament to development. Such a demand is not, however, a prescription, for clearly the sedation of national anxiety is one of the driving forces of international politics. Just as the individual psyche seeks to sustain the repression of neurotic anxiety by increasing the defences and the armouring of the personality, so the same solution is applied to international behaviour. The neurotic roots of international pathology indicate that reality-related imperatives have little power to change the fundamental behaviour. The Commission recognises the need to transcend traditional ways of dealing with national insecurity yet once again the imperative is not earthed in effective dynamic analysis.

"But a comprehensive approach to international and national security must transcend the traditional emphasis on military power and armed competition.

The real sources of insecurity also encompass unsustainable development, and its effects can become intertwined with traditional forms of conflict in a manner that can extend and deepen the latter." [p. 290]

It is interesting to notice the words 'the real sources of insecurity' Here 'reality' is interfaced with 'traditional forms of conflict'. It is a subdued recognition of the role that phantasy and projection play in international relationships. Brundtland, however offers no way of getting access to the analysis and resolution of the phantasy relationships, only a somewhat despairing recognition that reality-related issues to do with environment and development can feed back into the web of paranoid phantasy itself.

The Report has prepared the ground and set the agenda, indicated the direction and applied the imperative. The outstanding task now facing us is to harness at the highest possible level the skills of psychodynamic analysis of the behaviour of complex systems, to develop skills for intervention and resolution and to apply them to the dysfunctional set of phantasy-relationships acted out at the boundaries of large groups, nation-states, ethnic, religious and ideological sectors of the global population.

The higher the levels of stress, the lower the levels of resource and the more rapid the process of change, the more energy the human system diverts into its phantasy world, its anxiety defence behaviours and its dysfunctional paranoid struggles. Re-routing this regressive energy into reality-related problem-solving is rapidly becoming the dynamic priority as we move beyond Brundtland.

b) Growth

If we turn attention next to the direction of economic growth and development, we find a somewhat similar psychodynamic lacuna papered over by reinforced imperatives:

"The downward spiral of poverty and environmental degradation is a waste of opportunities and of resources. In particular, it is a waste of human resources. These links between poverty, inequality, and environmental degradation formed a major theme in our analysis and recommendations. What is needed now is a new era of economic growth - growth that is forceful and at the same time socially and environmentally sustainable." [p.xii]

The analysis recognises that poverty leads to the degradation of the environment. The prescription requires sustainable patterns of growth. The unexamined assumption is that growth in a sustainable mode within the human system leads to the eradication of poverty, or at least a lifting out of survival behaviour of those elements currently being pushed beyond the limit. There is, however, no evidence that the wealth and resources generated through a sustainable pattern of growth would be shared with such equity that environment-threatening poverty would be eliminated. Inequality in the distribution of resources is not merely a symptom of inadequate patterns of growth, it is a product of the dynamic struggle for resources at every personal, interpersonal, group and inter-group boundary of the human socio-political system. Economic structures are the presenting topology of psychodynamic forces, to ignore which is to promulgate a proposal based upon wishful thinking and divorced from the realities of the effects of competition within the global market-place.

If an understanding of the psychodynamic roots of aggression is essential for any modification of the patterns of human armament, then similarly an understanding of the psychodynamic roots of the phantasies of human resourcelessness is essential if any modification of the pattern of wealth distribution is to be achieved. Any culture in which neurotic anxiety emerges whatever the level of possession, develops norms which say that enough is never enough and that whatever wealth is possessed cannot sedate the underlying feelings of paranoia. These inevitably lead to a dynamic in which the only way of sedating such anxieties is by exponential aggregation of wealth. In such a climate inequality develops at the cleavage point between the powerful and the powerless, whether that power is in terms of technology, knowledge, military might, or previously gained economic advantage. In such a system the rich get richer, the poor get poorer and a smaller and smaller percentage of the world's population aggregate a larger and larger proportion of its wealth. The task of any given person, group, firm, organisation, state or multi-national corporation is maximisation of profit and capital. Such a dynamic is totally destructive of the equilibrium of the system as a whole, leading only to the competitive optimisation of a small number of sub-sectors of the system at devastating cost to the rest.

The prescription of sustained growth, even if achievable in its own right, makes no contribution to the solution of the underlying problem of inequitable distribution of wealth, whose roots are so deeply grounded in the phantasy life of human paranoia. Even if economic growth could be generated and sustained as a way of alleviating world poverty, the characteristics of such growth are critically related to environmental issues.

