

RESOLUTIQUE

Introduction

The Club of Rome has coined the term "resolutique" to comprise the set of solutions which are being developed as a response to the problematique.

The problematique which was identified at the outset of this course included the following elements:

- Population growth
- Resource exhaustion
- Sink overload
- Amenity destruction
- Global atmospheric change
- Infectious disease epidemics
- Unemployment
- Polarization of both wealth and market earnings

These are biophysical problems but we should also be aware that the problems of our age continue to be deeply spiritual. I say "continue" for I hark back to Karl Mannheim's "Crisis in Valuation" (1942) as well as listening to the contemporary voice of Octavio Paz "one of the great European cultural icons of the 20th century" who wrote "The ills that afflict modern society are political and economic, but they are moral and spiritual as well..."

Global Resolutique

Some of these problems are global and some are local, although the globalization of trade has made it impossible to isolate local economies. Nevertheless, those offering solutions usually adopt either a global or a local viewpoint. Typical of the global approach is the Club of Rome's *The First Global Revolution: A strategy for Surviving the World*. Written in 1991, it is perhaps already outdated in its priorities.

The Club of Rome's resolutique shares with the SRI and AMMA GROUP projects, which I shall discuss below, the central concern given to collective value. In the realm of practice the three "zones of the problematique which unquestionably demand immediate attack" are:

- reconversion from a military to a civilian economy
- global warming and energy problems
- the developmental issue.

The peace dividend on which the Club of Rome counted for a liberation of wealth that could be devoted to development has not materialized. The arms brokers ply their trade and supply every new faction with deadly weapons. The profits are enormous and override all sane thinking. "To sell armaments for immediate monetary gain to buyers who may intend to kill the seller seems the ultimate insanity."

The problem of techno-economic sustainability is reduced essentially to the problem of Sustainable Energy by the Club of Rome because, as they say, it is "the only absolute"⁷.

The World Resolutique is a vast subject, but it shares with local resolutiques the need to be "economically healthy, socially equitable, and ecologically sustainable" shall focus, in this final lecture in the series, on a limited set of important principles.

Piecemeal versus Utopian engineering

There are two strongly contrasting attitudes to achieving societal change: a piecemeal approach and a systematic effort to change the paradigm. Those in favour of a piecemeal approach include Frederick Hayek, Karl Popper and the deep ecologist Arne Naess. Robert Theobald, in his latest writing, shows some affinity with them. All these men have a profound mistrust of big schemes. Popper contrasts "Piecemeal versus Utopian Engineering."⁹ Theobald writes:

"...there is an urgent need to move away from Big Government schemes and toward local community systems where need is assessed at a personal level and people are supported in their self-healing, using whatever approaches it is felt will be most appropriate."¹⁰

Elsewhere Theobald writes "There are no Utopian solutions!" Nevertheless I find Theobald's position equivocal for he also speaks of "systemic change".

In contrast to the piecemeal advocates, Mikhail Gorbachev speaks of changing the whole paradigm of global civilization and the GAMMA GROUP of Montreal put it thus:

All too often we tend to view problems in a partial way. Faced with an energy problem we come out, as a society, with a few energy-conservation measures. Faced with inflation we set up anti-inflation policies. Faced with unemployment, we dig out our anti-unemployment arsenal. We do all this without realizing that the solution to the energy problem may actually increase inflation, the anti-inflation program may worsen unemployment, and the anti-unemployment policies may result in increased waste in energy and materials.

The same viewpoint finds expression in "Forrester's First Law"

In any complex system, attack -- however apparently intelligent -- on a single element or symptom generally leads to a deterioration of the system as a whole.

Defining directions

There are many who wish to rush into action with remedies before there is shared vision. But, in the words of Global Vision "... it seems to indicate a profound lack of political realism to suppose that [the necessary] level of cooperation can possibly occur without widespread agreement on the goal."

*If you don't know where you're goin', you may end up someplace else
(attributed to Yogi Berra)*

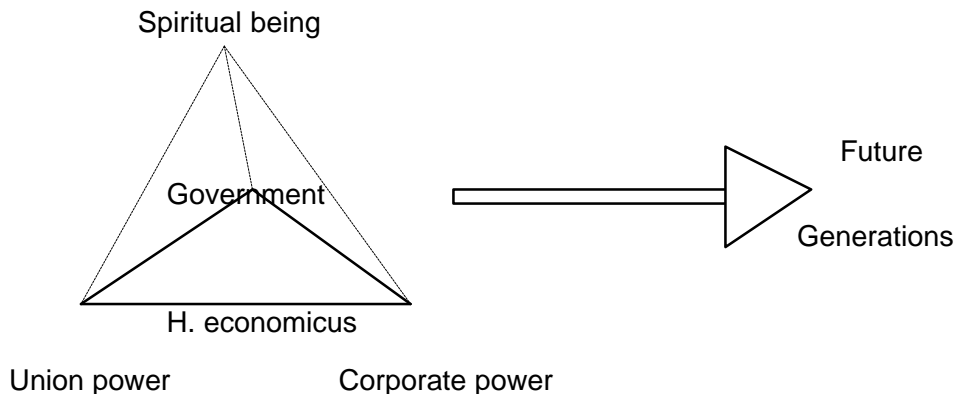
The fabled fleet of small craft that left English shores in 1940 to rescue the defeated British army stranded at Dunkirk had no Admiral and no detailed sailing instructions, but they had an overarching goal and they knew where they were going. I find this a good metaphor. Any resolutique should have a vision of that distant coastline toward which we, each in our own barque, coalescing into little flotillas for mutual support, may eventually find our way.

