

## **Toward a Sustainable Society: Next Steps**

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Faculty of Economics and Business, Maribor, Slovenia.

John Raven, 30 Great King St., Edinburgh EH3 6QH, UK

### **Abstract**

If we are to survive as a species, it will be necessary to make radical changes in every nook and cranny of our society. There can therefore be no blueprint of what a sustainable society should look like. It follows that we need a new answer to Smith and Hayek's question of how to design a society which will innovate and learn without "wise men" or "leaders". This paper outlines some surprising components of an answer that have emerged from 50 years of policy research and indicates some of the further research needed to move forward.

**Keywords:** Sustainability; Socio-cybernetics; Democracy; Bureaucracy; Ecological science.

Recent meetings of the *European Social Forum* and the *G8 Alternatives* fielded hundreds of speakers and attracted hundreds of thousands of participants.

Virtually all speakers focused on one injustice or destructive practice or another and called on "our leaders" to do something about it. Most of the meetings also fielded protest marches, involving hundreds of thousands of people, calling on those same leaders to "do something".

Only a tiny minority recognised that, even if they were people of goodwill, our "leaders" (to be understood as "dominators") would not know what to do ... still less that, even if they did try to try to make common-sense based changes, their actions would be negated by systems processes which few have tried to understand and map.

Even more basically, most of the participants seemed to believe that, with a little tinkering, Western society can continue to function much as it does now.

Yet the available evidence suggests that a sustainable society will have to be as different from our society as agricultural society was from hunter-gatherer society. And, just as no one in a hunter-gatherer society could envisage what an agricultural society would look like, so no one in our society can envisage what a sustainable society would look like.

To bring about a change of this magnitude we need a new answer to Adam Smith and Fred Hayek's most basic question - namely how to design a society which will innovate and learn without central direction. Smith and Hayek's solution does not, and cannot, work<sup>1</sup>. (Note that the question can also be formulated as how to design a society which will operate in the long-term public interest instead of in the short-term interests of dominators.)

Many other issues were overlooked by most of the participants in these conferences. For example, few noted that the problems which confront us are fundamentally inter-linked in such a way that they cannot be tackled independently. Attempts to proceed

on an issue-by-issue basis are usually undermined by the reactions of the rest of the system. Indeed, well-intentioned public action typically has the opposite effect to that intended. Few noted that the belief in authoritarian leadership and governmental summits - as Mill and Smith were at pains to point out - contribute to society's problems rather than offering a route to their solution.

In the light of these observations it may therefore be useful to sketch in some aspects of what might be called "*The Scenario at Go*" that need to be taken into account when prioritising what needs to be done to move forward.

### **The Scenario at Square One**

There are at least four vistas that need to be taken on board by anyone seeking to move forward:

#### 1. *The inadequacy of current forms of public management.*

Michael Moore's film *Fahrenheit 9-11* makes a number of well known, but commonly overlooked, problems very clear:

- a) Conventional forms of "democracy" do not succeed in preventing a range of thugs and psychopaths rising to power.
- b) Conventional forms of "democracy" (opposition parties etc.) do not lead to the exposure of lies and double-talk, let alone to the production of viable alternatives.
- c) The media cannot be relied upon to question lies and to seek out and publicise counter information.
- d) Corporate interests - linked to making money by creating the maximum amount of maximally useless work (including the generation of useless "defence" and wars based on trumped-up charges) - overwhelmingly determine Government policy.
- e) Elected leaders are utterly indifferent to human suffering (one million dead in Iraq

etc.) and thus unlikely to be swayed by “moral” arguments.

Moore’s assertion that the main function of wars is to legitimise the subjugation of indigenous populations to their “leaders” offers a glimpse - however inadequate - of a network of deeper forces controlling the operation of society. It is essential to have a more complete map of this network of forces and to use it to design ways of managing the planet in the long-term public interest, and, in particular, halting the self-perpetuating processes driving toward the extermination of our species.

## 2. *The need to radically change the way we live.*

From their studies of “ecological footprints”, Rees and others have shown that it would be necessary to have five back-up planets engaged in nothing but agriculture for everyone alive today to live as we live in the West. It cannot be done. Furthermore, virtually all graphs of the destruction of the soils, the seas, and the atmosphere reveal exponential increases, most approaching situations beyond which recovery will not be possible. These processes are interlinked: There is no point in changing the means of generating energy with a view to fixing global warming without, at the same time, stemming the destruction of the seas and the atmosphere ... which means halting the production processes that the energy is used to fuel.