"Economic growth always brings risk of environmental damage, as it puts increased pressure on environmental resources. But policy makers guided by the concept of sustainable development will necessarily work to assure that growing economies remain firmly attached to their ecological roots and that these roots are protected and nurtured so that they may support growth over the long term. Environmental protection is thus inherent in the concept of sustainable development, as is a focus on the sources of environmental problems rather than the symptoms." [p. 40]

This brief passage stands out within the report as offering a unique window into the unconscious symbol structure, or construct, of contemporary global dynamics. Its understanding and interpretation depends on the use of tools currently being developed on the leading edge of the paradigm shift now being experienced within the field of psychoanalysis.

One of the most critical developments in this area is the shift in the criteria of significance, as attention moves from the study of the neurosis of deviant behaviour to elucidation of the pathology of the norm. Stemming from this development is the breakthrough from the limitation of psychoanalysis to the study of individual behaviour to its application in the field of social phenomena and the characteristics of high aggregation complex systems.

Another critical factor is the movement from the study of object relations to a deepening awareness of the underlying ground of environmental relations. The object-relations school of psychoanalysis based its interpretation of human behaviour on the early post-natal stage of human development. The emerging study of environmental relations utilises advances in the field of pre- and peri-natal psychology, in which the human organism has an intense and commonly shared experiential ground in symbiotic relationship to the womb-world. The

symbol structure of the foetal unconscious dominates our adult and social imagery of environmental relations, though often held out of conscious awareness by the repressive defences associated with the termination of the intrauterine dependency in the traumatic experience of human birth.

Returning now to the paragraph from page 40 of the Brundtland Report, we can elucidate the symbols of the foetal unconscious being used as carrier for the description of the environmental relations of the species within its ecological holding environment. The whole paragraph could be ascribed to the processes of development of a full-term foetus in utero. The dynamics, however, have to do with the perseveration of intrauterine development from a post-natal perspective. The foetal unconscious, fixated in the trauma of birth, seeks to return to the womb-world from which it has been evicted, to remain forever unborn, forever growing and yet forever aware of the risk of precipitating environmental trauma by the very processes in which it is engaged.

So, continued 'economic' growth of the enterprise risks damage to the environment on which it depends. The benign symbiosis of the early intrauterine period cannot be sustained in the later stages. Continued growth would destroy that upon which growth depends. However we must note particularly the words used here. The process of sustained economic growth puts 'increased pressure on environmental resources'. Pressure is always experienced in two directions. Here the pressure on the contained is denied, pressure on the container is articulated. The resources concerned are those of the environment which provided the nutrient to sustain the economic growth. This is precisely the experience of the full-term foetus in the upright posture of homo sapiens, in which the increased weight of the babe puts increased pressure onto the blood vessels serving the uterus and the placental interchange system, so reducing the supply of environmental resource upon which sustained 'economic growth' depends. The task of the foetal unconscious, triggered into dread of perinatal trauma by the onset of environmental resource degradation, struggles to solve its problem in phantasy. So its policy-making centres utilise the 'concept of sustainable development'. The problem to be solved is how to remain inside, i.e. to avoid the birth trauma, and yet not only to survive but to go on growing.

Then follow some extraordinarily paradoxical statements, which indicate that the rationality of the Brundtland analysis is being invaded by the symbol construct of the foetal unconscious. The task is:

"to assure that growing economies remain firmly attached to their ecological roots, and that these roots are protected and nurtured so that they may support growth over the long term." [p.40]

Now roots are not part of the environment, they are part of the organism. If sustained growth of a tree is damaging the environment it is the breakdown of the soil nutrient base that is the problem. That breakdown threatens the growth potential and survival of the total organism - root, stem and branch. The confusion between roots and environment is confirmed in the next sentence in which the need to protect and nurture the roots of the organism is placed in an interpretative parallel with environmental protection.

Moving the image construct back to the foetal, in which the symbiotic root structure is precisely that of the placenta attached through the umbilicus to the growing life form of the

babe within its uterine ecology, the common experience of placental failure is precisely reflected here in terms of the potential detachment from the roots, or the detachment of the roots from the environment. Defence against anxieties generated by placental failure requires the phantasy-construct of root protection, root nurture and sustained rooted attachment. The concern is with the quality of the root system, but precisely not with the quality of the environment into whose resource base the roots probe for nurture and into whose pollution absorption characteristics the waste products are discharged. There is major confusion here between the protection of the root system and the protection of the environment.

