Open Dialogue:

Toward Professionalism in Psychology and Education

John Raven

SCHÖN[1] has argued that *professional* competence involves working *outside* one's authenticated domain of technico-rational competence and engaging with ethical and societal issues.

In this paper I will argue that this is especially important for those psychologists working in areas bearing on education and the development and utilisation of human resources. I will argue that psychologists' neglect of many problems that should have been addressed *within* their domain of technico-rational competence has serious ethical implications. Paradoxically, getting those problems addressed will require psychologists to work *outside* their domain of authenticated competence. In other words, greater professional competence is required. One contribution to this would be to encourage the Section to make greater efforts to influence the priorities, assumptions, and workings of the British Psychological Society and society more generally.

I will begin by very briefly summarising (and thus necessarily over-stating) our now fairly well-known work on the aims of education and why these are generally neglected which was summarised in my 1994 book *Managing Education for Effective Schooling*. Thereafter, I will take up the story from where that book left off.

The aims of education

Numerous opinion surveys[2] have shown that the overwhelming majority of parents, pupils, teachers, 20- to 30-year-old ex-pupils, and employers think that the main goals of education involve nurturing such qualities as 'the confidence and initiative required to introduce change' (the most widely endorsed goal among our adolescent pupils), problem-solving ability, the ability to work with others, the ability to make one's own observations, the ability to communicate, leadership, and the ability to understand how organisations and society work and play an active part in them. More generally, they include helping people to develop, and get recognition for, the diverse, often idiosyncratic, talents they possess. The objectives said to be most important do include helping people to acquire the credentials that appear to control entry to jobs, but the impact of this is tempered by widespread recognition that much of the formal knowledge on which such certificates are based is, in reality, *un*important[3].

These wider goals have also been emphasised in the curriculum documents published in many countries[4]. And they have been stressed for almost a century in some of the most widely cited books in teacher education[5].

Somewhat to the surprise of many people, numerous studies of the competencies required in the workplace confirm the accuracy of these opinions[6].

Schools neglect these goals

Yet, despite this virtual unanimity – and, indeed, despite the fact that the very word 'education' itself comes from the Latin root 'educere' which means 'to draw out' (the diverse talents of the students) – most schools neglect most of these goals most of the time[7].

Pupils' reactions

In round figures, about one-third of pupils react positively to their educational experience, one-third just about tolerate it, and one-third find it thoroughly destructive[8]. And they do not change their minds as they grow up and get jobs[9].

It can hardly be considered ethical to keep so many cooped up for so long in such institutions. So, if we accept Schön's argument, this means that we have a *professional* responsibility to do something about it. Somewhat paradoxically, this means, working *outside* what is currently defined as our area of professional competence in order to facilitate and bring into being the adventurous research needed to advance understanding *within* that field. It also means seeking to influence social and political systems.

Reasons for neglect

Our next step has to be to ask why there is this enormous discrepancy between precept and practice. One obvious factor is that many people do not believe that pupils, and people in general, possess a wide variety of very different talents. They tend to think in terms of a single factor of 'ability'. But when teachers and managers adopt appropriate developmental strategies[10] it becomes clear that, as Spearman, the father of *g*, put it, 'Every normal man, woman and child is a genius at something. The problem is to identify at what. This cannot be done with any of the psychometric procedures currently in use'[11].

A second pretty obvious problem is that there is very little formal understanding of how to think about and nurture these talents. This is true despite the extensive, but relatively informal, knowledge about such matters possessed by many parents[12], a significant proportion of managers[13], and about five per cent of teachers[14]. But there is a major problem involved in formalising this knowledge. This is that we not only need a paradigm shift in the ways we think about and measure competence, we also need to

move toward a more 'ecological' model when thinking about person-environment interactions.

In an attempt to address these problems, we set about conducting, bringing together, and trying to formalise, research in these areas[15].

In the course of this, it became clear that there are no tools to help teachers[16] or managers to create group-based developmental environments which embody personal developmental programmes tailored to the motives and talents of individuals. Such tools are also required to identify the participants' motives and incipient talents, create individualised developmental programmes, monitor development, take corrective action when necessary, and give the pupils or employees credit for the idiosyncratic talents they develop.

At first it seemed that a move toward a more descriptive framework (as in biology) for thinking about individual differences and a parallel move toward an interactive (ecological) framework for considering interactions with the environment would suffice. However, it gradually became clear that better ways of thinking about the processes the outcomes of which one was seeking to document was a pre-requisite to meaningful evaluation[17].

More basic insights

But the most important lessons we learnt at this point in our work were at a quite different level.

As far as reform of the educational system is concerned, it became clear that one could not change one thing without simultaneously changing other things. One could not alter classroom processes without altering assessments and one could not meaningfully assess high-level competencies without creating the developmental environments needed if these competencies are to grow and become visible. And one could not change assessments without changing the criteria that are used by employers and universities to select entrants. And so on.

But that was only the beginning! Inadequate technico-rational understanding of the nature of competence and how to nurture and record its components is not the only reason why teachers tend to neglect their main goals. Others include an inability to handle the value conflicts which surface as soon as one tries to introduce educational programmes which actually set out to nurture high-level competencies or promote diversity. A brief example will suffice. As soon as a teacher announces that he or she is going to create a 'thinking classroom' and sets about encouraging children to ask questions they encounter parents who insist 'I don't want my kid asking any more questions. He asks too many already. Your job is to have him sit still and learn what he needs to know to pass his exams! And, furthermore, I don't want you encouraging these things in her kids either. If you do, those kids will do better in life than mine … and I don't want *that*!'