The builders of visions, options or scenarios as they are called, organize their material into matrices defined by axes or "dimensions"(they may not use these terms). For

example: the *Round Table on Canada in a World of Rapid Change* (part of "The Project on Governing in an Information Society"⁷) developed a simple two dimensional matrix whose axes were the economy (stable or boom -- as establishment figures they could not countenance bust!) and social cohesion (new consensus or fragmentation). The *Stanford Research Institute* "Seven Tomorrows" project⁸ of the 1970s-80s had four axes (energy, food, climate, economy, values) but they were obviously not orthogonal. In the 70s the GAMMA GROUP in Montreal developed five "Conserver Societies" based primarily on the axes of growth, conservation efficiency and values (the thought being that the greater the distance from present values the more unlikely the implementation). The Suzuki Foundation⁹, building on work at the University of Waterloo, defines three "foundations" for a sustainable society (the ecological, social and economic imperatives) while recognising the need for a change in values.

A necessary condition of a desirable resolutique must be sustainability, both techno-economic and social. Robert Theobald, in his *Transformational Learning Community*²⁰ postulates three criteria: ecological integrity, effective decision-making and social cohesion. With respect to the last of these, it is obviously pointless to find technical solutions if the social fabric disintegrates. Any new consensus will obviously have to be based on a greater measure of equity than we now experience. Given the importance of technological unemployment, and the resulting anomie, the social solution must also address the existential need to perform meaningful work, i.e. to practise "right livelihood"²¹.

The opposing interests in society



In looking for solutions we have to recognize where the interests of the parties lie. The figure above shows the three principal groups of powerful actors: the government, the corporations and the individual worker who gains power only through organization into unions. These groups represent "economic man" who is assumed to operate in his narrowest self-interest. But waiting in the wings are the future generations to whom some duty may be owed. Experience shows that, contrary to classical economic theory, individuals and groups often act in directions opposed to their short term self interests. The motivation for such activities and the realm in which life finds its meaning is that of the human spirit. What do we mean by that?

The species *H. sapiens* as a spiritual being

The Technic Frame of Mind is characterised by an attitude of instrumental rationality. Marcuse was quoted as referring to this as "one dimensional". This implies

the existence of another dimension contrasted with it which we may call the realm of "the spirit". The realm of the spirit includes music, art, poetry and right ways of living, the realm of love and friendship, the realm of ceremony and celebration, the realm of Nature, the realm of simple things and autotelic work honoured for themselves and not as means. This is the relevance of the words that Martin Heidegger quoted from the poet Hölderlin toward the end of "The question concerning technology":

"...dichterisch wohnet der Mensch auf dieser Erde."

(poetically dwells Man upon this Earth)

Here too lies the significance of the words "do something else" in the TAMMA GROUP's scenario CS₃ in contrast to the "do more with less"²² "do more with more" etc. of their other scenarios (see Appendix). To the "one-dimensional" instrumental rationality of technology, the realm of the spirit offers another dimension at the pole of "non-rationality" (not "irrationality"). Margaret Somerville, in discussing the ethical problems connected with Human Reproductive Technology, introduced the term "secular sacred" to designate one aspect of our spiritual life and to emphasize that it was not necessarily bound up with any formal religion.²³ Régis Debray²⁴ uses the word "sacred" to mean "something, no matter what, that is not manipulable technologically." In another passage, Debray calls for a return to "earth, wood and stone".

Society and government

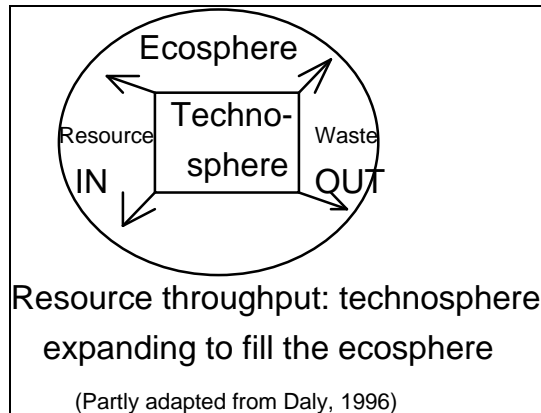
In the struggle for justice between the interests depicted on the diagram, it is assumed that the interests of "society" will be represented by the government. However, if the government boasts that it is "a business government" then this cannot be the case. Only the most crass can assert that what is good for General Motors is good for the country. There is an inherent *proper* conflict between the "guardian" (governmental) and the "commercial" (market) moral syndromes which has been perceptively described by Jane Jacobs²⁵. And there is a conflict of interest between labour and capital. The former wishes to reduce work and increase wages: the latter wishes to extend work (as the source of "surplus value" or profit) and reduce wages.

An approach to conflict resolution that is gaining ground in Europe is the so-called Tripartite Response in which the three parties sit down together to arrive at a solution. This approach papers over the deep structural contradictions caused by the severance of productivity from work and the consequent breakdown of the "job-entitlement nexus", i.e., the traditional justificatory connection between work and wage. If the present cycle of job destruction is permanent, as I believe will prove to be the case, the traditional role of labour unions as protectors of "jobs" cannot be maintained.

Irreconcilable goals

No one should imagine that "there has to be an answer" of any kind! In fact, many of our ideal goals prove to be irreconcilable. The purpose of politics is to negotiate between opposing interests and, as Allan C. Mazur says in the required reading for this course, "[o]ne should be under no illusion that the process will lead to a settlement of the controversy. We sometimes hear people speak as if a controversy is a set of issues such that, if each were solved, the controversy would end. That is not the nature of political debate." It is in the nature of the dialectical political process that the implementation of remedial technologies and of social restructuring gives rise to a new set of problems and these, in turn, call for a second order resolutique. In fact, the process is recursive. We do not expect to find a perfect answer but we hope that each time around we come a little closer to a workable resolutique or set of solutions. There are no short, simple answers.

