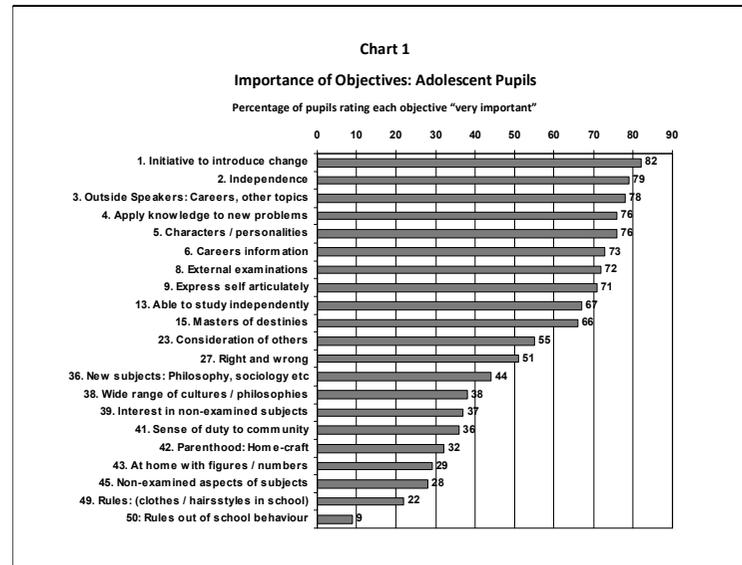


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Conceptualising, Mapping and Measuring Social Forces. John Raven

1. How we got here.

Almost 50 years ago we began a series of studies of the goals of education as perceived by pupils, parents, teachers, and employers. Subsequently we confirmed the accuracy of the perceptions through studies in workplaces and society. The results for adolescent pupils are shown in the next OHD.



There are many important things to be said about this list, but the most important from our point of view today is that most of the goals at the top get neglected. Teachers teach and pupils work toward the goals that are *assessed* although, if one looks at some of the items near the bottom, one sees that the content on which those assessments are based is considered relatively unimportant. The system more or less does the *opposite* of what it is intended to do.

Why Main Goals Neglected

1. Do not know how to achieve.
2. Will not come to terms with social functions of education - incompatible with self-image.
3. No means of assessing – so can not:
 - (i) See progress .
 - (ii) Monitor own effectiveness.
 - (iii) Get credit in certification process.
 - (iv) Get credit in accountability and evaluation.
4. Value-Laden:

One group or other opposes. Incompatible in same class.
Need to individualise in relation to pupil's values so pupils can practice components of competence, but teachers don't know pupils' values and do not respect "working class" values.
Assessments value-laden.
Can only observe if classroom elicits.
Observers' perceptions influenced by his/her values and competencies: Lack ability to manage independent, thoughtful, people.
Need to influence values - fear of brainwashing.

Handle by choice. But prevented by lack of respect and worries about perpetuating status quo. Compare private schools.

cont.

There are many reasons why these goals are neglected and some are extremely important on their own.

Why Main Goals Neglected (Cont.)

5. Transformational. Can't specify outcome in advance.
 6. Requires sensitive monitoring and facilitation of growth. Conflicts with "teaching as telling" and satisfactions wanted from job: centre of attention, source of information.
 7. No tools to help teachers administer individualised, CBE programmes. Too much to expect.
 8. Variety and choice in conflict with equality: Worries about reinforcing social divisions.
 9. Conflict with beliefs about behaviour to be expected of public servant. Requires teachers to attend to pupils' needs and invent ways of meeting them. Requires teachers and pupils to be doing things they do not know how to do and the outcomes of which they cannot specify in advance. Public servants not expected to be innovators and adventurers: expected to do bidding of elected representatives. Criteria and tools of accountability. Creation and management of innovative climates in schools/public service.
- Won't call for research because do not think it can help them with such problems.

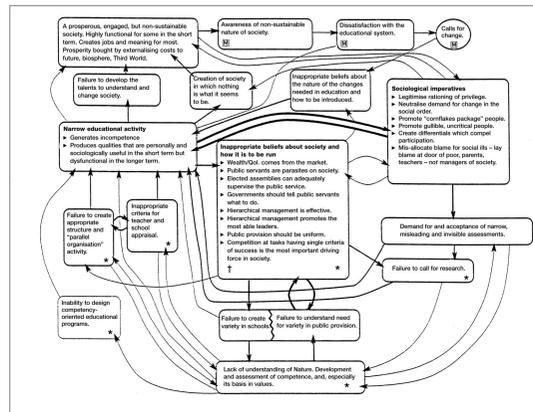
Many of the reasons why these goals are neglected are extremely important on their own.

But the most important from the point of view of today's discussion is that

they form an autopoietic, self-reinforcing, self-extending system

which is sketched in the next slide.