Rethinking public management

Handling such value conflicts presents a major problem in education. One way to do so might be to create a variety of distinctively different educational programmes which actually do nurture different talents, document the differential consequences of these in a comprehensive* way, and feed that information to the public so that they can make informed choices between them. This stands in stark contrast to the notion that (very limited) information deemed relevant to such decisions should be fed upward in a bureaucratic hierarchy to politicians who take decisions binding on all. In short, it involves the evolution of new concepts of bureaucracy and democracy[18] – concepts that will facilitate evolution itself.

So, whose job is it to create this variety and make arrangements whereby people can make informed choices between them? It seems it has to be the job of public servants[19]. It becomes their job to promote a ferment of innovation and learning. This means encouraging everyone in the system to experiment in their own areas and to support those trying to do so in related areas. It means facilitating the evolution of comprehensive evaluations. It means facilitating a move away from methodologies grounded in positivistic thinking toward methodologies grounded in what might be called 'ecological' science and adoption of what has been called 'illuminative' methodology. Beyond that, it involves examining the results of all the experiments that are initiated in order to draw out their implications for understanding the currently invisible *systems* processes that are deflecting educational activities from their goals. Creating a ferment of innovation also means acting on the information which becomes available in an innovative way, i.e. as part of a recursive cycle of experimentation, learning, and adjustment.

If they are to do these things, there will need to be a sea-change in beliefs about what the role of public servants (including head teachers) actually is. It will be necessary to generate new job descriptions for them. These will need to include such things as requirements that they seek out information and act on it in an innovative way in the long-term public interest – in short that they act as professionals. And it will be necessary to evolve new staff and organisational appraisal systems to find out how well they are doing.

How to get them to pay attention to such evaluations of their work? The answer was, in some sense, provided by John Stuart Mill in

---

*Comprehensive evaluation involves documentation of *all* the intended and unintended, desirable and undesirable, short- and long-term, personal and social, consequences of each proposed course of action (what is good in the short term may be bad in the long term; what is good for the individual may be bad for society). The issue is actually of vital importance because it involves serious ethical issues associated with single-outcome evaluation as favoured by reductionist science. There is not space to go into these questions here, but see Prieler & Raven (2008).

1859[20]. One way to make it more likely that people will act in the long-term public interest instead of their own personal interests is to expose their behaviour to the public gaze. Or, as Mill put it, by making 'visible to everyone who did everything and by whose default anything was left undone'. So what is required is a network of overlapping monitoring/ supervisory groups as distinct from a form of accountability supposedly feeding information through extended bureaucratic chains to distant multi-purpose assemblies composed of what Adam Smith and John Stuart Mill called 'committees of ignoramuses'.

Systems thinking

But, to return to the question which led us to embark on this discussion: How are we to understand why teachers tend to neglect their main goals? It became apparent that there are multiple reasons and that these both interact with and support each other. In due course, it became clear that we were dealing with a *system* in which it is impossible to bring about change any one part without changing the whole. (Or, at least, such that, if one does change one part on its own, those changes will either be negated by the rest of the system or have unintended, and perhaps undesirable, consequences elsewhere.)

The conclusion usually drawn from this observation is that one needs *system-wide*, centrally decreed, change to move forward. Not so, we observed. To advance, it will be necessary to make so many as yet unknown changes in so many parts of the system that they could not possibly be envisaged by any central committee. What is needed is multi-pronged *systems-oriented* (not system-wide) intervention. It will be necessary to create a ferment of experimentation and learning – especially *systems* learning. It therefore became clear that our data pointed to a way forward which is fundamentally opposed to that being avidly pursued throughout the world. A central problem (if indeed there is such a thing as a central problem in a system) had to do with inappropriate beliefs about society and how it should work; inap-

propriate beliefs about public management and the role of the citizen.

A systems map of the educational system

We attempted to map some of the connections in Figure 1.

So now to unpack this diagram.

Among other things, it shows:

1. That the dominance of the activities with which schools are preoccupied arises from:
   (i) A series of sociological imperatives (e.g. that schools assist in legitimising a hierarchical society and deciding who will be promoted into the higher ranks in that society). It follows from this – and this has important implications for the way we tend to think about solutions to the problems reviewed earlier – that what happens in schools is not mainly determined by the wishes of parents, teachers, pupils, employers, ministers of education or anyone else but, at least to a significant extent, by what is assessed in the sociological process of allocating position and status;
   (ii) Inappropriate beliefs about the way in which public institutions should be managed;
   (iii) Society's failure to initiate research which would yield useful insights into such things as the nature of competence and how it is to be fostered and assessed;
   (iv) The absence of: (a) systematically generated variety in, and choice between, educational programmes which have demonstrably different consequences; and (b) comprehensive information on the consequences of each of these alternatives;
   (v) Failure to create climates of innovation within schools[21];
   (vi) Inadequate dissemination of the results of research into the nature, development, and assessment of
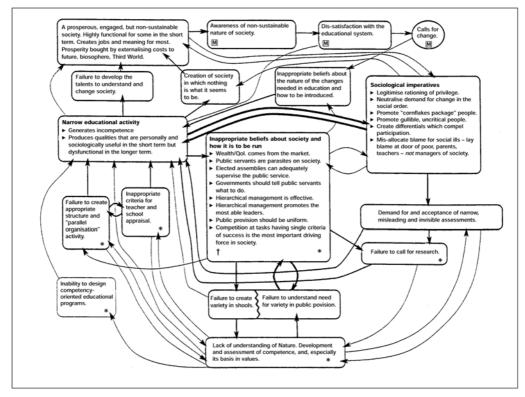
Figure 1: Feedback loops driving down quality of education.