Let me illustrate this with a discussion of the resource through²⁷ consisting of resource input, a set of transformation cells, and waste output. The transformation cells produce "goods" of various kinds and the result is a tendency of the technosphere (the built world and the aspects of Earth affected by the techno-economic system) to expand into the ecosphere.



Materialist ideology postulates that production/consumption of goods and services should be maximized as a precondition of human happiness. (Readers of Fyodor Dostoevsky's "The Brothers Karamazov" will recognize this as the First Temptation of Christ in the story of The Grand Inquisitor.) Even those economists with a social conscience such as J.K. Galbraith insist that "the good society must have substantial and reliable economic growth²⁸. But this principle runs headlong into the long term requirements of sustainability which call for Resource Extraction and Waste Disposal to be minimized.

The contradiction between growth and sustainability (the growth/sustainability dilemma)

The techno-economic system is a subset of the ecosystem and the ecosystem is finite. It follows that continuous growth in the output and consumption of material goods and in the use of energy is neither socially nor physically sustainable over the long term. There are two aspects to the problem: a) the sociopolitical instability (both international and domestic) caused by the increasing disparities of wealth which a growth scenario will exacerbate unless a way can be found to change the present trend; b) the intergenerational inequity (and ultimate collapse) resulting from solving today's problems at the expense of tomorrow's people by dipping into the capital of our resource endowment. This is the paradox of "sustainable development" when it is interpreted, as is so often the case, to mean "sustainable growth". As I once observed²⁹ the only sustainable development is personal development. Herman Daly makes a clear distinction between growth and development: the former refers to **quantity** of goods and services, the latter to the **quality** of life.

All the industrialists and bankers who offer solutions to the problem of unemployment do so through increased production. The crowning paradox of the set of contradictions we have encountered in this survey of technology is that the northern industrialized world is already an over consumer of the world's resources and of its sink capacity by a huge factor and such policies will only make matters worse. Wackernagel and Rees³⁰ have calculated that each person in the US requires 5.1 ha of productive land to support their resource throughput whereas the Earth has only 1.5 ha/cap available for its present population. Moreover, Paul Kennedy amongst others is convinced that this overconsumption is inconsistent with **political** stability of the globe. One thing the information revolution has done is to expose the secrets of abundance to those living in the lands of poverty. It seems doubtful to me, as it does to Kennedy, that we could survive as islands of affluence in a sea of misery³¹. And of course the metaphor applies as

well to the domestic scene as it does to the global; the increase in number of "gated cities" with their own security forces is an ominous sign.

A high level of employment is considered necessary for social peace at home. This requirement puts further pressure on governments to promote a high rate of economic activity which makes further demands upon non-renewable resources. All the official scenarios are unsustainable in the long run! This is because they all share the productivist or cornucopian stance which I shall now describe.

The productivist³² view (also called "wealthism" or "cornucopian")

An extreme definition of the productivist stance was given by the English philosopher Michael Oakeshott as "the belief not merely that men may properly engage in the unlimited exploitation of the natural resources of the world, but this is so much the preeminently proper occupation of mankind that it should be recognized as the pattern of activity proper to be imposed upon a society by its government."

This stance claims that social problems such as poverty and the unsustainable habits which are said to follow from it (unsustainable population growth; crime, etc.) would be solved by raising global levels of material production/consumption, on the theory that "a rising tide lifts all boats" (which some wag has emended to "a rising tide lifts all yachts.") The poor would find adequate nourishment in the cake crumbs from the tables of the rich.

From a conservationist point of view this approach dangerously ignores the negative correlation between production/consumption levels and sustainability. The sustainability dilemma risks becoming more acute. Nevertheless, it is a more complicated matter than one might imagine. In Brazil, where soap operas are a national addiction, increasing advertising-driven consumption by the very poor has led to a remarkable curb on procreation³⁴.

The strongest objection is that it entails a decision to pass the sustainability problem on to the next generation, either tacitly, or with the expressed expectation that "Science" will come up with solutions when the time comes.

Those productivists who have given thought to the matter of sustainability have a remedy for these objections. They claim that determined efforts to achieve technological efficiency, combined with the trend already observed toward dematerialization (see Trajectory), etherialization or 'ephemeralization³⁵ of every process and product, and the substitution of new materials for ones that are being exhausted, will completely solve the sustainable production problem. Amory Lovins is well known as the prophet of this solution, which he and his co-authors call "Factor Four -- Doubling Wealth, Halving Resource use"³⁶ Lovins and his colleagues are not naïf. They believe that the economy can be changed to one based on the continual flow of service and value so that the conceptual and practical design of the economy comes more and more to resemble the operations of an ecosystem.

Their argument is not lightly to be brushed aside but it has been challenged along the lines discussed in the next section.

Problems with the efficiency/dematerialization remedy

The expectation that radical efficiencies will solve the problem of sustainable production makes the tacit assumption that wants have a limit --for which there is absolutely no evidence.

As was explained in detail in the chapter **Efficiency**, there are fundamental contradictions between short and long term criteria in the search for efficiency within the current economic paradigm.

There is, moreover, a remarkable efficiency paradox known to economists as "the rebound effect"³⁷. "Improved energy or material efficiency may enable firms to raise wages, increase dividends or lower prices, which may lead to increased consumption by workers, shareholders or

customers respectively. Continuing growth will eventually overwhelm gains from efficiency unless the savings are captured by governments in increased taxation for investment in essential natural resource rehabilitation."