The symbol structure elucidated here has great resonance with that of the experience of pre-term placental failure, leading to premature birth. The dream life, phantasy drives, career commitment, image-structures, and perceived solutions to apparently realistic problems of a person who has this fundamental grounding experience are dominated by the foetal unconscious agenda of providing a solution to the problem of premature placental failure. The assumption is that the foetus has no power over the environment and therefore environmental-related solutions are inappropriate, root nurture and placental preservation is the order of the day. There is no conception of the possibility of the ending of 'economic growth' of the enterprise, since at this stage of human development the relationship between foetus and environment is driven by the need to aggregate more resources than are required for survival in order to sustain patterns of growth and development. Foetal assumptions are also characterised by impotence and impracticability, since in reality the pre-term foetus has very little power over the conditions of the containing environment and can only indulge in wish-projection characterised by impotent use of the imperative.

In psychodynamic terms any point of traumatic fixation is carried forward in the present experience of the adult as if the imminent future is characterised by the intolerable trauma which originally caused the psychodynamic fixation. Irrational commitment, dysfunctional problem-solving, and inappropriate solutions tend to emerge from this kind of neurotic activity. The presenting problem is apparently to do with our common future, but neurotically is projected from our common past and in particular from the repressed traumatic past of the key personalities of the Commission itself. One is left wondering whether Gro Brundtland's commitment to ecology and environmental relations in her adult political career may not have something to do with the drive to achieve some kind of solution to the problem of a fixated breakdown of intrauterine ecology.

If functional problem-solving of the species within its current ecological holding environment is to be achieved, it is vital to distinguish between the solution of fixated neurotic problems, displaced into the contemporary environment and the reality-related problem-solving required for sustained species survival and development.

If contemporary analysts are correct in interpreting boundary transactions of complex human systems under stress, low resource and rapid change as dominated by the dynamics of the fixated foetal unconscious, then it is only to be expected that problem-solving from a Commission without insight into the dynamic processes involved will be in fundamental collusion with the common pre- and peri-natal psychodynamics. **Deconstruction of displaced foetal projection is essential if effective reality-related solutions to the problems faced by humanity within its global environment are to be devised and applied.**

c) Causal Analysis

Brundtland calls for 'a focus on the sources of environmental problems rather than the symptoms' [p.40]. The shift from symptom description to causal analysis is crucial in the devising of appropriate prescription. It is also vital to distinguish between the neurotic, or phantasy, content of perception of both symptoms and causes and the reality-related material involved. If a particular problem restimulates material from the ground of the common unconscious, then perception of both the symptomaticity and the causality of the phenomenon is invaded by common phantasy, projected onto the triggering data base. The way we perceive a problem is in part phantasy-projection, in part reality-orientation. Realistic problem-solving requires the reduction of phantasy content and maximisation of reality-relatedness. It is therefore axiomatic that problem-solving at this level of complexity requires the utmost possible clarity and awareness of the unconscious material being stimulated and displaced into the process. Causes of the set of presenting problems may be in part phantasy-projection. They may also in reality be related to the psychodynamics of the species rather than to its socio-economic and ecological interactions. Brundtland makes no apparent allowance for either level of causal analysis.

The Commission found certain grounds for realistic hope:

"... that people can co-operate to build a future that is more prosperous, more just, and more secure; that a new era of economic growth can be attained, one based on policies that sustain and expand the Earth's resource base; and that the progress that some have known over the last century can be experienced by all in the years ahead." [p.28]

Co-operative problem-solving, equitable distribution of wealth, common security, sustained economic growth within a sustained and sustaining ecosystem and indeed the possibility of global gardening, in which the species so engages with its environment as to enhance the life-supporting characteristics of that environment, all these are realistically possible, provided the species is able to engage in effective problem-solving in both concept and application. However, the Commission notes:

"But for this to happen, we must understand better the symptoms of stress that confront us, we must identify the causes, and we must design new approaches to managing environmental resources and to sustaining human development." [p. 28]

The position of objective observer is untenable. We are not simply confronted by symptoms of stress in the environment. Humanity is itself part of the stressed system, generating and experiencing, internalising and externalising the symptomatic patterns of stress within the biosphere. As such our position is that of the existentialist. We are participant observers, engaged for real in a saga of action-research in which we both cause and suffer the complex effects of our actions.