A prosperous, engaged, but non-sustainable society. Highly functional for some in the short term. Creates jobs and meaning for most. Prosperity bought by externalising costs to future, biosphere, Third World.
M

Awareness of non-sustainable nature of society.
M

Dis-satisfaction with the educational system.
M

Calls for change.
M

Failure to develop the talents to understand and change society.

Creation of society in which nothing is what it seems to be.

Inappropriate beliefs about the nature of the changes needed in education and how to be introduced.

Sociological imperatives
► Legitimise rationing of privilege.
► Neutralise demand for change in the social order.
► Promote "cornflakes package" people.
► Promote gullible, uncritical people.
► Create differentials which compel participation.
► Mis-allocate blame for social ills – lay blame at door of poor, parents, teachers – *not* managers of society.

Narrow educational activity
► Generates incompetence
► Produces qualities that are personally and sociologically useful in the short term but dysfunctional in the longer term.

Inappropriate beliefs about society and how it is to be run
► Wealth/QoL comes from the market.
► Public servants are parasites on society.
► Elected assemblies can adequately supervise the public service.
► Governments should tell public servants what to do.
► Hierarchical management is effective.
► Hierarchical management promotes the most able leaders.
► Public provision should be uniform.
► Competition at tasks having single criteria of success is the most important driving force in society.
† *

Failure to create appropriate structure and school appraisal. *

Inappropriate criteria for teacher and school appraisal. *

Failure to create appropriate structure and "parallel organisation" activity. *

Demand for and acceptance of narrow, misleading and invisible assessments.

Failure to call for research. *

Inability to design competency-oriented educational programs. *

Failure to create variety in shools.

Failure to understand need for variety in public povision.

Lack of understanding of Nature. Development and assessment of competence, and, especially its basis in values. *

*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 M.

†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 at in, the long-term public interest. This means systematic, broadly based, evaluation and participative democracy.

generic high-level competencies, and, especially, the implications of the values basis of competence.

2. That this narrow educational process has a series of knock-on effects which finally contribute to its own perpetuation. The competencies and beliefs that are nurtured and inculcated in schools reinforce a social order which offers major benefits to 'able' people who do what is required of them without questioning that order. That society creates endless work which gives meaning to people's lives (but does little to enhance the general quality of life) and creates wealth at the expense of the biosphere, future generations, and the third world. The formal and informal 'educational' system helps to teach a host of incorrect beliefs which collectively result in hardly anything being what it is popularly or authoritatively said to be (e.g. the educational system itself claims to be about promoting the growth of competence when it in fact mainly operates to engage vast numbers of people in 'teaching' and 'learning' activities of little educational merit but which ensure that those who are most able and willing to challenge the fraudulent nature of the system are routed to social positions from which they can have little influence while those who are least able to do anything except secure their own advantage are promoted into influential positions in society). This double-talk makes it extremely difficult to conduct any

rational discussion of the changes needed in society. The sociological imperative that schools help to legitimise the rationing of privilege helps to create a demand for, and encourages acceptance of, narrow, invisible, and mislabelled assessments. Those pre-disposed to acquire these 'qualifications' are not inclined to see the need for, or to commission, genuine enquiry-oriented research or notice other talents in their fellows. Teachers who become aware of the hidden competencies of their 'less able' students experience acute distress. The lack of understanding of the nature of competence leads to a failure to underline the need for a variety of value-based educational programmes and thus to the perpetuation of narrow educational activity.

3. That the main motives for change include widespread awareness that there is something seriously wrong with the educational system, and, more specifically, that it fails miserably in its manifest task of identifying, nurturing, recognising, and utilising most people's motives and talents. (Unfortunately, the most commonly proposed solutions to this problem, based as they are on other misunderstandings, are inappropriate.) However, another motive for change stems from increasing recognition that we have created a non-sustainable society and that basic change in the way society operates is essential.

4. That there are a number of points at which it should be possible to intervene in the feedback loops to create an upward spiral. These might involve:
   (i) Promoting wider recognition that one cannot get value for human effort in modern society unless we introduce better means of monitoring and evaluating the long-term effects of what we are doing and better ways of giving effect to such information. This points to the need to change the way we run

society, to the need to introduce more appropriate social research and evaluation activity, and to find ways of holding public servants and politicians accountable for seeking out and acting on information in an innovative way in the long-term public interest;
   (ii) Introducing the 'parallel organisa-tion'[22] activities that are required to promote innovation within schools;
   (iii) Establishing a greater variety of distinctively different, value-based, educational programmes and providing information on the short and long-term, personal and social, consequences of each;
   (iv) Creating public debate about the forms of supervision – the nature of the democracy – needed to ensure that public servants seek out and act on information in an innovative way in the public interest;
   (iv) Disseminating what is already known about the nature, development, and assessment of competence and its implications.