Finally, the project of efficiency and dematerialization comes up against certain inexorable limits such as the minimum per capita demand for water and food energy, the second law of thermodynamics³⁸ which places an absolute limit on the efficacy of all heat engines (See chapter **Energy Supply and Demand**), and the capacity of the earth to absorb carbon dioxide and pollutants

An unfortunate effect of the struggle for efficiency through the technical fix is its tendency to spill over into all aspects of the life world, to many of which (for example many interpersonal relations) it is quite inappropriate. In earlier chapters this is referred to as "the technicization of the life world": pushing efficiency to the limit brings it in conflict with the spiritual values that stand in contrast to instrumental rationality

In the chapter on **The Trajectory of Technological Devices and Systems I** pointed out that dematerialization had both a spatial and a temporal aspect. I would like to re-emphasize here the need for temporal dematerialization in the form of durability. Not only do efficiency and dematerialization have to be calculated over the total life cycle of a product (including its final dis-assembly and recycling) but the calculations must be weighted according to the duration of the product cycle. This is the Achilles heel of those economic optimists who point with triumph to progress in miniaturization while they constantly shorten the product cycle! Yes, telephones get smarter and smaller, but they become obsolete in years or even months whereas their clunky predecessors lasted for decades. The regrettable fact is that short product cycles yield high profits to agile firms and the spatial and temporal aspects of dematerialization are thus forced into conflict with each other by the profit system.

Nothing that I have written above should give us cause to abandon the struggle for efficiency. Despite its limitations, it is, in its appropriate sphere, an essential strategy in our effort to limit the impact of our technology on the environment.

Distributive justice

One can also object to the productivist solution along more philosophical lines. The choice between the path of plenty offered by the cornucopians and the path of prudence which I shall shortly describe reflects a rather fundamental dichotomy in people's attitudes which has to be recognized before we even think of examining their feasibility.

The two social paths are reflected in two historically distinct attitudes to progress on the North American continent. Thomas Jefferson and Benjamin Franklin saw progress in terms of social justice and advocated a life of frugality. This is what I would call the spiritual view and what United States Americans usually refer to as "Republican". Later, Daniel Webster and others of his way of mind saw progress in terms of technology. Leo Marx calls this "The technocratic view of progress"³⁹ Contrasting views of progress are discussed in John M. Staudenmaier's "Perils of progress talk: some historical considerations"⁴⁰ and in Christopher Lasch's *The True and Only Heaven: Progress and its Critics*.

In the path of plenty vision, distributive justice is achieved by fall-out, as a "trickle down" phenomenon. Experience of the Reagan years in the USA has made the validity of this argument very doubtful. The path of prudence, on the contrary, would involve active political work to achieve social justice.

The social aspects of the problematique are very complex and a technological solution will never be sufficient. There is a growing threat to domestic and international order arising on the one hand out of increasing disparities between classes and peoples (giving rise to crime, aboriginal protests, uncontrolled migration etc.) and on the other out of the intensifying regulatory climate called forth by the complexity of an increasingly technicized society (giving rise to the militias). These social phenomena have very important technological consequences in the growth of the security industry and the failure of disarmament initiatives. Absolute poverty is a central issue because it has notoriously deleterious effects on population control and resource conservation. Hence attempts to correct the imbalance in consumption

levels between and within nations -- an aspect of **social justice**--must have a major role in the resolutique.

The path of prudence or spiritual view

A minority has decided that the resolutique requires a profound spiritual change (metanoia) in our attitude to the planet and to each other, and a challenge to the assumption that the basis of happiness lies in an increased consumption of "worldly goods". This is the viewpoint of all the great religions in their primal form. It is the view expressed by the great republican thinkers of the nascent United States and by those such as Robert Bellah and his associates who would revive the republican virtues. It is also, strangely enough considering their private role as great industrialists, the view expressed by members of the Club of Rome:

Our efforts to create a sustainable world society and economy demand that we diminish the profligate lifestyles in the industrialized countries through a slow-down in consumption -- which may, in any case, be forced on us by environmental constraints.

In the words of Herman Daly, we have to substitute sustainable development for non-sustainable growth. The enormous difficulty of relying on a metanoia is illustrated in the writings of H. G. Wells. Never one to shy away from prescriptive injunctions for political change, he was yet compelled to bathe the earth in the "green vapour" from a passing comet in order to change men's hearts.

To the spiritual group, as I call them, the problem is seen as one of over-consumption, now focused in the Western world but threatening to spread. To the productivist or cornucopian majority described above, on the other hand, the situation is seen as a global problem of under-production. Except for some extremists in the spiritual camp (the Deep Ecologists) and some Neo-Luddite parties see a major role for technology in the resolutique. But the *kind* of technology envisaged by the two camps is quite different. The spiritual camp seeks a technology that has minimal impact on the earth and generally assumes that this entails a low-tech labour-intensive approach; the majority camp seeks a technology that has maximum impact on productivity and generally assumes that this entails a hi-tech approach. This is the source of the **Appropriate Technology** debate.

I wish to state that in calling the path of frugality "spiritual" I am not appealing to the transcendental. The nearest I can come to it is Koji Nakano's Zen path of noble austerity. The main objections raised against the path of prudence are simply that frugality would not be what people want, that it would go against "human nature", that it is being preached to the young by a generation that has squandered resources, that it is being demanded of the Third World by a profligate First World, and that, even within the Advanced Industrial Countries, it is preached by the "urban, educated and secure". The labour-intensive aspect seems retrogressive - a jettisoning of so much technical progress and liberation from toil. The **GAMMA GROUP** emphasize the difficulty of achieving major swings in values and for that reason hesitate to adopt the path of prudence as their favoured option. The path of spiritual renewal is explicitly rejected in favour of the struggle for political democracy by advocates of Marxist critical theory such as Lukacs and the Frankfurt School. Andrew Feenberg's critical theory of technology sees technology as a social battlefield where the issues are debated and decided.