What these observations mean is that we have to radically change our way of life: We have to get rid of our cars, our energy-intensive, chemically-based, agriculture, our central heating, our centralised production and distribution networks, our “defence” systems, our banking and “insurance” systems, virtually all trade (dependent as it is on energy-intensive and resource-destructive transportation systems), and so on. What would a society without all these sources of employment look like? How could one manage the transition without creating widespread chaos and destitution? It is all very well to call for dismantling the “defence” system, for example, but what would everyone do without all this useless work to do (work is, after all, one of the main sources of satisfaction in life)?

Note that it is *systemic* change that is required. One can always create, e.g., self-sufficient communities offering high quality of life in lacunae within the system ... but they never do, and cannot, generalise. One can ameliorate some of the worst effects of, e.g., slave labour in Indonesia through legislation, but the effects are always negated by the reactions of the rest of the system.

## 3. *The need to discard any lingering faith in the management of change through the market.*

As we have seen, the change that is required is pervasive ... in every nook and cranny of the system ... and as great as the change from a hunter-gatherer to an agricultural society and that Smith and Hayek

were right to say that the only way forward is via a pervasive climate of experimentation and learning. Yet the “market” solution they proposed (and which is discussed more fully in endnote no. 1) not only does not, but cannot, work. Too many costs are ignored or externalised to the future and cannot be reduced to a single common denominator. Too many benefits (such as security for the future and public health) can only be purchased collectively or cannot be commoditised and bought and sold. (These inherent defects of the market process are independent of the observation that what we have at the moment is not a market economy at all but an economy managed by the international banking community and the TNCs but the management of which is obfuscated and legitimised with the aid of market rhetoric.)

## 4. *The need to discard any lingering faith in the value of economic/monetary indices.*

The monetary system is almost entirely fraudulent. Not only are monetary prices almost entirely determined by an accretion of public servants decisions as to which costs to count and which to spread over the whole community; not only are most costs externalised to the atmosphere, the “third world” and the future; not only has currency become so debased that there are now some 80 times as much money circulating round the globe as total world annual production. Money no longer (if it ever did) provides the “ball-bearings” required to allow a self-managing market system to work. Control of monetary flows combined with authoritarian intervention backed by economic and military sanctions linked to demands for conformity to those fraudulent indices is used to manage the world economy. Prices are not determined by the cost of land, labour, and capital but by an accretion of explicit, but ad-hoc, decisions to manipulate them to achieve both public and private goals - mostly the latter. Nominal financial “loans” are entirely fictitious. Not only are the true rates of “interest” mathematically infinite, their function is almost entirely to legitimise subjugation and exploitation on a breathtaking scale.

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*So, what are the most important things we need to do to move forward?*

At least three things follow from the observations made earlier:

1. It is essential to map the multiple, mutually reinforcing, and largely invisible, forces and feedback loops which control the operation of our society so as to be able to identify appropriate points at which to intervene in the system. This is to be done in a manner analogous to the way in which Newton conceptualised physical force (before that there had just been the violence of the

wind and the waves) and showed how networks of forces (such as those governing the movement of the planets or sailing boats) could be mapped and harnessed. Note that one cannot “fight” the wind and the waves by recruiting the aid of more powerful gods. One can only work out how to harness them. By the same token one cannot expect to find a way forward by fighting the powerful figures that control human destiny. Mapping a system permits targeted systemic intervention where there was before only system-wide (e.g., world-government-based) intervention grounded in ignorance. Small groups of people, even individuals, can make effective systemic interventions. Working out how to map, measure, and intervene in such networks of forces is a classic academic task ... but not one that will be undertaken by the universities as we now know them because whatever capacity they had to generate new insights has been systematically undermined by procedures forced upon them by the very system that it is so important to change.

2. We need to take the concept of the “information society” seriously. Instead of seeking to implement information-based decisions via the fraudulent monetary-based system, we need to evolve ways of giving direct effect to information-based decisions and, more importantly, arrange to learn from the effects of attempting to implement these interventions.
3. New concepts of public management - “democracy” - are required to enable public servants to initiate endless experiments, arrange for their comprehensive evaluation, and act on that information in an innovative way in the long-term public interest.

#### *Mapping Networks of Social Forces: Socio-Cybernetics*

By way of introduction to an illustration of what can be done to map networks of social forces, it is useful to introduce the concept of *socio-cybernetics*.