Standing further back from the Figure what we see is that:

1. It is impossible to achieve significant benefits by changing any one part of the system … such as curriculum, examina-tions or teacher training on its own … without simultaneously making other changes – otherwise the effects of the change will either be negated by the reactions of the rest of the system or produce counterintuitive, and usually counterproductive, changes elsewhere. On the other hand, it is equally clear that command-and-control-based system-wide change based on uninformed opinion will achieve little.

2. Pervasive, *systems-oriented*, changes are required to move forward. But these changes, although collectively system-wide, cannot be centrally mandated because there are too many new things to be done.

3. Since what happens is not determined by the wishes of any particular group of people but *by the operation of the system itself* the widespread tendency to single out and *blame* parents, pupils, teachers, public servants, or politicians is entirely inappropriate. *Their* behaviour is mainly determined by the system. One needs to take these systemic forces seriously and ask how they can be harnessed in an analogous way to that in which marine engineers harness the potentially destructive forces of the wind: They will not go away!

4. It is vital to generalise the observation made in (3): We need to fundamentally re-frame the way we think about the causation of behaviour in a way which parallels one of the transformations Newton introduced into physics. Before Newton, if objects moved or changed direction, it was because of their *internal* properties: they were *animated*. After Newton, it was mainly because they were acted upon by a network of invisible *external* forces which could nevertheless be mapped, measured and harnessed. Observation (3) implies that we need a similar transformation in the way we think about the causes of human behaviour.

5. The network of forces depicted: (a) has the effect of driving attempts to deal with the problems based on single-variable common-sense interventions ever more narrowly, and ineffectively, around the triangle at the top left of the Figure; and (b) diverts attention from the developments, indicated in the bottom part of the Figure, that are so essential to move forward.

6. The *causes* of the symptoms (and thus the appropriate place to start reform) are far removed from those symptoms.

7. The system does not merely reproduce itself – it leads to the production of ever more elaborate versions of itself; it is self-elaborating; autopoietic*.

Social forces

In the foregoing, we have repeatedly used the word 'force'. So now we must consider the nature, or status, of the 'forces' depicted. At the most basic level, Figure 1 is analogous to a map of the interacting gravitational forces controlling the orbits of the planets. But the nature of the social forces involved has yet to be elucidated. What is clear is that the links in the Figure are not flows of, for example, resources as in the models developed by Meadows et al. (2008). Nor are they flows of formal 'information' as in networks of emails. The contents of the boxes are not people or stocks of food or other resources. Only if the feedback loops do really represent *forces* in some sense analogous to the physical forces represented in the diagrams of physics does it make sense to ask how they can be harnessed (as in the forces acting on a sailing boat) or amplified or damped down (as in electrical energy flowing through a radio). In connection with the question of the objective 'reality' of these forces, we may note that, just as one can 'feel' the force of gravity acting on an object held at arm's length or the force of an electric current passing though that same arm, so can one 'feel' social pressures.

Socio-cybernetics

It is useful here to introduce the term 'socio-cybernetics'. Cybernetics involves the study of guidance and control systems in animals and machines. One has to mention animals, otherwise people think only of man-made systems, like missiles. But as soon as one includes animals in the definition it is clear that cybernetics is concerned with under-

---

* i.e. In some sense self-organising, self-reproducing, and self-extending. The problem with the word 'self-organising' on its own is that it is frequently taken to absolve the user from the need to explain how the self-organising process works. What we have seen here is that the 'self-organising' processes of the educational system involve a whole series of mutually reinforcing and recursive feedback loops both within the educational system and in relation to the wider society.

standing guidance systems which depend on multiple, non-hierarchical, feedback loops. So socio-cybernetics is concerned with understanding the social forces which control the behaviour of people in society (and regularly undermine well intentioned social action) and designing better socio-cybernetic guidance systems for the management of society.

Common-sense-based intervention in complex cybernetic systems has counterintuitive and usually counterproductive results

Here we go on what may initially seem to be a digression.

We have mentioned that common-sense based, single-variable, interventions in cybernetic systems tend to have counterintuitive and usually counterproductive effects.

A number of dramatic illustrations of concern to us all can be found in Forrester (1971). Forrester mapped and weighted the (often recursive) linkages (feedback loops) between the main economic and bio-physical resource variables contributing to such things as world population, pollution, per capita food supply, and quality of life[23].

Unlike the normal, and incomplete, mental maps we all carry around in our heads, and are used as a basis for most government planning, each assumption built into his model is explicit and can be subjected to scrutiny – and, in the Meadows et al. (2008) downloadable version, changed at will.

The main difference from our map of the forces controlling the direction of development of the educational system is that it was possible to quantify the inputs and outcomes using standard economic and consumption indices.

Forrester's paper includes several graphics showing the, generally counterintuitive, effects of changing some of the assumptions fed into the network[24]. Many are frightening indeed. In this way they illustrate the importance of studying systems *qua* systems.

One graphic shows that, if things are left pretty much as they are, industrialisation will eventually be suppressed by falling natural resources. According to the model, quality of life peaked in the 1950s and by 2020 will have fallen far enough to halt further rise in population. Declining resources, and the consequent fall in capital investment, will then exert further pressure which will gradually reduce world population.