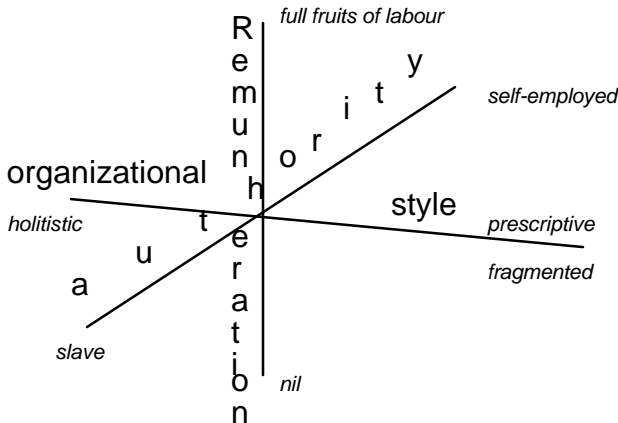
What technophiles fail to recognize is the conviction held by many in the spiritual camp that simplicity and abstinence are absolute moral goods in themselves; that moral corruption follows inevitably from excess. These ascetics have been using the threat to the planet as a valid reason for curbing consumption; but, remove that threat and their devotion to asceticism and the preservation of wilderness will remain. This emphasizes the wisdom of Paul Goodman's observation that "Whether or not it draws on new scientific research, technology is a branch of moral philosophy, not of science." have called this "a spiritualization of life" but perhaps a more acceptable label is "post-materialist". Post-materialists claim to attach more value to quality of life than to material growth. Sociologists studying patterns of behaviour and belief in post-war Europe and North America have identified "post-materialism" as a significant phenomenon.

Albert Borgmann, one of technology's few philosophers advocated cordoning off certain areas of life from technology, with a focus on selected "focal concerns" within this enclosure (in which I find the suggestion of a *temenos* (ἑμενός) or sanctuary). His chosen concerns, as I recall, were running and the pleasures of the table. With respect to the latter, two books concerned with the appropriate approach to "the table" come to mind: the Zen text "Refining your *ifan*" and the Christian pamphlet "Supper of the lamb"⁵². In both, the sacramental aspect of food preparation and consumption is central. The precise nature of the concerns must be idiosyncratic. I would personally stress the important role of ritual (including "good manners"), symbol and *myth* in keeping that sanctuary from defilement. I refer again to the verse of Hölderlin quoted on page 4 and emphasize that the concept of "poesis" may be expanded to all the creative arts. Indeed, as the lifeworld is further technicized, crafted objects made obsolescent by high technology may appear transformed into objects of art (an insight of McLuhan's); one example might be the fine book⁵⁴, another, the fountain pen. The very "ordinariness" of these things is their significance.

Conclusion

Many of the more radical proposals outlined above and described in the appendix are not compatible with the current economic system based on "possessive individualism". A search for a "New Economics"⁵⁵ must rank high on the agenda. Herman Daly's work on the stable economy is central to future thought on this subject. Michael Santel, amongst those seeking a revival of republican virtues, observes that we are accustomed to focus this debate on two factors only : prosperity (economic growth) and fairness (the distributive function). But earlier republican thinkers were equally concerned with the question of what arrangements are conducive to self-government. There is a distinct polarization of views between the proponents of "republican virtue" and those like Walter Lippmann and his successors who had no faith in the ability of the masses to govern themselves and preferred to concentrate on the distributive aspects of social reform.

The form to be taken by **work** seems to be a central issue. Though too vast a subject to be adequately dealt with here, it is worth referring back to Schumacher's conception of "Good Work" (See Work). The structural aspects of the problem can be mapped onto the more or less orthogonal axes of authority (from hierarchy to anarchy through various degrees of autonomy and worker-control), of organizational style (from maximum division of prescribed labour to holistic craft work) and remuneration (from the "wage slave" to the "full fruits of their labour").



Variables in the work situation

Over the last century, various combinations of these factors have been proposed as the ideal to be aimed at. The syndicalists favoured the organizational style of the small workshop with an anarchic minimum of authority. The Guild Socialists accepted the prescriptive style of the modern factory but insisted on worker control. The old-line Marxists, on the whole, have concentrated on the distributive outcome with the State replacing the public corporation,

while the critical Marxists have turned again to industrial democracy (an idea favoured by Marx who was "not a Marxist".) The number of possible combinations is large and the outcome of any given combination in terms of satisfaction not predictable, partly because of the complexity of the system and partly because of subtle factors in the "atmosphere" of the workplace which have been shown to have a huge influence on productivity (and, by inference, on satisfaction). I believe that the best policy is to establish the conditions for the greatest possible diversity of enterprise, each with its "appropriate" technology, rather than to guess what type of enterprise will foster the social ideals of the governing powers.

A two-sector economy, with local labour-intensive industry as one arm and automated production on the other has been proposed by both Gunar Adler Carlsson⁵⁸ and Albert Borgmann⁵⁹, but I envisage an even greater pluralism.

Most individuals will find opportunities for productive work in numerous simultaneous and successive environments. For many of those destined to work for others, a "portfolio" of "jobs" and contracts will be necessary⁶⁰ for the foreseeable future.