There is always a tendency to externalise causality, to displace blame, to pass the buck. So breakdown in the root system of an economy is seen as caused by inter-relationship between the roots and the environment. It is rarely read as a signal that the organism has outgrown its

resource base and needs to undergo a radical change in its value system. The classic example of this form of projection emerges in developed Marxist thinking, where causality of the experience of alienation within the human condition is externalised into the socio-economic environment of the state. The blame is focussed onto some sector of the population, whose exclusive ownership of the means of production is deemed to be the cause of the alienation of the working classes. With this kind of naive analysis the prescription of social revolution and a conversion reaction within the political structure is inevitable. Because of the flawed fundamental analysis, the solution itself is also flawed and represents the symptoms in a different guise. Psychodynamic alienation within the human condition generates and externalises, reifies and constructs precisely those social systems from which the underlying splitting is then read back. The initial dynamic of projection and reification is denied, causality is attributed to the wrong level of the system and through generations of suffering the causal problems persevere and the symptomatic pain is redistributed.

It is vital that any understanding of the symptoms of stress differentiates between the symptomaticity of displaced distress of the human psyche and the practically experienced stressing of the transaction boundary between the human enterprise and its environment caused by the physical behaviours of the former within the constraints of the latter. In practice both causal sets are so deeply intertwined that any prescriptive set of solutions must take cognisance of both.

The movement from description of symptoms to the identification of causes is essential but extremely demanding. We are all used to working with the idea of cause and effect in linear systems, where a specific intervention generates a specific reaction which can be attributed directly to the intervention. Unfortunately complex systems, like the high aggregate human phenomenon, and particularly the complex multi-dimensional and inter-related parameters of the ecosystem, do not respond in linear patterns of cause and effect. Intervention at one point in the system may produce effects which impinge elsewhere. These in turn produce magnified effects rebounding onto the initial situation in such a way as to cause a degrade in the direction of movement required, precisely in response to the initial intervention which was aimed to produce a movement in the positive direction. A study of the inter-connected feedback loops, time-delay sequences and multi-dimensional nature of the complex system is essential in designing interventions which effectively lead to the required results.

It would be inadequate to limit the study of cause and effect in complex systems to the interface between species and environment. It is also vital to understand the symptoms and to probe the causes of the psychodynamic reactions of the human organism to the patterns of stress experienced, since these reactions may themselves precipitate patterns of behaviour which intensify the stress and exacerbate the problems. In particular we have to deal with the fact that resistance to change and defensive behaviour, breakdown in co-operation, lowered levels of system analysis, shorter time-spans of management oversight, return to the security of known ways of behaving, all tend to characterise the human enterprise when faced with conditions of high stress, low resource and rapid transition. Effective implementation of Brundtland proposals therefore requires a practical programme of meta-change at every level of the global village. Unless the species can transform the way it responds to change under stress then its capacity for problem-solving under increasing stress degrades. When that degrade itself is linked in feedback loops within the system to the experience of stress which leads to the degrade itself, then the human reaction can generate catastrophic patterns of

breakdown, not necessarily related to the resources of the environment or the physical needs of the species.

While the development of 'new approaches to managing environmental resources and to sustaining human development' are indeed imperative, their operationalisation depends upon our capacity to mobilise a process of meta-change, reversing those dysfunctional trend patterns which reduce the change-handling capacity of our institutions in response to experienced stress.

d) New Modes of Human Behaviour

In his contribution to the Commission, I.T. Frolov of the Academy of Sciences of the USSR postulated:

"To successfully advance in solving global problems, we need to develop new methods of thinking, to elaborate new moral and value criteria, and, no doubt, new patterns of behaviour." [p.39]

It is not a theme that is taken up substantively within the body of the Report. It exists, however, as a boundary condition, as a pointer to the beyond, a flag at the furthest reach of the Commission's territory, marking the starting point for the exploration of tomorrow.

Current patterns of behaviour can be considered the topology, the presenting surface of the underlying values, moral judgements, religious and ideological constructs of the social system. Significant change in the surface without fundamental transformation of the causal core can only be cosmetic.