Cybernetics is the study of guidance and control systems in animals and machines - and the design of better ones. Mention of the animals makes it clear that the term implies the *study of natural* guidance and control systems, not just man-made ones (as in missiles). So *socio-cybernetics* becomes the study of the hidden systems that control the operation of society and the design of better societal management arrangements.

#### *An Illustrative Study*

As in the elucidation of ecological processes more generally, there can be no royal route to revealing the processes that control the operation of social systems. Despite the conflict with bureaucratic notions of efficiency, multiple studies, conducted by adventurous scientists, investigating “the same” topic from different perspectives are required.

Nevertheless it is perhaps useful to refer to some results from a study of the educational system that has been intermittently sustained for 50 years.

We first showed that the most widely endorsed goals of the educational system include nurturing such qualities as the confidence and initiative required to introduce change and identifying, developing, and recognising the huge variety of talents that different people possess. However, the system mainly does the opposite. It stifles initiative and adventurous enquiry and instead inculcates and assesses smatterings of knowledge that is out-of-date when it is taught, forgotten by the time it is needed, and does not relate to people’s problems. Instead of generating and recognising diversity, the system arranges people in a single and misleading hierarchy of “ability” which is then used to allocate position and status

How does it come about that well-intentioned public action is not merely neutered but actually subverted in this way?

Bit by bit our research uncovered a whole series of problems each requiring for their solution major research and organisational development programmes. But it then revealed how these problems are interlinked so that attempts to remedy any one of them are negated by the reactions of the rest of the system.

Although, given that it is a system, it is misleading to say that any of these processes is more important than the others, an impression of some of the surprising results may be indicated by saying that we learned: (i) That, despite its manifest objectives, the so-called educational system is not mainly about education at all but about the sociological process of legitimising the way in which privilege is rationed. At one level this is, of course, well known. But few have asked how these sociological forces can be harnessed to push educators in the direction in which they – and most other people – want to go. It is as if no one asked how the destructive forces of the wind and the waves could be harnessed to enable boats to sail into the wind. (ii) That widely endorsed concepts of public management (such as the belief that public servants are there to do the bidding of elected representatives and should treat everyone in the same way) undermine innovation by stifling experimentation, diversity, and the development of appropriate curricula and assessment procedures.

It emerged that, crucial to finding ways of getting the educational system to achieve its manifest goals, is a new understanding of the role of public servants and the development of new organisational arrangements for their management. It turns out that one of the most important tasks of public servants (who unexpectedly emerge as the most important wealth creators the world has ever known) is to create variety and choice, to arrange for

comprehensive documentation of all the short and long-term, personal and social, consequences of each of the options, and to feed that information outward to the public so that they can make informed choices between them instead of upward in a hierarchy to distant elected representatives to make “democratic” policy decisions binding on all. If public servants are to do these things, new job descriptions and staff appraisal procedures are required. There is, above all, a need for means of giving them credit for engaging in such activities as sifting information for good ideas and acting on it in an innovative way in the long-term public interest. New, network-based, working arrangements are required to facilitate a climate of innovation and learning. And new network-based forms of public supervision - new forms of democracy - are required to expose what they are doing to the public gaze thereby helping to ensure that they carry out their re-defined tasks in such a way as to promote the long-term public interest.

In the context of this last remark, it is of more than passing interest that, more than a century ago, Mill wrote “Instead of the function of governing, for which it is radically unfit, the proper office of a representative assembly is to ... compel a full exposition and justification of all (acts) ... It should be apparent to all the world who did everything, and through whose default anything was left undone”. Such democracy does not depend on elections. It does not depend on hierarchical accountability to distant dominators. It is not a determining and directing structure. Its function is to expose the behaviour of public servants (and others) to the public gaze so that they are more likely to act in the long-term public interest.

#### *Generalisation*

We may state the conclusions of this work in another way by returning to Newton.

But before doing so it is useful to note that, in order to get relatively safe networks of sailing boats, one needed more than Newton’s conceptualisation of force and invention of ways of measuring it – i.e. making it visible and tangible. One also needed charts of the seas, the concepts of latitude and longitude, sextons and chronometers to enable ships’ captains to work out where they were, networks of lighthouses, and means of paying lighthouse keepers.

None of these developments could have been anticipated or called for, let alone designed, by politicians. A whole series of inter-related developments based on theoretical science was required. No one of them, on its own, would have made much difference.

