

Toward a Sustainable Society:
Science, Public Management, and the Role of the University

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Background

I have been coming here since 1987.

I guess that's longer than most of you ... so perhaps you don't remember too much about those times.

So the story of how that came about may be of some interest, although what I really want to talk about today is the developments that are needed for a sustainable society and their implications for the role of the University – and especially research in the university.

I was invited by Anna Ciechanowicz on behalf of Polish Psychological Association to speak about research we had undertaken with my father's *Progressive Matrices* test¹.

The conference was held in Szczecin.

While waiting for a bus to get to the train station to get an overnight train to return to Warsaw, a small car bumped its way onto sidewalk and out jumped Prof. Zaleski.

He said to Anna: "Send him to Lublin".

Anna asked "How am I to do that?"

Zaleski replied "I will speak to train driver!"

And so it was that I came – although I don't remember whether I actually travelled with the train driver.

But I certainly stayed with some nuns. At the time it felt as if I was being smuggled into some forbidden premises in the middle of the night. Perhaps I was.

I don't remember much about the visit ... but what I do remember is that, even at that time, there was much concern about the destruction of the environment among those I met here.

I have since been told that the students I talked to included members of what was, or became, Solidarnosc and that they found much of what I had to say about management, and public management in particular, of considerable interest.

Although Prof. Biela was not here at that time, it was he who thereafter took the initiative to organise further visits.

Concern about the destruction of our habitat.

And so to the main points of this talk.

Many people today are very concerned about the destruction of our habitat and, indeed, about the survival of the planet as we know it.

But they cannot see what to do about it.

The need for systemic intervention

They can see that it is a *systems* problem – although they would not express it in that way.

That is, they can see that there is little point in doing such things as not driving their cars since the impact will be trivial and the effects will, in any case, be negated by the reactions of the rest of the system: The roads will just fill up with other people's cars and anyway the economy is heavily dependent on the manufacture, distribution, and disposal of cars so someone will intervene to make sure that that continues.

But how to change the system?

Most people can see that international proclamations to stem global warming have little effect. The mining and utilisation of fossil fuels continues to increase unabated².

In technical terms, the need is for multiple *systems-oriented* interventions, not single-factor, system-wide, changes based on some preoccupation of some central authority.

But, actually, climate change is the least of our problems.

The less widely publicised destruction of the soils, seas, and atmosphere is in many ways much more important than climate change because these are destroying our habitat and food base in a fundamental way

Agriculture has become dependent on chemical fertilisers and pesticides, huge inputs of energy, and massive marketing and distribution systems. It dumps huge amounts of contaminants into the sea and atmosphere.

Disposal of the chemicals used in the manufacture of most products ... and the products (such as plastics and cars) themselves ... poses major problems.

Although many people are vaguely aware that these problems are serious, few are aware of just *how* serious they are.

Just how serious are those problems?

Ecological Footprint

By the time I published my book *The New Wealth of Nations and the Societal Learning Arrangements Needed for a Sustainable Society*³ in 1995, Bill Rees had come up with the concept of “ecological footprint”, demonstrated how to calculate it, and explored its implications⁴.

Thus he had shown that the highly fertile Frazer valley around Vancouver directly or indirectly consumes all the agricultural produce from an area of land 18 times its size for those who live there to live as they do⁵.

This he called the area’s *ecological footprint*.

The concept quickly caught on and many people calculated the footprints of the areas in which they lived.

Holland imports all the fodder that can be produced by an area of land 5 times its size just to feed its livestock. Overall, it requires all the agricultural produce from an area of land 17 times its size to live as it does.

It quickly became apparent that that it would require 3 to 5 back-up planets for everyone alive today to live as we do in the West.

It follows that the United Nations “Sustainable Development” goals simply cannot be achieved within the carrying capacity of the earth.

The Conservation of Matter and Energy

But that is not the end of this bleak story.

The laws of physics relating to the conservation and interchangeability of matter and energy show that it is simply impossible for our way of life to continue.

This is because, if one uses energy, from any source, fossil fuels or otherwise, to transform some material to make something else, the resulting products, and the by-products involved in their manufacture, do not go away.

They show up somewhere else as heat, noxious gasses, river pollutants, and hard-to-dispose of products such as space debris.

There is no such thing as “green” – or “clean” – energy”.

Thus the problem is much worse than most people think.

It cannot be tackled by tinkering in the manner suggested by most of those demonstrating such things as local “viable” communities or alternative trading systems.