The necessary conditions for a materially and socially⁶¹ sustainable future can only be achieved through a two-pronged transformation involving a combination of efficiency and the dematerialization of the built world (in space and time) together with a spiritualization of personal life.

The path ahead is full of contradictions and false hopes in the form of "final" revolutions and the "end of history": such ideas simply indicate exhausted imaginations. Above all, we have to transcend the arid rationality of the technic frame of mind and be like Sissie Jupe in Charles Dickens' *Times* "trying hard to know her humbler fellow-creatures, and to beautify their lives of machinery and reality with those imaginative graces and delights, without which the heart of infancy will wither up, the sturdiest physical manhood will be morally stark death, and the plainest national prosperity figures will be the Writing on the Wall..."⁶¹

Appendix A: Right to work

Evidence was adduced in the chapter on work that people need some sort of work for their personal fulfillment. I suggested in that chapter that this would be work with a productive outcome but not necessarily in a job environment. Those who call for "full employment" therefore miss the point. Full employment will inevitably lead to inflation with all its disadvantages. Moreover, for the work to be "meaningful" toward nurturing the self it must be as autonomous as possible. This is another reason for it not being in the context of a job.

The right to work on the other hand requires two preconditions. First that a decent income is assured and second that the resources necessary for work are made available. One cannot just "work". One normally works "on" or "with" something using a tool or device and supplied with materials. These don't grow on trees.

Guaranteed Basic Income

One way to provide the precondition of income is through a social wage. In one form this is known as the Guaranteed Basic Income. Robert Theobald, who was one of the earliest economists to put forward such a proposal, has now withdrawn his support for it and moved into the Emersonian "self-reliance" camp.⁶² Nevertheless the great importance of the GBI is that it makes time available for autonomous work (instead of the compulsory knocking on employers' doors by an "unemployed" person even when it is well known that there are no jobs).

André Gorz⁶³ points out that the guaranteed income is not paid out of an act of solidarity but as an act of institutional charity and, like all charities, it is conservative in

intention. It is a Right wing idea. In his opinion, the Left's alternative must not accept the growth of unemployment as something inevitable. The Left's project must be the indissoluble bond between the right to an income and the right to work. Every man and woman must be granted the possibility, the right and the duty to perform for society the labour equivalent of what she/he consumes, because work in the economic sense is emancipatory. I hear this idea echoed in the OECD project for an "active society", described as follows:

A new model should therefore be considered: an "active society" in which policies are designed to help as many people as possible to play a positive role, in which they can perceive themselves, and be perceived, as making a useful contribution to economic and social life⁶⁴.

Work sharing

The situation where thousands of people are required to work overtime against their will and thousands of others cannot find paid work seems absurd and remedies have been proposed by numerous writers, e.g., Gorz, Rifkin, DeRomano, O'Hara in recent years. Premier Clark of British Columbia is reported as having adopted Jeremy Rifkin's proposals with enthusiasm and has employed him as a consultant (obviously more prestigious to have one's consultant fly in from California rather than take the ferry from the Gulf Islands which is all it would take to get O'Hara!). Nevertheless, public opinion has hardened during the 1990s in favour of working longer hours (including regular overtime and weekend work). This is no doubt in response to the uncertainty of employment

Work spreading tax

Numerous studies of unemployment have pointed to existing payroll taxes as a significant causative factor. Most call for their abolition but a proposal by David Chapman, author of *Reinventing Democracy*⁶⁵ calls for two changes in taxation, the effect of which would give employers an incentive to spread the work to be done over a larger labour force.

1. the work-spreading tax would be payable only on employee earnings over a certain sum per week
2. the proceeds of the above tax would fund an Earnings Related Benefit for the lowest earners.

Conclusion on work

Very few specific programs have been proposed for ending unemployment. A special issue of *Demos* on the end of unemployment had a seven point agenda but every point was vague. Besides taxation changes and work sharing, discussed above, the proposals dealt with learning, fostering an enterprise culture, measures to increase flexibility, pathways back to work and an ethic of individual sovereignty at work. They make reference to the dual economy (formal and informal) discussed elsewhere.

Official proposals usually contain fundamental contradictions. For instance, the technological solution of increased productivity has recently (1999) been offered as the talisman. But this can result in a reduction of the labour force for the same output just as readily as an increase in output with the same labour force.

APPENDIX B: Scenarios for a sustainable society (in active preparation)

Current research is devoted to synthesizing the conclusions reached above and in the chapter on Sustainable Energy with the scenarios for a sustainable society that have been developed in

Canada and elsewhere since the sixties when a broad public became conscious of the issue. I shall give a brief overview of several important Canadian studies by ~~the~~ GAMMA GROUP of Montreal (mid-seventies); the *Round Table on Canada in a World of Rapid Change*, the Department of Environment and Resource Studies of the University of Waterloo and the David Suzuki Foundation. There is an overlap in the authorship of the U. of Waterloo and the Suzuki Foundation. Later versions of this chapter will also include the *Stanford Research Institute* "Seven Tomorrows" project; Robert Theobald's scenario forming Chapter 7 of his undelivered Massey Lectures; and the GANE project (General Agreement on a New Economy⁶⁸). In the chapter on Efficiency I drew attention to the overriding importance of end-use efficiency. In this context I shall mention another research unit, the End Use Oriented Global Energy Project (EUOGEP) which produced a report in 1988 in which the conservation was to be achieved through end-use efficiency. ~~the~~ EUOGEP believe that a good quality of life could be sustained at 1 kW/cap (one tenth of what Canadians now use)!

Some of these solutions may come into conflict with other social ideals such as freedom of the individual and the rights of "undeveloped" nations to "catch up" with the profligacy of the industrialized nations. That is where major domestic and global conflict will be generated.