But if science and technology enable us to find ways to avoid resource depletion, the results are not at all what one might expect.

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. In this case, population, which peaks in 2030, declines by 83 per cent within 20 years. Forrester notes that this would be a disaster of unprecedented proportions.

Generalising: What we see here is a dramatic illustration of the common experience that common-sense based interventions aimed at fixing one problem within a poorly understood system create unexpected problems somewhere else in the system[25].

Implications for socio-cybernetics

Yet, impressive and illuminating though Forrester's and Meadows' reports are, we come up against a brick wall. For the authors then say that we 'lack the political will' to implement the solutions to which their analyses point.

Think about that! One of the things it indicates is that they have been unable to map and analyse networks of *social* forces like those which control the operation of the educational system: We are able to produce systemogrammes like those shown in Figure 1[26] but it is not possible to assess and weight the relative importance of the feedback loops and thus assess the probable effects of any proposed intervention. The task of finding ways of moving forward is down to socio-cybernetricians, sociologists, psychologists, and others.

But several things *are* now clear. One is that, if one is to intervene effectively in socio-cybernetic systems, we need some basic understanding of the system we are dealing with. And then we need to make numerous, *systems-oriented*, interventions.

Paradoxically, generating an understanding of a system depends on diffuse experimentation *coupled with comprehensive evaluation and a deliberate effort to elucidate the implications of the intended and unintended outcomes for our understandings the operation of the system.*

The way forward
In developing our map of some of the systems processes which control the operation of the so-called 'educational' system, we have used psychological data to illuminate a hidden network of social forces which overwhelmingly determines our behaviour and our theories. Many will claim that, as psychologists, we should not have done this or that we have 'gone way beyond our data' in doing so. Yet, if we, as psychologists, wish to claim either to be serious students of the determinants of behaviour or that we aspire to apply science to benefit society, there is no doubt that we need to take the study of such forces seriously.

But clearly we will not engage with this task if we continue to work within current images and definitions of our role. We need to actively articulate and promote a new image of ourselves and the role we can play in society. To put this another way, if we are to ferment the paradigm shifts that are required, or if we are to contribute as we would like to society, it is crucial for psychologists, *as part of our professional responsibilities*, to seek to understand, and find ways of intervening in, the omnipresent social forces which we have now seen control so much of our behaviour. Yet few of those who have noted the need for a sea-change in thinking about the nature, development and assessment of competence believe it is part of their job to try to bring it about, still less to intervene in the network of social forces we have described.

Designing a better public management system
How then to design a better guidance and control system for the management of the educational system and society more generally? There are many examples of more effective organisational arrangements to be found in research into individual organisations[27].

Bookchin[28] has drawn attention to something that seems to be common to these exemplars by describing them as moves toward 'organic' structures. He observes that many preliterate societies had/have *organic* management structures. In using this term he seeks to highlight the fact that the functioning of organisms is dependent on multiple, mostly non-hierarchical, feedback processes. Most bodily functions … such as the maintenance of body temperature … are dependent on multiple feedback processes the majority of which do not pass through the central nervous system. This is especially true in the course of organic development. The organ a cell will become and the function it will perform is determined by information somehow transmitted from both local and distal cells in the developing embryo. (It is not mainly determined by the genes in the way most people, steeped in hierarchical thinking, expect.) If the development of the embryo is somehow interfered with, the function a cell originally 'directed' to some destination will perform can change so that the organism as a whole can function in the normal way.

Bookchin argues that so it is with preliterate societies. Many have no chief, no hierarchy, no formalised religion, no government structure (at least in the sense in which we understand the term). And the activities undertaken by individuals within them change depending on the needs of the whole.

What emerges from many of the studies of modern organisations alluded to earlier is that organisations benefit greatly if they can move toward such organic structures.

As Bookchin shows, the observation that centralised command-and-control structures run into serious problems (including

destruction of their ecological niches) and generally fail to deliver high quality of life for most of those who participate in them has been made repeatedly and forcefully over endless millennia. Likewise, there have been endless demonstrations of the viability and success of alternatives. But the trend toward centralisation and command and control proceeds seemingly inexorably.

The wider context: The destruction of life on Earth

There is not space in this paper to develop in any detail the claim that the autopoietic system controlling the operation and development of the educational system that we mapped earlier is part of a wider autopoietic system controlling the operation of society. Nor can I here fully support my claim that these processes are heading our species toward extinction carrying at least a large proportion of all known life with us[29].

Nevertheless, the matter cannot be allowed to pass without comment. It is now widely recognised[30] that we, as a species, are heading toward extinction. The most striking summarising statement is that of Wackernagel and Rees (1996) who have shown that it would require five back-up planets engaged in nothing but agriculture for everyone alive today to live as Americans do.

There is a strong tendency to attribute this self-inflicted plunge of homo-sapiens toward extinction – despite widespread recognition of the need to radically change the way we live – to the doings of evil capitalists. Yet our work on the educational system shows that the process has too many components to support the view that it has been designed by an elite. What is most striking is that the educational system has evolved further and further along its current trajectory despite endless evidence that the vast majority of pupils, parents, teachers, ex-pupils, and employers want it to move in exactly the opposite direction and despite the existence of a number of alternatives.