Frolov continued his incisive submission in the words:

"Mankind is on the threshold of a new stage in its development. We should not only promote the expansion of its material, scientific, and technical basis, but, what is most important, the formation of new value and humanistic aspirations in human psychology, since wisdom and humaneness are the 'eternal truths' that make the basis of humanity. We need new social, moral, scientific, and ecological concepts, which should be determined by new conditions in the life of mankind today and in the future." [p. 39]

With his almost poetic grasp of the significance of the current turning point in human evolution, he indicates that development in the socio-technical systems of the species are of secondary importance when compared to the paradigm shift required in the value system construct and its underlying ground of psychodynamics. The value system of the world has been derived from the wisdom of the past. Today that is no longer adequate for the generation of the directions of tomorrow. The contemporary value system must be drawn from the realities of the living conditions of the future, whose frontier we encounter in the here-and-now.

Here lies a positive agenda beyond the deconstruction of dysfunctional and inappropriate responses of the human psyche. It is the step beyond the step beyond Brundtland. The

Commission does, however, give little indicators of expected patterns in this new mode of human behaviour - patterns which concern security, conflict management, international relations, equity and intergenerational responsibility.

"Nations must turn away from the destructive logic of an 'arms culture' and focus instead on their common future. The level of armaments and the destruction they could bring about bear no relation to the political conflict that triggered the arms competition in the first place. Nations must not become prisoners of their own arms race. They must face the common danger inherent in the weapons of the nuclear age. They must face the common challenge of providing for sustainable development and act in concert to remove the growing environmental sources of conflict." [p. 304]

Co-operative inter-relationships at an international level are required as the world moulds its patterns of behaviour to the modes of tomorrow. The outmoded patterns of historic conflict, mediated by contemporary technology, show all the marks of social psychosis, suicidally destructive, environmentally catastrophic, bearing no relationship to the realities of problem-solving, conflict-management, species survival or environmental preservation.

The problem with such rhetoric, backed by the imperative, is that it is not at all clear how the international community can operationalise the recommendation. Causal analysis which sees political conflict as the root of the arms race is quite inappropriate. In the confusion there is a further attempt to identify common enemies, to mobilise global paranoia and hence unify the international community. To be sure the world could become one if under attack from malign Martians, but such a unity is hardly a mark of the mature integration of the species! There are indeed growing environmental sources of conflict, but that the conflict should be acted out in paranoid armament is not caused by the environmental constraints. **The recourse to arms has to do with the psychodynamics of aggression within the human species. It is a paranoid syndrome of anxiety control and it is to the causal roots and possible modification of that behaviour that attention must now be turned.** With a new mode of human behaviour in this context the solution of environmental problems moves realistically within our grasp.

International relationships, however, are not simply concerned with armed conflict and boundary management and the Commission indicates the need for a new mode of behaviour within the world community.

"No country can develop in isolation from others. Hence the pursuit of sustainable development requires a new orientation in international relations."
[p. 40]

What is called for here is nothing less than a transformation in the nature of the nation-state. It is inappropriate to de-feudalise the global village by raising its armaments to a new level of aggregation. Construct-complexification must yield to deconstruction itself. In this sense we are not simply dealing with the transformation of the relationships between nation-states but a restructuring of the value-systems, projection mechanisms, and displacement dynamics which generate boundary conditions in large human groups. The working unit which generates global behaviour is not the nation-state but the individual, whose common psychopathology aggregates level by level and is reinforced by cultural symbolism, transmitted across millennia, to generate the matrix of today's international relationships.

The transformation of human behaviour extends not only to the international community but also to the inter-generational.

"Even the narrow notion of physical sustainability implies a concern for social equity between generations, a concern that must logically be extended to equity within each generation." [p. 43]

Once it is recognised that the human species is a significant element within a finite environment, then the concept of inter-generational responsibility becomes inevitable. If the effects of the species on the environment can be totally ignored, because the environment is relatively infinite in both resource and pollution absorption, then there is no sense of inter-generational responsibility. This is a superb example, therefore, of the development of new modes of human behaviour arising precisely out of the environmental conditions of tomorrow's world. There is nothing in our past that constitutes an adequate ideological or religious basis for the value-system required as our species moves into its future.

Inter-generational justice carries with it the implication of intra-generational justice. Awareness of the needs of those as yet unborn has to be matched with awareness of the needs of those born yet without voice. Here lies a massive adjustment in power and powerlessness and a de-coupling of the relationship between might and right.

* * * * *

The imperative directions of development indicated by the Commission remain impotent signposts of a future whose actualisation depends upon our capacity to sustain a process of change in global dynamics beyond anything we have ever experienced as a species. It is therefore to the dynamics of change in human systems that the final section of this paper is addressed.