Figure 1: Feedback loops driving down quality of education



* Intervention in these cells would help change the nature of the qualities nurtured and rewarded in the system. Motives which could be harnessed to do this are marked **BE**.
 † These need to be replaced by acceptance of the need to make managed economies work - to find way of giving effect to information concerning the public long-term interest, the need to explicitly create variety and information on the personal and social consequences of the options, and to find ways of holding public servants accountable for, and getting them to act in, the long-term public interest. This means systematic, broadly based, evaluation and participative democracy.

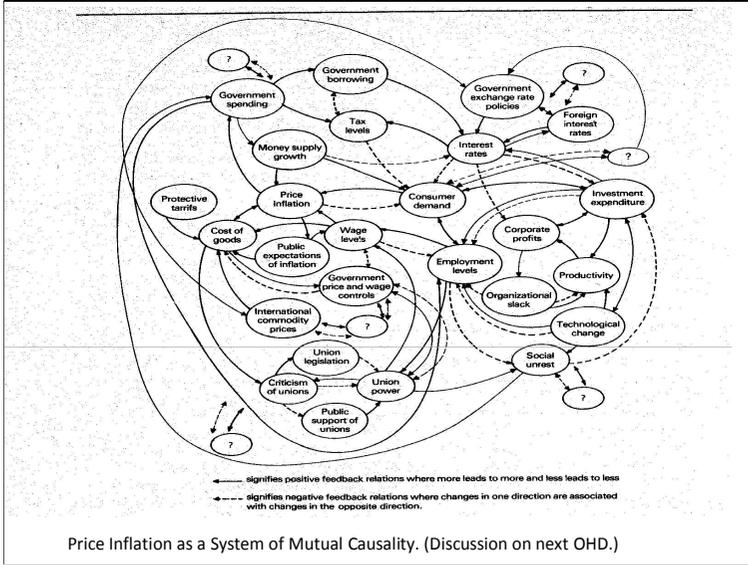
**The attempt to change any one part of
this system on its own is**

- **not merely negated by the reactions of
the rest of the system**
- **but also produces un-intended, and
often counterintuitive and
counterproductive, effects elsewhere in
the system.**

Note that this usage of the word “system” differs very much from the way it is used by eg Gordon Hall and John Seddon.

What help can we get in how to map such systems and think about how to intervene in them

The next slide reproduces a figure from Gareth Morgan.



When we understand the problem of price inflation as a system of mutual causality defined by many interacting forces, we are encouraged to think in loops rather than in lines. No single factor is the cause of the problem. Price inflation is enfolded in the nature of the relations that define the total system.

Many of the links represented in this diagram are deviation-amplifying (heavy lines); negative-feedback relations (dotted lines) are more sparse. Positive feedback thus gains the upper hand.

The system can be influenced by amplifying some feedback loops and damping down others ... as in electronic circuitry.

But note that such intervention is usually said to be dependent on “political will”, which is then said to be lacking.

In other words key feedback loops are missing from the diagram.

Our central task over the past few years has been to find ways of conceptualising, mapping, and measuring such social forces.

Unfortunately, we have not been very successful.

Let me now give another illustration of the value of pursuing such systems maps. This time from Forrester. These maps provided the basis for Meadows’ 1971 “Club of Rome” *Limits to Growth* report.

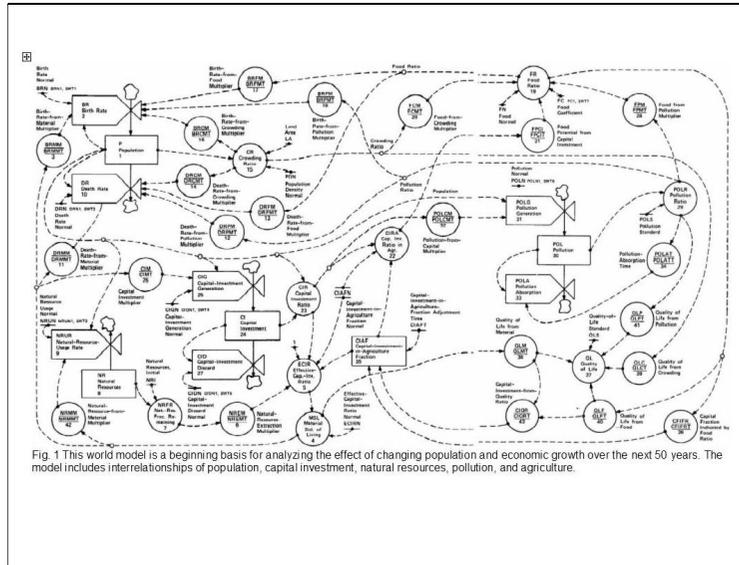
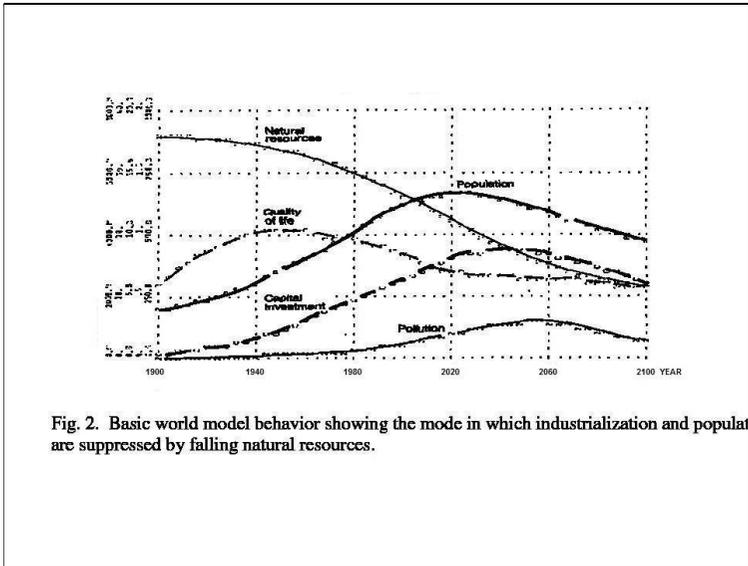