So, to return to education, what we have seen is:

i. That the problems confronted by the system cannot be understood or solved by “common sense”;

- ii. Still less can they be solved by central decree: *pervasive* change is needed: no central committee of ignoramuses can be aware of more than a fraction of the things that need to be done; no central committee can decide what it is possible to do and what it is not possible to do; no central committee can monitor and learn from the myriad of experiments that are needed;
- iii. That the most fundamental development required has to do with mapping the interacting, and mutually supportive, social forces that determine what happens in a manner analogous to the way in which Newton mapped the physical forces that determine motion;
- iv. That, to move forward, we need to harness these forces in a manner analogous to the way in which it became possible to harness the equal and opposite reaction of the sea to the wind by putting keels on sailing boats;
- v. That, in addition to such developments, we need better tools to take stock of where we are (sextons) and recognition of the wider range of jobs to be performed by teachers and administrators (sailors and ships’ captains);
- vi. That we need radical change in the way we think about public management (public funding of experimentation, ship designers, and lighthouse keepers).

It is interesting to reflect on the role of international agreements and, in particular, the role of multi-purpose international assemblies in the development of a (relatively) safe network of sailing boats.

Much of the necessary information - on ships’ design, on the scientific basis for the work, on the idea of preparing charts or building lighthouses - diffused of its own accord. Yet the evolution of common standards of measurement, ways of representing hazards on charts, and safety standards clearly requires some international negotiation. Unfortunately, laudable though the quest for common standards sometimes is, the way in which a concern with the operational process displaces effective pursuit of the basic objectives is horrifyingly illustrated in the workings of the European Community, where endless centrally-generated prescriptions over-ride professional judgment and public choice. Teachers are told what they should be doing in every 10 minutes of the day. Pupils and parents have no real choice of education ... only between schools following the same curriculum. The standards are laid down for environmental and food “quality” result only in a choice between brands of tinned peas rather than choice between a wide variety of natural seeds from which to grow peas. The tendency to prescribe what others will think and do has always run amok: Witness the endless persecution of people who do not share one’s

religious faith, sexual orientation, or beliefs about evolution.

#### *Possible Activities: "What to do Next?"*

The work summarized above actually indicates many important, but non-obvious, things that need to be done. Some of them are things that can be done by individuals acting alone – such as by promoting recognition of the vital role which public servants play in society. Others are collective activities or scientific projects.

#### *Individual Activities*

It follows from the work that has been briefly summarised in this note that there are endless things we could do as individuals. These include:

- ❑ Promoting recognition of the vitally important role which public servants play in society;
- ❑ Promoting, and participating in, network-based supervision of the public service;
- ❑ Articulating the fundamental reasons why centralised "democratic" control is useless;
- ❑ Promoting research to develop the tools that are required to hold public servants accountable for performing their newly defined roles;
- ❑ Promoting research to map the socio-cybernetic forces which are driving society and our planet against the rocks;
- ❑ Advocating greater efforts to promote variety, experimentation, and learning;
- ❑ Promoting a less reductionist, more "ecological", image of science;
- ❑ Drawing attention to the changes that are needed in the way research is commissioned and organised and the criteria and tools required to hold the universities and research institutes accountable for their performance.

These are only examples. There are, in reality, endless important things to do that would contribute to systems change. Yet hardly any of them are things that "common sense" would have suggested that it was important for us to do.

#### *Collective Activities or Projects*

Among the more collective, or "scientific", things that might be done I will first discuss possible social surveys, of the "Measuring what Matters" variety, and then move on to list a number of possible "experiments". The distinction is not sharp, however, because one of the merits of surveys is that they prompt people to think about things they had never thought about before ... and this leads some of them to do something about them. On the other hand, there is an unfortunate tendency for those who conduct surveys to feel that it is "the authorities" who should act on the results.

##### 1. *Surveys, or "measuring what matters".*

Many people have (rightly) suggested that it is important to build indices of quality of life into econometric surveys so that we can know where we

are. But the research summarized above suggests that the most important thing to measure, create debate about, and improve is the capacity of a society to sift information for good ideas and act on those ideas in an innovative way in the long-term public interest.