PROCESS OF CHANGE

The needs and problems to which the Brundtland report draws attention are coming to a crisis in a period in which institutional capacity for international problem-solving is decreasing. Even what little commitment there was to international development aid has gone into reverse. It is against the backdrop of these negative trends that the Commission asserts:

"A major reorientation is needed in many policies and institutional arrangements at the international as well as national level. The time has come to break away. Dismal scenarios of mounting destruction of national and global potential for development - indeed, of the Earth's capacity to support life - are not inescapable destiny. One of the most hopeful characteristics of the changes the world is racing through is that invariably they reflect great opportunities for sustainable development, providing that

institutional arrangements permit sustainable policy options to be elaborated, considered, and implemented." [p. 313]

Processes of change in large-scale complex systems are difficult at the best of times. They become increasingly fraught as those institutions become more rigid and defensive, in response to those very symptoms of stress which require more flexible change-related dynamics for their resolution. Fatalistic despair is not, however, the only option open. The resources for sustainable development, improving quality of life, inter- and intra-national equity, disarmament, population control and long-term ecological enhancement are all present and adequate. Whether the realistic hopes generated by such a statement can be actualised depends upon one fundamental proviso, namely our ability to carry through the requisite levels of institutional change. Increasingly we have the research capacity to arrive at functional solutions to problems. Our great weakness lies in our inability to apply the solutions and to turn words into action.

Institutions and social systems tend to develop in such a way as to minimise free-floating anxiety among their members. Indeed at an unconscious level they are so structured as to maintain and reinforce the fundamental defences against psychotic anxiety, which we share in common. It is well known that any process of institutional and social change tends to disturb those defences and release quite high levels of valent anxiety within the system. Patterns of repression, denial, projection, and displacement are disturbed and the material held behind these defensive mechanisms emerges into conscious experience with greater or lesser intensity. The tendency under these conditions is to behave more defensively, to generate more rigid institutional structures and to resist the initiative for change as if it were a re-enactment of the precipitating trauma which laid down the defences in the first instance. Enabling significant institutional change requires the ability to tolerate high levels of anxiety as the defensive structures become fluid in the period of transition. Frequently extra-institutional structures of temporary support are required during the change process.

It is also characteristic of institutional behaviour that even though the structures are held rigidly stable, the same defensive phenomena emerge if the institution itself comes under high stress, if its resource base attenuates, threatening its survival, or if it is placed in a context or environment itself undergoing rapid or accelerating change.

It is from the dysfunctional juxtaposition of these two characteristics that the present problems are compounded. Just at the point when we need to mobilise maximum capacity for institutional change we find ourselves facing escalating rigidity and resistance to change, precisely because of the same set of problems which demand the flexible problem-solving in the first place. Over millennia security has come to be identified with rigidity and armed boundaries, with the repression of internal negativity, with the projection of badness into the out-group, which then justifies our aggression and salves our guilt for attacking fellow human beings. Today such responses deepen our insecurity and heighten social anxiety, threatening the possibilities of survival for both in-group and out-group. We stand at a turning point, at a watershed of meta-change. The survival of the species and the maintenance of the global ecosystem depend on our ability to unpick the feedback loops which now drive our dysfunctional responses.

"The next few decades are crucial. The time has come to break out of past patterns. Attempts to maintain social and ecological stability through old

approaches to development and environmental protection will increase instability. Security must be sought through change." [p. 22, repeated p. 309]

Conceptually we can see that common security requires fundamental transition. Dynamically we are still moving in the opposite direction. Consultants and analysts of the last half century have laboured under the illusion that the defensive phenomena they encountered during the processes of institutional change were instinctive, stemming from extremely primitive and unalterable patterns of human stress response. Contemporary research indicates that this is not necessarily so, that our common stress responses are in fact learned, though learned in common and learned at an extremely early stage in personal development, a stage in fact in which it had previously been falsely assumed that learning was impossible and memory inoperative.

This research breakthrough indicates that our response to change can itself be changed. It opens up the capacity for understanding the dysfunctional and irrational responses of social systems under stress. Even more importantly it opens up ways of enabling such systems to become far more flexible, able to manage processes of continuous change and to sustain that flexible learning system characteristic even in the face of attenuating resources, accelerating environmental change and survival threat.

Once again at this point within the Commission's language there are tiny symbolic indicators of the unconscious material involved. So, 'security and survival must be sought through change', 'the time has come to break out of past patterns', 'the time has come to break away ...'