If the planet is to survive in anything approaching its present form ... if we are to survive as a species ... we have to radically change the way we live.

We have get rid of our cars, our television sets, our computers, our chemical- and energy-dependent agricultural systems, and our international transportation and trading systems.

The “economic” and political system that is required will have to be as different from ours as agricultural society was from hunter-gatherer society.

And just as no one in an agricultural society could envisage what an industrial society would look like, so no one in our society can envisage what a sustainable society will look like.

Toward an alternative political economy

There can be no blueprint.

Nor could there be because so many interacting changes are necessary. No central authority could possibly envisage them or the direct or indirect effects of their interactions.

And minor changes do not cumulate since they usually have counterintuitive and typically counterproductive effects or are negated by the reactions of the rest of the system⁶.

Creating a Pervasive Climate of Innovation and Learning.

As I see it, all we can do is set up societal experimentation and learning arrangements which might lead to the evolution of a very different type of society ... destination unknown.

Just what might those arrangements look like?

We developed some insights into possible answers to this question in the course of our research into the educational system⁷.

And clarifying those insights in the course of writing *The New Wealth of Nations* is, perhaps, the most important thing I have ever done.

Toward alternative arrangements for societal innovation and learning⁸.

Briefly, it is necessary to create a pervasive climate of experimentation in the social domain, follow those experiments with *comprehensive* evaluation, and then follow through with further experimentation and action.

Possible arrangements for doing this are spelt out in some detail in *The New Wealth of Nations* and summarised in one of the University's journals⁹.

Very briefly, they depend on first acknowledging the, currently underestimated, role which public servants play in the management of society.

Then changing their job descriptions so that these focus on creating a pervasive climate of experimentation, evaluation, and enactment of the lessons learned.

This is very different from the current notion that they are there to enact decrees issued by central authorities (politicians).

Part of this process depends on the creation of a variety of options and feeding *comprehensive* evaluations of the benefits and disbenefits of each to the public so that they can make informed choices between them.

This is very different from feeding selected information upward in a bureaucratic hierarchy to overworked elected “representatives” who are expected to issue decrees binding on all.

Public servants would then be held accountable for performing that role via overlapping, but open, networks of supervisory groups instead of through hierarchical arrangements to elected “representatives”.

Adam Smith¹⁰ called these distant decision-making groups “committees of ignoramuses”.

And John Stuart Mill¹¹ wrote that the function of representative assemblies is “not to govern, but to make visible to everyone who did everything and through whose default anything was left undone”.

If that is the case, one does not need assemblies, “representative” or not; networks of open monitoring groups could perform the function more effectively.

An apparent Digression: Comprehensive Evaluation and “science”.

At this point I have to go on what may appear to be a digression ... but it is a digression which is crucial to any meaningful form of societal management.

It has to do with the notion of comprehensive evaluation.

This turns out to pose a major challenge to current views about the nature of science itself.

Comprehensive evaluation means assessing *all* the short and long term, personal and social, desired and desirable, and undesired and undesirable effects of an activity for people with different needs and priorities.

What is good for one individual may be bad for another; what is good for individuals may be bad for society; what is good in the short term may be bad in the long term; and the undesired and undesirable outcomes may well exceed the desired and desirable outcomes.

It is vitally important to note how different this is from the kind of evaluation study that is promoted by the image of the scientific method most commonly conveyed by schools and universities.

Reductionist Science

What we usually encounter is the application of *reductionist* science.

Reductionist science encourages “scientists” to study the relationship between a single experimental input and a single outcome.

I cannot emphasise too strongly that this enthrallment with reductionist science has had devastating effects on the planet.

Indeed, it poses what is perhaps the greatest threat Gaia has ever encountered.

Let me repeat that.

“Science” as we know it constitutes perhaps the greatest threat to which Gaia has ever been exposed ... worse than collision with the largest meteorite.

It has allowed us to plunder and destroy our habitat (Gaia) in ways which would have been exposed as unethical and unconscionable if the “scientists” concerned had not, as encouraged by conventional images of the scientific method, focussed on one independent and one dependent variable at a time and ignored all the other things that ought to have been considered.

An Example: Fertilisers and Pesticides.

The best known example of the effects of doing this is the study of the use of fertilisers and pesticides in agriculture. The scientists concerned have been concerned *only* with their effects on short term increases in yield.