So far as we can see from the work we have already done, this involves assessing the extent to which a society:

- 1) *Introduces radically changed job descriptions for public servants.* It is their job to:
  - ❑ Release a ferment of experimentation and learning. This involves basing their activities on new ways of thinking about multiple talents of their fellows and creating the public management, organisational, and legal structures required to release and utilise those talents and learn from the wide range of experiments so initiated;
  - ❑ Arrange for the initiation of a wide range of experiments based on different perspectives;
  - ❑ Arrange for the *comprehensive* evaluation of *all* the short and long-term, personal and social, consequences of each of the alternatives;
  - ❑ Feed this information into public debate so that people can make realistic choices between the options;
  - ❑ Study the systems (technological, economic, social-structural, political, legal, cultural, and social) constraints which prevented these experiments working as had been hoped;
  - ❑ Invent ways of intervening in these systems so as to create more "successful" interventions ... and arrange to monitor the effects of these "outwardly-oriented" experiments so as to learn more about the operation of these systems processes;
  - ❑ Establish adventurous R&D institutes;
  - ❑ Arrange for the development of appropriate tools to hold scientists accountable for adventuring into the unknown, finding ways of doing the impossible, and measuring the unmeasurable;
  - ❑ Arrange for the development of the tools needed to hold themselves accountable for undertaking the activities mentioned above and for holding scientists ... indeed everyone ... accountable for taking initiative, finding ways of doing the impossible, and learning from the effects of their actions. Note that embracing such criteria implies that people will need to be evaluated in terms of whether they have engaged in processes which are likely, in the long-term, to make for innovation and development rather than in terms of the success of a particular enterprise or for having made no mistakes. In other words, the tools will be measures of processes rather than outcomes (although outcome measures are also required).

- 2) *Changes widely shared images of science* away from reductionist, single variable, science, toward comprehensive, or ecological, science in which one studies multiple processes, feedback loops, and outcomes. The quality of a scientific study is to be judged, not on the accuracy of its fix on one or two variables, but its comprehensiveness, on in its ability to get a rough fix on all important processes and outcomes and stimulate debate.
- 3) *Supports adventurous research* based on an ecological rather than reductionist model.
- 4) *Supports social research* to investigate such things as what makes for quality of life, quality education, well-being, etc. and subsequently to develop the tools that are required to run alternative systems. (Notwithstanding what was said earlier about the importance of developing new public management arrangements and intervening in the sociological processes performed by the system, reform of the educational system still depends on the development of new measures to recognise the wide diversity of talents available and to understand curriculum processes.) By the same token, one of the most important activities to be undertaken in connection with enhancing quality of life is to develop means of indexing the wide variety of priorities and life satisfactions that different people have (cf. Kinsey). Yet such topics remain relatively trivial compared with the importance of developing a better understanding of the processes which determine what happens in society (socio-cybernetics) and evolving alternative societal management arrangements grounded in recognition of the need for pervasive change. As Rothschild, in his review of the Social Science Research Council was at pains to point out, social scientists have in the past been their own worst enemies, focussing on topics that are too small and ignoring most topics that are crucial to the future development of society (understanding the word development to mean “radical change”).
- 5) *Moves toward new concepts of wealth*: Quality of life inheres in the public domain. Its components (like security for the future) cannot be commoditised and bought and sold.
- 6) Introduces new ways of thinking about the supervision of the public service and ensuring that public servants are more likely to act in the long-term public interest as a result of having more of their behaviour (considered in more appropriate terms) exposed to the public gaze.

In addition to making some kind of multi-component overall assessment of the workings of the system, it seems important to assess progress in relation to a number of more specific topics like:

- 1) The degree to which the mythologies associated with banking, supposed market management, and debt have been de-constructed.
- 2) Growth in awareness of the components of world management via the Federal Reserve Bank, World Bank, IMF, and WTO, linked to the determination of apparent prices through a vast range of government legislation.
- 3) Awareness of the triviality and false sense of citizen effectiveness created by such things as the McLibel case in comparison with the effects of WTO rules on stifling the dissemination of information – such as in the Canadian government’s attempts to draw attention to the effects of the chemical used to replace lead as the anti-knock ingredient of petrol.
- 4) Recognition of the need for scientific activity to do such things as study systems processes, find ways of nurturing and utilising multiple talents, and measuring the flows or real resources into different kinds of activity.
- 5) Awareness of uselessness of monetary indicators
- 6) Deconstruction of faith in central authority and the right of such authorities to command adherence to certain religions, educational systems, and “health” requirements (such as smoking).
- 7) Awareness of deficiencies of democracy: One of these is that long chains of authority to distant elected representatives meeting in multi-purpose assemblies filter out key information so decision takers are necessarily ignorant about most of the issues which should be taken into account. But others include the deficiencies of decision taking by majority vote instead of allowing people with different priorities to go their own way in the context of public debate based on comprehensive evaluation of the short and long term consequences of alternatives.
- 8) The strength of the tendency to unthinkingly accept and endorse the statements of authority and follow their commands without question, often inventing ever more draconian means of carrying out their policies than were ever intended.
- 9) Increase in systems thinking/learning/action.
- 10) The extent of serious action to implement policies that are obviously in the public interest such as deconstructing the defence and military systems; eliminating cars and dramatically reducing transportation; abolition of the planes that are responsible for global dimming; and so on ...