Bookchin (2005) has developed the thesis, amply supported by historical and anthropological data, that our plunge toward self destruction as a species has mainly been brought about by the creation of endless work which, contrary to what the conventional wisdom would have us believe, contributes little to quality of life[31]. He argues, convincingly, that the main function of this work is to legitimise, even constitute, hierarchy. The function of hierarchy is sinister indeed. It is to compel most people, often against their will, to engage in the aforesaid work. The process has continued inexorably over thousands of years despite the protests of endless thoughtful people and experimental demonstrations of the viability of alternatives. This, of course, parallels our own observations about the so-called 'educational' system. Nothing could be more serious. It is this endless senseless work that is consuming exponentially increasing quantities of the resources of the planet and destroying the soils, seas, and atmosphere in such a way that the end result will almost certainly be destruction of the planet as we know it. It would, therefore, seem that developing an understanding of, and finding ways of intervening in, this network of forces would be of even greater value than might be guessed from an examination of the educational system alone.

Seen in this light, the educational system's exponentially accelerating quest for processes and procedures which render the diversity of talent invisible and instead create and, in a recursive way legitimise, a single-value concept of 'ability' (which is not even correctly described as intellectual or academic) is to be viewed as but one component in a network that promotes the legitimisation and cementation of hierarchy.

Turning psychology inside out

At this point we may draw attention to a, somewhat paradoxical, but strikingly fundamental, thought that seems to have emerged in our discussion. This is that what we have said essentially involves turning psychology inside out. It means de-animating human behaviour in the way Newton de-animated

the behaviour of moving objects. It means attributing much of what we and others do to the invisible social forces that act upon us. Of course, that is an over-statement because we have spoken of the role of these forces in selecting and promoting certain sorts of people. Nevertheless there is something of an irony in suggesting that the way forward involves promoting the use of psychology to de-psychologise explanations of human behaviour.

And so to recap … Early on in the development of our research – although only briefly touched on here – it became clear that we need a new framework, or paradigm, to guide our thinking about competence and its development and assessment. But study of why the educational system has not in the past operated in a more professional way has highlighted a more fundamental problem. This is that the behaviour of both our institutions as wholes and individuals within them is primarily determined by networks of mutually supportive and recursive *external* forces. This observation in turn affects our understanding of competence because it thus emerges that our competence is centrally dependent on understanding and harnessing these forces. More than that, it means that, if we, as psychologists, are to claim special expertise in the area of understanding and predicting human behaviour we have to de-animate psychology: to turn it inside out. This is not to say that we should neglect individual psychology any more than the discovery of the laws of motion mean that we should ignore study of the differences between different species of bird. But what it does mean is that, as professionals, it is incumbent on us to press for study of these forces. If we are to do these things we will need to press, not only for the development of new technico-rational knowledge but, more basically, for a move away from our current enthrallment with positivistic, reductionist, science. And, if we are to do any of these things, we will need to reconsider what it means to be a professional; what professional competence involves.

Summary and conclusions

Psychologists have failed to contribute adequately to our understandings of:

- The nature and varieties of competence, and especially professional competence.
- Ways in which the components of competence can be nurtured.
- The procedures to be adopted to assess the varieties of competence.
- The barriers which deflect educational institutions from their goals.
- The arrangements required to run public sector activities (e.g. the educational system) effectively.
- The dangers inherent in reductionist science, especially as they express themselves in evaluations of individuals, educational and social processes, and interventions in ecological processes.
- The changes that need to be introduced into evaluations of research proposals and the products of research if we are to move away from positivistic, reductionist, science.
- The socio-cybernetic processes which control the operation of, and generally undermine, well intentioned public policy.
- The societal management (socio-cybernetic, governance) arrangements which are required to create an innovative society which will operate in the long-term public interest.
- The external socio-cybernetic forces which primarily control the operation of society and the behaviour of individuals within it.
- The implications of all these things for our understanding of *professional* competence and the arrangements needed to promote its development.

A more specific oversight has been their failure to develop the tools that are needed to assist in the recognition, development, assessment, and release of competence.

All of these represent professional oversights (sins of omission) that have serious deleterious consequences for individuals, human society, and the future of our species

and the planet. They point to glaring professional incompetence and a gross neglect of ethical issues[32]. Coming to terms with them requires us to release ethically-oriented professional activity at every level from developing new conceptual frameworks and technical methods to intervention in societal processes. These outcomes will not be achieved via regulations requiring psychologists to engage in more techno-rationally oriented 'continuing professional development' activities. They could be achieved by deliberately establishing more 'parallel organisation activity'* throughout the profession. This would mean, through our professional organisations, insisting that time and resources be set aside for activities likely to promote innovation. Such 'parallel organisation activity' might include encouragement to set up fluid 'task groups' in which efforts would be made to draw on talents that are not listed in people's job descriptions, around initially barely recognised emergent problems. It would mean making arrangements to hold people accountable for having followed procedures that are likely to result in innovation rather than for such things as conforming to official regulations. It might involve making arrangements to recognise the contributions people have made to the development of their profession (as distinct from requiring them to keep a record of such things as certificates obtained or courses attended).

More specifically, it would be desirable for both individual members of the Section and the Section Committee to seek to influence:

- The way the British Psychological Society thinks about such things as 'Continuing Professional Development'.
- The kinds of issue with which the British Psychological Society's ethics committee tends to be preoccupied and specifically to pay more attention to sins of omission: *failure* to engage with wider issues nominally outwith our domain of professional competence.