When faced with a problem the human organism always returns to previous experience in the search for applicable solutions. Similarly when faced with one set of stimuli the dim recesses of our mind are searched for any resonating patterns of experience and response. So when we find ourselves under pressure, with inadequate room to move, with attenuating resources and mounting pollution, experiencing waves of constriction and compression, forcing us out of the safety of our known environment into an unknown future through some process of transition, perceived as possibly threatening to life itself, then it is at this point that we respond as if facing birth. That universal transition from intrauterine dependency through the experience of crushing alienation marks the fall into the world of work. In defence against the irruption of the repressed trauma from this period every institution becomes a little womb, every boundary a potential cervix to be barricaded and avoided. Any disturbance of the unconscious foetal regression of the species meets with psychotic and irrational discharge of terror, rage, grief, anarchic or suicidal behaviour, death-dealing armour, aggression and counter-aggression. The hope is that after the convulsion we can reconstruct some future womb within which we can remain secure, though psychically unborn. Under these conditions of primal restimulation it is little wonder that our international response to change is so deeply dysfunctional.

Brundtland takes us to the point of full-term within the global womb. It is time for security and survival to be sought through change, the time has come to break out of past patterns, to break away. Birthday symbolism emerges at the boundary, but we are not facing birth, the ecosystem is not our mother, and we are no longer foetally impotent in the situation.

We know what has to be done. Doing it, however, requires laying once and for all the restimulated terror of our birth. It requires us to understand the ways in which such

primitive material irrupts into our social processes and is reified into our social constructs. It requires withdrawal of the paranoid projection of primal impingement and the refusal to act out in patterns of perinatal psychopathology at any level within the global village and under any level of resonant restimulation. Such a potential transformation of our capacity to handle change is possible. It is a global process upon which the possibility and quality of our common future undoubtedly depends.

The experience of integration, the withdrawal of projection, the reduction of prejudice, these are some of the qualitative shifts engendered during such a process. Members of the Commission themselves had a foretaste of such development during their work together:

"As Commissioners, we were acting not in our national roles but as individuals; and as we worked, nationalism and the artificial divides between 'industrialized' and 'developing', between East and West, receded. In their place emerged a common concern for the planet and the interlocked ecological and economic threats with which its people, institutions, and governments now grapple." [p. xii]

It is a common experience in group dynamics that while working together members begin to deconstruct the internal divides and splits, re-focussing their defensive structures into the boundary of the group and its relationship with a potentially threatening environment. The experience is often one of great depth and unity, trust and intimacy, creativity and cohesion within the group itself. The development is, however, only possible because the defences have been reconstructed at the group boundary. In-group characteristics demand out-group characteristics. It is a sub-system experience, not a process of resolution of system behaviour as a whole.

It must also be noted that the Commissioners repudiate their 'national roles' and assert that they were operating within the Commission as individuals. Their representative positions were laid aside for the sake of the Commission's task. Relationship structures between individuals also carrying their national leadership and representative roles are of quite a different order. Such personae carry in their psychodynamic behaviour the transference and projection of the total population of the nation state on whose behalf they act and speak. The experience of the Commission has to be widened to include the totality of the species and include the ability to sustain the same qualitative interactions while remaining in role as national and international representatives.

If the decisions and policy directions indicated by Brundtland are in fact to be implemented then alongside the content of global problem-solving must go a concern for the process of implementation. To that end we require not only the highest possible calibre of study of the psychodynamics of large social systems under stress, but also the operational capacity to apply those insights to every level of every institution concerned with the future well-being of humanity.

Achievement of those twin objectives could well be best served by establishing a trans-national network of social scientists, analysts, researchers, consultants and change-agents. Their task would be the diagnostic analysis of global process. Their goal would be the catalytic enhancement of the learning system of the species, transforming its capacity to enact functional change in a changing context.

Such an initiative could not be taken unilaterally by any one nation state or power block. It would need the supportive endorsement of the United Nations, yet be free to operate as a third-party consultant to the process of the United Nations itself. Network establishment would require entrepreneurial action of extremely high risk as the people concerned step out beyond the restrictive confines of the nation-state. They would initially stand in vulnerable isolation as they sought to lead by competence, rather than coercion, exploring the as yet uncharted territory of global citizenship.

Many historians, politicians, social scientists, analysts, committees and commissions have described the complex phenomena of our world. The task, however, is to change them.

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