#### *Experimental and Comparative Work*

Although there is no non-authoritarian method of introducing widespread social change in order to study its effects, it might be possible to find organisations, especially in backwaters in the public service, where one could conduct experiments, not

in the classical sense of testing specific hypotheses derived from theory, but in the sense of introducing some changes on the basis of the kind of observations made above, monitoring the effects as comprehensively as possible, modifying the intervention accordingly, and again studying the effects.

Before turning to proposals for experimental work, attention may be drawn to the benefits that would stem from more comparative study, grounded in the conceptual framework outlined above, of organisations and cultures along the lines of those previously carried out by such researchers as Shon, Kanter, Almond and Verba, and Lane.

Possible experimental projects might involve:

- a) Varying the job descriptions of managers and staff, especially to encourage staff to innovate in very diverse areas supported by “parallel organisation” working arrangements; alternative staff appraisal systems; systems of public supervision, not only locally but, via network working, nationally and internationally (to create a sustainable society it will be necessary to intervene in China and the US without resorting to centralised authoritarian commands); and a variety of moves toward comprehensive evaluation.
- b) The creation of “developmental environments” in schools and workplaces. This involves the development and introduction of a new psychometric framework for thinking about human talents and the evolution of better ways of thinking about developmental environments and their effects. To do these things it will be necessary either to work in backwaters somehow protected from mainstream societal pressures or to find ways of intervening in those sociological forces.
- c) Experimenting with ways of giving teachers and managers credit for having engaged in the difficult and demanding process of innovation.

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<sup>1</sup> A full discussion of the objectives of the market mechanism and why it does not and cannot function as Smith and Hayek hoped will be found in: Raven, J. (1995). *The New Wealth of Nations: A New Enquiry into the Nature and Origins of the Wealth of Nations and the Societal Learning Arrangements Needed for a Sustainable Society*. Unionville, New York: Royal Fireworks Press; Sudbury, Suffolk: Bloomfield Books.

Nevertheless it may be useful to include a brief summary of what the “market mechanism” was supposed to do here. Adam Smith and John Stuart Mill both noted that politico-bureaucratic “solutions” to the problems we face simply do not work, commenting that government decisions are essentially decisions by “committees of ignoramuses”. At root, this is because there *cannot*

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*be* any such thing as a wise man or wise woman, let alone a committee of wise men and women. This follows from the fact that the most important information required to take wise decisions cannot be available. If A initiates a course of action in location X, and, unknown to him, B initiates another course of action in location Y, it is impossible to know what will happen as these two courses of action come together.

Smith and Hayek proposed the “market mechanism” as a solution to this problem. It was envisaged as *a societal experimentation learning and management system which would act on information which was necessarily incomplete, dependent for its implications and effects on other changing information, and widely dispersed in the hearts, heads, and hands of billions of people. It would not only initiate action on the basis of such information but also learn from the effects of that action and take such further (corrective) action as necessary.*

In the main, it was *the system* which learned, not the individuals within it.

What “the market” offered was a mechanism whereby, if people liked what A was doing, they could purchase his goods or services or invest in his enterprise. So, if they were doing the right things, both A’s and B’s enterprises would prosper and, as the results came together, previously unimaginable things would happen.

Note that the market mechanism as proposed was quintessentially a societal experimentation, learning, and management *system*. *It has no other raison d’être*. It neither endorses riches or lauds money. It does not endorse a divided society. It was a means of giving power to information and designed to create a ferment of innovation and learning. As the outcomes of endless experiments merged goals which could never previously have been envisaged could be accomplished.