Round Table on Canada in a World of Rapid Change (1996)

Access to this report with its four scenarios is readily obtained through its Internet site URL http://canada.gc.ca/govis/govis_e.html

Conserver Society

"The Conserver Society" is the report title of an important study commissioned by the Trudeau government in the 1970s. The conclusions of the study were later published in popular book form.⁷⁰ Its authors, the GAMMA GROUP of Montreal, started with certain minimum conditions:

- an intention to minimize waste in production, consumption and distribution
- a progressively longer time-orientation (short-termism has been called the American disease)
- an awareness of the environmental consequences.

The Group proposed a combination of C-models, aimed at reducing consumption, with E-models, aimed at increasing the efficiency of production.

The Gamma Report Universities of Montreal and McGill Scenarios

CS₀ Status quo

Doing more with more Indiscriminate, haphazard and undirected growth.

CS₁ Growth with conservation

Doing more with less. Strategies for achieving economical growth with minimum value change. Includes full cost pricing.

CS₂ Affluent stable state

Industrial growth arrested at a certain (high) level **Do the same with less**
Includes ZANG (zero artificial needs growth) ZIG (zero industrial growth) ZUG (zero urban growth). Zang is the most important. This represents the true post-industrial society.

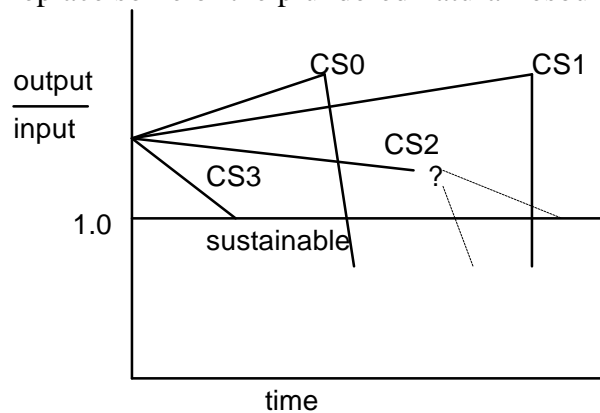
CS₃ Connoisseur's conserver society.

All compatible strategies of CS1 and CS2 plus some Negative strategies NANG and NIG. **Do less with less and do something else** (developing the spiritual, emotive, creative and intellectual potential we all have as human beings.) Consistent with goal of reducing income inequalities. Implies a return to labour-intensive activity.

CS-1 The Squander society

Doing less with more Let's party!

The following diagram tries to show the consequences over time. The CS0 scenario has the fastest growth rate and hence the highest output/input ratio. CS1 has slower growth but is still unsustainable over the long haul. CS2 and CS3 descend to the sustainable level at which point they may flatten or even start to replace some of the plundered natural resources..



Input comprises captured solar energy (income) + mineral resource endowment (capital)

¹©Peter Fitzgerald-Moore, 1996.

²Reprinted as chapter 2 in *Diagnosis of our time: Wartime essays of a sociologist* London: Kegan Paul, Trench, TRubner & Co., 1943.

³Gott, Richard (1996, September 8) Eros hawks his wares *Guardian Weekly*.

⁴King, Alexander & Schneider, Bertrand (1991) *The First Global Revolution: A strategy for Surviving the World*. London: Simon and Schuster, p.118.

⁵op. cit. p.119

⁶op. cit. p.130

⁷op.cit. p.137

⁸Global Vision. NGO Position Paper for the United Nations Commission on Sustainable Development (CSD) [from a defunct web site]

⁹Popper, Karl (1961) *The poverty of historicism* New York: Harper and Row.

¹⁰Theobald, Robert (1996) *Reworking Success: New tools for creating communities* New Orleans: Participation Publishers, p.24.

¹¹op. cit. p.65.

¹²op. cit. p.38

¹³Global Vision, op. cit. ref. 39.

¹⁴Valaskakis, Kimon et al. (1982) *The Conserver Society*: Toronto: Fitzhenry and Whiteside, p. 5.