- The way the British Psychological Society thinks about, and seeks to delimit, 'professional' behaviour.
- The criteria to be applied by journal editors for acceptance or rejection of journal articles: specifically a move toward encouraging more illuminating, adventurous, problem-driven, rather than literature-driven, articles. (This will normally involve reconsidering the peer-review process.)
- The ethical issues that arise in connection with the acceptance of research grants which preclude the researchers from looking at issues outside their brief.
- General beliefs about the way research should be organised and evaluated.
- The criteria and processes involved in RAE exercises.
- The criteria to be applied when evaluating the performance of heads of departments – have they, for example, managed to create climates of enthusiasm and innovation; have they sought to establish procedures which will promote the growth of student competence and adventurous research.
- The procedures and criteria employed by OFSTED.
- Publicising the problems associated with 'single-factor' models of 'ability' and the way they support hierarchy.
- A more specific activity would be to challenge the claims made by many of those who purport to have conducted studies supporting 'evidence based policy' but who have failed to take account of the serious errors introduced by failing to come to terms with such things as the diversity of outcomes.

Correspondence
John Raven
30 Great King Street,
Edinburgh, EH3 6QH.
Email: jraven@ednet.co.uk

---

* Refer to Kanter endnote 21.

References

Andersson, B-E. (2001a). *Blow up the school!* Paper presented at the NFPF conference in Stockholm, 15–17 March.

Andersson, B-E. (2001b). *School is good for many, but bad for too many. Voices from students about their school situation. Mimeographed paper.* Stockholm: Institute of Education, Department of Child and Youth Studies.

Bachman, J.G., O'Malley, P.M. & Johnston, J. (1978). *Adolescence to adulthood: Change and stability in the lives of young men.* Ann Arbor, MI: Institute for Social Research.

Bill, J.M., Trew, C.J. & Wilson, J.A. (1974). *Early leaving in Northern Ireland.* Belfast: Northern Ireland Council for Educational Research.

Bookchin, M. (1991/2005). *The ecology of freedom: The emergence and dissolution of hierarchy.* Oakland, CA: AK Press.

De Landsheere, V. (1977). On defining educational objectives. *Evaluation in Education, 1*(2), 73–190.

Deming, W.E. (1980). The statistical control of quality. *Quality,* February, 38–41 and March, 34–36.

Department of Education and Science (1989). *National Curriculum: From Policy to Practice.* London: HMSO.

Dewey, J. (1899). *The school and society.* Chicago: University of Chicago Press.

Eraut, M. (1994). *Developing professional knowledge and competence.* London: The Falmer Press.

Erdal, D. (2008). *Local heroes – How Loch Fyne Oysters embraced employee ownership and business success.* London: Viking.

Flanagan, J.C. (1978). *Perspectives on improving education from a study of 10,000 30-year-olds.* New York: Praeger Publishers.

Flanagan, J.C. & Russ-Eft, D. (1975). *An empirical study to aid in formulating educational goals.* Palo Alto, CA: American Institutes for Research.

Flynn, J.R. (2000). *How to defend humane ideals.* Nebraska: University of Nebraska Press.

Forrester, J.W. (1971). *World dynamics.* Waltham MA: Pegasus Communications. (2nd edition, 1973, has an added chapter on physical vs. social limits.)

Fraley, A. (1981). *Schooling and innovation: The rhetoric and the reality.* New York: Tyler Gibson.

Galton, M., Simon, B. & Croll, P. (1980). *Inside the primary classroom.* London: Routledge & Kegan Paul.

Goodlad, J. (1983). *A place called school.* New York: McGraw Hill.

Gow, L. & McPherson, A. (Eds.) (1980). *Tell them from me: Scottish school leavers write about school and life afterwards.* Aberdeen: University Press.

Gray, J. et al. (1983). *Reconstructions of secondary education: Theory, myth and practice since the Second World War.* London: Routledge & Kegan Paul.

HMI (Scotland). (1980). *Learning and teaching in Primary 4 and Primary 7.* Edinburgh: HMSO.

Johnson, H.T. & Broms, A. (2000). *Profit beyond measure.* New York: Free Press.

Johnston, L.D. (1973). *The American High School: Its social system and effects.* Ann Arbor, MI: Institute for Social Research.

Johnston, L.D. & Bachman, J.G. (1976). Educational institutions. In J.F. Adams (Ed.), *Understanding adolescence* (3rd ed., pp.290–315). Boston, MA: Allyn & Bacon.

Kanter, R.M. (1985). *The change masters: Corporate entrepreneurs at work.* Hemel Hempstead: Unwin Paperbacks.

Kazdin, A.E. (2006). Arbitrary metrics: Implications for identifying evidence-based treatments. *American Psychologist, 61,* 42–49.

Kilpatrick, W.H. (1918). The Project Method. *Teachers College Record, 19,* 319–335.

Klemp, G.O., Munger, M.T. & Spencer, L.M. (1977). *An analysis of leadership and management competencies of commissioned and non-commissioned naval officers in the Pacific and Atlantic fleets.* Boston, MA: McBer.

Kohn, M.L. (1969/77). *Class and conformity: A study in values* (2nd ed.). Chicago: Chicago University Press.