Fig. 1 This world model is a beginning basis for analyzing the effect of changing population and economic growth over the next 50 years. The model includes interrelationships of population, capital investment, natural resources, pollution, and agriculture.

The next figure shows what is likely to happen (as of 1961) if things are left pretty much as they are.



But look what happens if one has the bright idea of limiting consumption of natural resources.

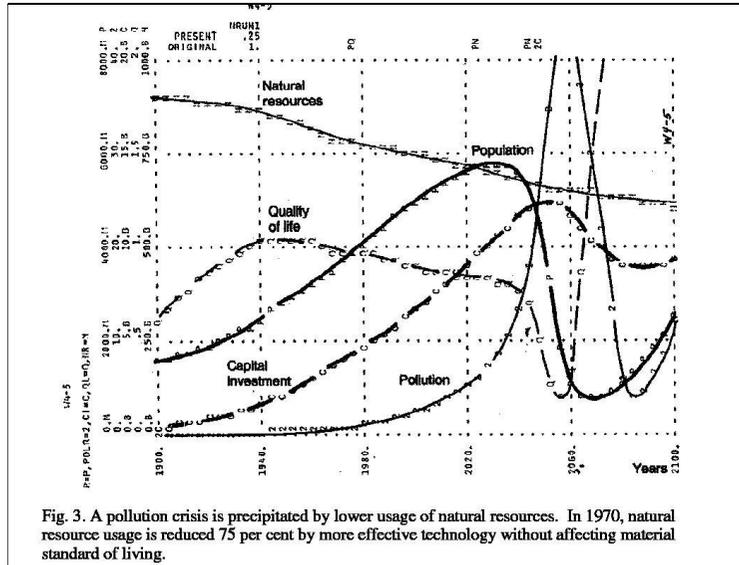


Fig. 3. A pollution crisis is precipitated by lower usage of natural resources. In 1970, natural resource usage is reduced 75 per cent by more effective technology without affecting material standard of living.

By not running out of resources, population and capital investment are able to rise until a pollution crisis is created.

Pollution then acts directly to reduce birth rate, increase death rate, and depress food production.

Population, which, according to this simple model peaks at the year 2030, has thus fallen to one-sixth of its peak within 20 years.

This would be a world-wide catastrophe on a scale never before experienced.

Generalising this observation, what we have here is a dramatic example of the common experience whereby a programme aimed at fixing one problem creates a new set of problems somewhere else in the system.

That's it, really.

I think I have illustrated the importance of developing new ways of thinking about, mapping, measuring, and harnessing social forces ... and intervening in systems *qua* systems.

Website: www.eyeesociety.co.uk , especially <http://www.eyeesociety.co.uk/resources/fulllist.html>, which contains pdfs of many articles and books, including the following:

John Raven: Conceptualising and Mapping Social Forces.
<http://www.eyeesociety.co.uk/resources/scio.pdf> (Includes refs to Morgan, Forrester, Meadows, etc.)

Raven, J., & Navrotsky, V. (2001). The development and use of maps of socio-cybernetic systems to improve educational and social policy. *Journal of Mental Changes*, 7(1-2), 19-60.
<http://www.eyeesociety.co.uk/resources/ravnav3.pdf> or, better,
http://www.eoswiki.co.uk/wiki/index.php/The_Development_and_Use_of_Maps_of_Socio-Cybernetic_Systems_to_Improve_Educational_and_Social_Policy%2C_with_particular_reference_to_sustainability.

John Raven: Advancing and Defeating the PEGS Agenda: Socio-Cybernetics and Murray Bookchin
<http://www.eyeesociety.co.uk/resources/GS09.pdf>

Raven, J. (1994). *Managing Education for Effective Schooling: The Most Important Problem Is to Come to Terms with Values*. Unionville, New York: Trillium Press.

Raven, J. (2001). Some barriers to the introduction of competency-oriented education (Chapter 23). In J. Raven & J. Stephenson (Eds.), *Competence in the Learning Society*. New York: Peter Lang.