But the pesticides and fertilisers destroy most of the organisms on which the future fertility of the soils depends and they wash into the seas where they kill our fish and destroy the ocean’s ability to rejuvenate effluent in ways that are necessary for life on earth. The pesticides poison the insects and birds and eventually ourselves via their embedment in our food chain.

So there is an immediate message here for all those who are involved in teaching “science” – whether they be primary school teachers or university lecturers.

The image of what “science” involves needs to be drastically revised.

Another Example: Education

The effects of neglecting the requirement for comprehensive evaluation are particularly serious for those who seek to offer studies which support “evidence based policy” e.g. in social policy, education, and health care.

It is nothing less than criminal for the “scientists” concerned to generate reports relating to one outcome only and fail to study and report other undesired and undesirable outcomes.

To elaborate: I have recently completed a review of the studies that have been presented as contributions to “evidence based policy” in the “educational” area¹². Very briefly, these studies, by focussing only on attainment test scores, have contributed to the destruction of the lives and livelihoods of millions, if not billions, of people not only by failing to reveal the damage done to about one third of the pupils in the system but also by rendering invisible the effects of educational processes which actually do recognise and nurture the pupils’ diverse talents. This in turn contributes to society’s inability to create the climates of initiative or intelligence that are required to promote societal change¹³.

With this important digression behind us, I may now return to my main theme of how to create a pervasive climate of innovation which might lead to the evolution of a very different kind of society which would have at least some possibility of survival into the future.

PARAMETERS FOR THE DESIGN OF ALTERNATIVE PUBLIC “MANAGEMENT” ARRANGEMENTS

So, to come back to my theme, what we need is a public “management” system which innovates and learns without central direction; one which facilitates experimentation, comprehensive evaluation, and systems learning and intervention.

I have already briefly summarised the results of our own work.

But my own views must constitute only one out of a set of possible reflections.

What we really need is a widespread quest for alternative answers (and that has major implications for the role of the Universities).

Some guiding principles

In this context it may be useful to say a couple more things about the nature of the task.

The problem is to design some kind of self-managing¹⁴ system which innovates and learns without the intervention of command-and-control-oriented authorities.

Centralised, command-and-control-oriented authorities discourage experimentation with policies based on ideas and assumptions which differ from their own, and hierarchical monitoring systems filter out negative feedback as those lower down in the chain decline to pass on information they suspect their superiors will not want to hear.

Such systems rarely register, let alone respond to, the multiple, desired and desirable, and undesired and undesirable effects of the intervention. They pay little attention to effects other than those with which their initiators are preoccupied.

These problems had been noted by Adam Smith more than two centuries ago and it was precisely with the design of an alternative information-handling, decision-taking, and societal learning system that he was primarily concerned¹⁵.

In speaking about the promotion of innovation and societal learning via the marketplace he was not thinking primarily about a scheme to facilitate money-making.

It was a design for a system which would harness the unique knowledge in the hearts, heads, and hands of billions of people.

It would do this by, among other things, facilitating innovation. Anyone who had a good idea could initiate some action. Other people could then use their Zloties to purchase the goods or services concerned. They could invest in the business¹⁶. If it met a need, the business would prosper.

Money was not of value in itself but only as a kind of electronic pulse – an information marker – in a self-managing socio-cybernetic system.

*The system would be **organic**, having multiple feedback loops.*

What was happening in one part of the system would automatically adjust to what was happening elsewhere and be sensitive to recursive feedback, that is, to unintended and unanticipated, desired and undesirable, effects of any change that was introduced.

Why the term “Organic”?

It is important to understand why I have described this as an *organic* system.

Consider organisms

The biological functioning of organisms is not mainly controlled from any centre, but by multiple sensors and feedback loops ... some neural, some chemical. Body temperature is maintained at a steady state by at least 7 such feedback loops.

Societies

An amazing number of societies still exist ... in the Himalaya, central Africa, the Amazon basin, and elsewhere ... which function in an analogous way. There is no chief, money, or hierarchy¹⁷.

These societies are often described as “primitive” but they have shown a remarkable capacity to survive (as have single-cell organisms).

Thus they are more correctly characterised as “organic” societies.

Within our own society

Today, many entirely viable organisations, which confer many benefits on those who live and work in them and inflict less destruction of their habitat than other organisations exist within our society today.

The Role of the Universities

OK. So. What are the implications for the Universities?

For reasons which I have summarised in *The New Wealth of Nations* and elsewhere, Smith’s solution does not and cannot work.