In short, society would innovate, experiment, and learn *without anyone involved in it having to know anything very much*. It would be decentralized, organic (with many feedback loops and potentialities), nonauthoritarian, and, like evolution itself, grossly *inefficient* in bureaucratic terms. It was the ultimate in participative democracy: Everyone involved could “vote with their pennies” independently on a myriad of issues instead of voting every five years or so for a package of issues or “wise” governors. It did not depend on intellectuals or explicit verbal knowledge. People could attend to their feelings and vote accordingly.

Unfortunately, this solution to the problem does not and cannot work.

In the first place, it has turned out to be extremely difficult to get the market mechanism to take account of, and respond to, huge amounts of vitally important

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information, such as all the evidence indicating that, as a species, we are headed to our own extinction carrying the planet as we know it with us. Hardin's (1968) "tragedy of the commons" has proved endemic and pervasive.

Second, to exert influence in the system, one has to be a "worker". This has driven large numbers of people – especially women – to join the system *despite the fact that doing so lowers their quality of life*. Worse, being a "worker" in modern society actually means becoming someone who, as most people know in their souls, carries out *useless* work – worse, work which is both personally and socially destructive. In the end, it turns out that the function of market mythology is to create and legitimise the creation of useless work and to carry out that work as *inefficiently* as possible.

Third, market processes do not, in fact, deliver a high quality of life, that is to say, genuine wealth. Lane (1991) has drawn together a great deal of research showing that quality of life depends on such things as security, self-actualising work, networks of friends and support in one's workplace, and low levels of stress. Such things are driven *down* by market processes.

Fourth, the marketplace does not reward (and therefore stimulate) the most important contributions to wealth-creation (however defined) because these come from the effects of actions taken by people who are long since dead and who got scarce rewards for their efforts, from collaborative research and planning activities carried out in the public sector, and from wives and husbands who provide love, psychotherapy, child-care, and other individual and social maintenance activity without being rewarded for their efforts.

In part because the quality of life depends primarily on *public* provision – on things which cannot be purchased individually – and on activities carried on *outside* the marketplace, the role of public management has continuously increased over the years until, at the present time (although the evidence cannot be included here) the spending of something of the order of 75% of the GNP of Western societies is controlled by their governments. In other words, we do *not* live in market economies at all: We live in *managed* economies. This has many important implications. Among them is the impossibility of any small group of elected representatives directing or overseeing the workings of the governmental machine in any effective way because there is just too much of it. Another is that prices are primarily determined by public servants, and not by the cost or efficiency of land, labour, management, or capital (which "costs" are all primarily determined by public servants).

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Instead, therefore, of having a marketplace which provides a societal management system, we live in a society in which the control of cash flows is used to orchestrate actions which have been decided through the political and bureaucratic process (which happens to be mainly under the control of the TNCs).

We do not live in a society driven by market forces. We live in a society mainly driven by the decisions of international bankers, managers of the TNCs, and public servants, but, most importantly, controlled by mythologies which are every bit as important as those which we can so easily see bind together, and control the operation of, "primitive" societies. What generally passes unnoticed is that most public servants' decisions and the mythologies which control us are largely nurtured and perpetuated by a handful of capitalists who profit from them every bit as much as the leaders of the churches in the middle ages profited from the mythologies they developed and perpetuated.

Fifth, neither money nor prices mean what most people think they stand for. Prices are primarily determined by an accretion of expedient decisions taken by public servants' – not only in relation to taxation, grants, subsidies and the creation of infrastructure, but also in relation to such things as which costs are to be loaded onto particular producers and distributors and which spread over the whole community. (When these costs are re-calculated it turns out that the supposed efficiency of centralized production is simply a myth.)

Sixth, and it follows from what has already been said, most customers are not individuals voting with their pennies but people purchasing on behalf of vast organizations like school systems, health care systems, and defense alliances.

## REFERENCES

- Raven, J. (1994). *Managing Education for Effective Schooling: The Most Important Problem Is to Come to Terms with Values*. Unionville, New York: Trillium Press; Oxford, U.K.: OPP Ltd. (now available from the author at 30, Great King Street, Edinburgh EH3 6QH).
- Rees, W. E. (2002). Conflict or Convergence? *Bulletin of Science, Technology and Society*, 22 (4): 249-268
- Wackernagel, M., & Rees, W. E. (1996). *Our Ecological Footprint: Reducing Human Impact on the Earth*. Philadelphia: New Society Publishers. See also: [www.footprintforum.org](http://www.footprintforum.org)

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