- ¹⁵King, Alexander and Schneider, Bertrand (1991)*The First Global Revolution: A Report by the Club of Rome*. London: Simon & Schuster. (p.122. attributed to a "New York Times leader")
- ¹⁶Global Vision, op.cit.
- ¹⁷*Changing Maps: Governing in a World of Rapid Change* Carelton University Press, 1995. (And http://canada.gc.ca/govis/govis_e.html)
- ¹⁸Hawken, Paul, Ogilvy, James and Schwartz, Peter (1982)*Seven tomorrows*.Toronto :Bantam Books.
- ¹⁹Robinson, John and Van Bers, Caroline (1996)*Living within our means: the foundations of sustainability*. Vancouver BC: The David Suzuki Foundation.
- ²⁰<http://www.transform.org/transform/tlc/ondex.html>
- ²¹*samma ajiva*, the fifth step in the Buddhist Eightfold Path.
- ²²According to Frederick Ferré, this expression was coined by Buckminster Fuller.
- ²³Somerville, Margaret A., (1996) Are we just gene machines or also secular sacred? From new science to a social paradigm. *Policy Options*(March), 3-6.
- ²⁴Nunberg, G. ed.*Future of the Book*,p.150
- ²⁵Jacobs, Jane (1992).*Systems of Survival: A dialogue on the moral foundations of commerce and politics*. New York: Random House.
- ²⁶Mazur, Allan C. (1981). Controlling technology. In*Technology and the future* Albert H. Teich ed. New York: St. Martin's Press, 1993 (7th Ed.) 180-193.
- ²⁷Daly, Herman E. (1996)*Beyond growth: the economics of sustainable development*Boston: Beacon Press.
- ²⁸*The Good Society* (1996) p.14
- ²⁹Fitzgerald-Moore, P. in*Colombo's Book of Canadian Quotations*
- ³⁰Wackernagel, Mathis & Rees, William (1996)*Our ecological footprint: Reducing human impact on the earth*. Gabriola I. BC: New Society Press. Pending study of the primary text, I have relied on Rachel's Environment and Health Weekly, #537, 1997, for this information. (rachel-weekly@world.std.com).
- ³¹I believe I first heard this expression uttered by Manfred Max-Neef.
- ³²Baum, Gregory (1995, June). The book of capitalism*Canadian Forum* 39-41.
- ³³Oakeshott, Michael (1993).*Morality and politics in modern Europe*.Yale University Press.
- ³⁴Homewood, Brian. "Soaps and credit curb Brazil's population growth" *Scientist*, 20 Apr. 1996, p.5.
- ³⁵The term "ephemeralization" was suggested by Buckminster Fuller who was probably unaware of Toynee's earlier use of "etherialization".
- ³⁶Lovins, Amory (1998). Technology and Lifestyle in*Resurgence*, No.190, 22-25.
- ³⁷William E. Rees "More Jobs, Less Damage" *Alternatives*, v.21, no.4 (Oct/Nov 1995) p.24-30.
- ³⁸See Georgescu-Roegen (1971)*The entropy law and the economic process*Cambridge MA: Harvard University Press.
- ³⁹Leo Marx (1987) "Does improved technology mean progress?" *Technology Review*. The essay is reprinted in some editions of Albert Teich*Technology and the future*.
- ⁴⁰Steven L. Goldman ed. Science, Technology, and Human Progress. Research in Technology Series, v.2. Bethlehem: Lehigh University Press, 1989.
- ⁴¹In earlier versions of this lecture I called this the "religious view" but found a prior use of this term in a quite different (productivist) sense by H.G.Wells (1928) in*The open conspiracy: blueprints for a world revolution*. London: Victor Gollancz.
- ⁴²*Habits of the Heart* (1985) and*The Good Society* (1991).
- ⁴³King & Schneider, 1991, p.227
- ⁴⁴Wells, H. G. (1906)*In the days of the comet*. London: Macmillan.
- ⁴⁵The negative impact of Luddism is that it causes a re-imb up the energy intensity curve which after peaking as industrialization advanced, began to decline as etherialization became effective. It may also increase the heteronomous component of work by increasing labour-intensive activities.
- ⁴⁷Feenberg, Andrew (1991).*Critical theory of technology* New York and Oxford: Oxford University Press.
- ⁴⁸"Yes, but what can I do?" Pamphlet published by the Life Style Movement (UK) lists "Eight reasons for adopting a simpler lifestyle": personal integrity; de-linking from global competition; person-oriented vs. possession oriented way of life;

promoting physical mental and spiritual health; act of anticipation for the time when such conditions are forced upon us; expression of solidarity with those who have no choice; exercise of purchasing power.

⁴⁹In Teich, *Technology and the future*, 1993, p.243.

⁵⁰Inglehart, Ronald (1981) Post-materialism in an environment of insecurity *American Political Science Review*, v.75, p.880-900

⁵¹Dōgen and Kosho Uchiyama (translated by Thomas Wright) (1983). *Refining your life: From the Zen kitchen to enlightenment*. New York, Tokyo : Weatherhill.

⁵²Capon, R.F. *Supper of the lamb*.

⁵³Campbell, Joseph (1972) *Myths to live by*. New York: Viking.

⁵⁴Debray, Régis. (1996) The book as symbolic object. *The future of the book*. Nunberg, Geoffrey, ed. University of California, p.139-151.

⁵⁵The New Economics Foundation of London, England is engaged on this search. A first attempt at a new economics can be found in Herman Daly and John Cobb *For the Common Good*. Another source is the General Agreement on a New Economics (GANE) of the Economics Working Group of the Tides Foundation, Washington DC.

⁵⁶Sandel, Michael. *Democracy's Discontent* the subject of an IDEAS broadcast on CBC 1997 01 27.

⁵⁷An excellent secondary source for this controversy is Christopher Lasch *True and only heaven*.

⁵⁸See Gorz, Andre. (1991) *Critique of economic reason* Verso.

⁵⁹Borgmann, A. (1984). *Technology and the character of contemporary life: A philosophical enquiry*. Chicago University Press.

⁶⁰Handy, Charles (1984). *The future of work* New York: Basil Blackwell.

⁶¹Dickens, Charles (1854/1969) *Hard Times for These Times* Edited with an introduction by David Craig. Penguin Books. p.313.

⁶²See Emerson's essay "Self Reliance". This is my interpretation of Theobald's position and may be wrong.

⁶³Gorz, André (1991) . *Critique of economic reason*. Verso.

⁶⁴OECD (1988) *New technologies in the 1990s: A socio-economic strategy* Geneva.

⁶⁵London: Institute for Social Inventions, 1994.

⁶⁶Biggs, D., D. McFarlane, Caroline Van Bers

⁶⁷Robinson, John, and Caroline Van Bers *Living within our means*. Vancouver: The David Suzuki Foundation, 1996.

⁶⁸<http://www.igc.apc.org/econwg/gane/>

⁶⁹Goldemberg, Jose et al *Energy for a Sustainable World*. John Wiley & Sons 1988.

⁷⁰Valaskakis, Kimon, Peter S. Sindell, J. Graham Smith, and Iris Fitzpatrick-Martin *The Conserver Society: A workable alternative for the future*. Toronto: Fitzhenry and Whiteside, 1979.