The task is to come up with an alternative answer to his question of how to design a self-managing system to guide societal innovation and learning – a system which operates without central direction.

Unfortunately, the investigation of such a topic is not the kind of thing which Universities today are expected, or indeed, able, to include in their research agendas.

But here is a thought: It seems to me something which this University, with its particular historical tradition, might well be better placed than most to tackle.

I will come back to this after discussing a related issue.

The manufacture of Hierarchy

So far, I have highlighted one set of problems that need to be tackled if we are to evolve an alternative society – problems having to do with governance and innovation.

But there is another set of problems which it is, in a sense, even more difficult to discuss – and, to tell the truth, the full significance of which we actually failed to appreciate when writing *The New Wealth of Nations*.

They have to do with a kind of pervasive, deeply embedded, unconscious, commitment to hierarchy in our thinking.

When we speak of management in organisations and society we tend automatically think in terms of hierarchy.

But that is not all.

When we think about differences between people we hone in on such things as the differences between “smart” and “stupid” people, between “strong” and “weak” people.

And when we think about the animal kingdom we think in terms of such things as dominance and the survival of the “fittest”.

At a Societal level

Despite our predisposition to think in these ways, we are uncomfortable when the results emerge as a divided society in which the conditions of life imposed on some appear unnecessary, inhumane, and intolerable. Yet we dismiss it as a natural or systems problem we can do little about.

Yet it is embedded in our notions of social status where we accept without much question that those who do most to improve the lot of mankind – nurses, carers, garbage collectors, agricultural workers, teachers – should to some extent be treated with contempt and poorly paid.

In Schools.

This preoccupation with hierarchy also emerges in schools where what happens is not mainly determined by a quest to *educate* – which would mean making arrangements to nurture and recognise the particular talents of all involved – but by a sociological need to have a single and unarguable criterion on the basis of which to allocate position and privilege.

The emergence and cementation of hierarchy: a fundamental research topic.

What I am implying is that the emergence and cementation of hierarchy in our thoughts and behaviour is actually a topic demanding urgent fundamental research.

Bookchin's law

Let me underline the importance of this by means of a short discussion of what I have come to term Bookchin's Law¹⁸.

*In any situation in which there is a surplus of labour, society somehow manages to invent vast amounts of **hierarchically-organised** senseless work.*

The work is senseless in the sense that it generates products and services that do little to enhance the quality of life (although involvement in the work itself often does give meaning to people's lives and offers such things as a network of social contacts).

The result is that we have vast numbers of people involved in such things as military operations, building pyramids, manufacturing and selling cars, building highways, and administering financial and banking systems which do little to improve quality of life.

Actually, most work in modern society is of this kind.

How has this come about?

In reality, there is nothing new about this process. It has been operating across endless millennia.

Still it defies common sense. And the fact that the work it is hierarchically organised even more so.

It might not be so important to understand these things were it not for the fact that it is this senseless work which is inflicting such untold damage on Gaia.

Perceived Hierarchy in Nature

And here is a related issue.

We perceive nature as being hierarchically organised. We speak of the king of the jungle; the survival of the fittest, and so on.

Yet, if we look more carefully, what we see is the survival of the **fitting**.

We find meadows which are composed of hundreds of species of grass all living in symbiotic relationships with thousands of other species of plants, animals, and micro-organisms.

We find Darwin's bank in which "a thousand flowers bloom".

And back to society

At a societal level, our perverted notion of the survival of the fittest helps to support the pervasive brutal imposition of Social Darwinism.

In schools this shows up as competitive single-ability-oriented activity both within and between schools. This results in few winners but thousands of losers.

This need not be so. If the focus was on nurturing the wide range of talents that are available, we could have¹⁹ thousands of winners able to contribute to the climates of innovation and initiative that are required to secure our future²⁰.

In “benefits” systems it shows up as climates of hostility to, and persecution of, benefits seekers, asylum seekers, and so on.

In society more generally it results in the brutal imposition – by armies and the manipulation of international finance – of the notion of “the free market” and market competition on societies which would prefer to live in alternative ways^{21 22}

So my question here is: *How does this hegemony of hierarchal thinking come about?* What light could the Universities throw on the question if the criteria and funding of research were organised differently?

Advancing understanding via alternative arrangements in the Universities

Recall that this is my second question of this sort: the first was to ask how the universities could contribute to the evolution of alternative arrangements for societal innovation and learning.

Funding

So my question now is: What changes would be needed to enable the universities to contribute more effectively to finding answers to such questions?

Currently, universities are largely funded by contracting with governments, organisations, and individuals to provide specific services – to process so many students on a per capita basis, to conduct research on specific topics with specified methodology, and so on.

Instead they could be funded via what might be called a covenants – an agreement that they would be provided with a significant amount of money to conduct activities of their own choosing but on the understanding that these would be of particular value to the community.

Indeed, this was the basis on which many Universities in the UK ... and indeed the Scottish Council for Research in Education for whom I worked for many years... were funded until the customer-contractor principle came along with Mrs. Thatcher in the 1970s. From then on, everyone had to do what the government wanted and report what the government wanted to hear if they were to get any money.

And, as I understand it, it was precisely such a relationship of covenant that KUL had with the Polish people until the collapse of “communism”.

Is it not true that it was precisely this arrangement which allowed KUL to generate and disseminate the information which allowed Solidarnosc to gouge the first chink in the armoury of state management?

And is it not true that it is precisely the fear of such activity in the future that leads governments to seek to impose a tight rein on their universities?

The Universities as a threat to authoritarian management.

The lesson that “free” universities and research institutes are a threat to authoritarian management was certainly not lost on Mrs. Thatcher – who rapidly set about controlling them via the customer-contractor principle and centralised assessments of “research excellence” based on counting up the number of publications that had appeared in “high-impact, peer-reviewed” journals ... a process which effectively prevented anyone saying, never mind researching, anything which did not support the “conventional wisdom”²³.

Questions for KUL

How, then, might one (re-)establish such conditions at KUL?

To tell the truth, I have been distressed at what I have seen happening here. Having successfully resisted being entrapped by the previous centrally managed governance system KUL has, as I see it, fallen too easily prey to lure of Western thoughtways about how things should be done.

Beware the EU.

In which context I cannot resist the temptation to end by drawing attention to the fact that, as Adam Biela long ago drew to my attention, an explicit and over-riding – and I *mean over-riding* – commitment to promoting destructive growth via the very thoughtways I have set out to challenge here is built into the articles of association of the European Union and the Maastricht and Lisbon treaties.

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ENDNOTES

¹ See eg Raven, John & Jean (2018)

² Saxifrage, B. (2017)

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- ³ Raven, J. (1995)
- ⁴ Rees, W. E. (1992).
- ⁵ This calculation includes such things as the amount of forest required to re-process carbon dioxide and biological activity to rejuvenate water systems.
- ⁶ This is actually one of the most basic laws of systems science and is known as “Forrester’s law”. (Forrester, J. W., 1971/1995)
- ⁷ Raven, J. (1994)
- ⁸ It is tempting to write “toward alternative arrangements for societal Management”. Unfortunately the term “management” sets us off thinking in terms of *hierarchical, rather than organic*, management
- ⁹ Raven, J. (2018b)
- ¹⁰ Smith, A. (1776)
- ¹¹ Mill, J.S. (1859)
- ¹² Raven, J. (2018b)
- ¹³ Rosabeth Kanter (1985), among others, has shown that most innovation comes, not from a cadre of R&D specialists, but from many different people contributine in very different ways to emergent climates of innovation and enterprise.
- ¹⁴ Use of the very word “management” unfortunately sets us off to think about hierarchical authoritarian management, but I will skip over this here.
- ¹⁵ Hence the incorporation of the title of Smith’s book into the title of my own
- ¹⁶ There is, of course, as I have discussed in *The New Wealth of Nations* more to it than this. Among other things, people could, in a sense, sell their expertise selectively into the system and use their euros to “vote” separately on thousands of issues.
- ¹⁷ E.g. Lewis (2002)
- ¹⁸ Bookchin, M. (2005) [summary at Raven, J (2008)].
- ¹⁹ Raven (1994).
- ²⁰ As mentioned earlier, most innovation does not come from outstanding leaders and innovators but from harnessing multiple talents via emergent climates of intelligence or enterprise.
- ²¹ Klein, N. (2007)
- ²² Those who are interested may care to note that the brutal imposition of rigged markets amounts to the opposite of what Smith proposed. The imposition of hierarchical education implies the very opposite of what the word education actually means. Yet these are only two examples of what seems to be a pervasive societal disposition to transform things into their opposites in ways which defy comprehension and merit the most urgent research. (See Raven, J., 1997, for a fuller discussion.)
- ²³ Actually, it is much worse than that since government contracts for research actually allow governments to alter the purported results of those studies.