Lane, R.E. (1991). *The market experience.* New York: Cambridge University Press.

MacBeath, J., Mearns, D., Thomson, B. & How, S. (1981). *Social education: The Scottish approach.* Glasgow: Jordanhill College of Education.

Marks, N., Simms, A., Thompson, S. & Abdallah, S. (2006). *The (Un)happy Planet Index: An index of human well-being and environmental impact.* London: New Economics Foundation. Downloadable from: www.neweconomics.org and www.happyplanetindex.org

Meadows, D.H., Meadows, D. & Behrens, W.W. (1972). *The limits to growth: A report for the Club of Rome's Project on the Predicament of Mankind.* London: Macmillan.

Meadows, D.H., Meadows, D. & Randers, J. (2004). *The limits to growth: The 30-year update.* London: Earthscan Ltd.

Meadows, D.H., Meadows, D.L. & Randers, J. (2008). www.Vensim\models\sample\WRLD3–O03\World 3_03_Scenarios.wmfView

Mill, J.S. (1859/1962). *Representative government.* London: Dent.

Morgan, G. (1986). *Images of organisation.* Beverly Hills, CA: Sage.

Morton-Williams, R., Finch, S., Poll, C., Raven, J., Ritchie, J. & Hobbs, E. (1968). *Schools Council Enquiry One: Young school leavers.* London: HMSO.

Morton-Williams, R., Raven, J. & Ritchie, J. (1971). *Sixth-form teachers and pupils.* London: Schools Council/Books for Schools.

Munn Report (1977). *The structure of the curriculum.* Edinburgh: HMSO.

Parker, F.W. (1894/1969). *Talks on pedagogics.* New York: Arno Press.

Passow, A.H., Noah, H.J., Eckstein, M.A. & Mallea, J.R. (1976). *An empirical study of 21 educational systems.* Stockholm: Almqvist & Wiksell.

Prieler, J. & Raven, J. (2008). Problems in the measurement of change (with particular reference to individual change [gain] scores) and their potential solution using IRT. In J. Raven & J. Raven (Eds.), *Uses and abuses of intelligence: Studies advancing Spearman and Raven's quest for non-arbitrary metrics.* Unionville, New York: Royal Fireworks Press; Edinburgh, Scotland: Competency Motivation Project; Budapest, Hungary: EDGE 2000; Cluj Napoca, Romania: Romanian Psychological Testing Services SRL. (Chapter 7, pp.173–210).

Raven, J. (1977). *Education, values and society: The objectives of education and the nature and development of competence.* Oxford, UK: Oxford Psychologists Press.

Raven, J. (1980). *Parents, teachers and children: An evaluation of an Educational Home Visiting Programme.* Edinburgh: Scottish Council for Research in Education.

Raven, J. (1984/1997). *Competence in modern society: Its identification, development and release.* Unionville, New York: Royal Fireworks Press. www.rfwp.com (First published in 1984 in London, England, by H.K. Lewis.)

Raven, J. (1987). Tell them about teacher training. *Collected Original Resources in Education, 11,* F3, F13.

Raven, J. (1989). Parents, education and schooling. In C. Desforges (Ed.), *British Journal of Educational Psychology, Monograph Series No. 4,* Special Issue on Early Childhood Education (47–67).

Raven, J. (1991). *The tragic illusion: Educational testing.* New York: Trillium Press; Oxford, UK: Oxford Psychologists Press.

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, UK: Oxford Psychologists Press.

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.

Raven, J. (2000). Rethinking democracy. *The Good Society 9*(3), 31–37.

Raven, J. (2008). Intelligence, engineered invisibility, and the destruction of life on Earth. In J. Raven & J. Raven (Eds.), *Uses and abuses of intelligence: Studies advancing Spearman and Raven's quest for non-arbitrary metrics.* Unionville, New York: Royal Fireworks Press; Edinburgh, Scotland: Competency Motivation Project; Budapest, Hungary: EDGE 2000; Cluj Napoca, Romania: Romanian Psychological Testing Services SRL. (Chapter 19, pp.431–471).

Raven, J. (2009). The emergence of hierarchy, domination and centralisation: Reflections on the work of Murray Bookchin. *Journal for Perspectives of Economic, Political, and Social Integration, 14*(1–2), 11–75. Also available at: www.eyeonsociety.co.uk/resources/Bookchin.pdf

Raven, J. (2010). Advancing and defeating the PEGS agenda: Socio-cybernetics and Murray Bookchin. *The Good Society, 19*(2). 79–88.

Raven, J. & Gallon, L. (2010) *Conceptualising, mapping, and measuring social forces.* http://eyeonsociety.co.uk/resources/scio.pdf

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,* 19–60. Many important figures were omitted from this version, so it is better to use: www.eyeonsociety.co.uk/resources/RVNAVSC%20landscape.pdf and the linked figures.

Raven, J. & Stephenson, J. (Eds.) (2001). *Competence in the learning society.* New York: Peter Lang.

Raven, J., Hannon, B., Handy, R., Benson, C. & Henry, E.A. (1975a). *A survey of attitudes of post primary teachers and pupils, Volume 1: Teachers' perceptions of educational objectives and examinations.* Dublin: Irish Association for Curriculum Development.

Raven, J., Hannon, B., Handy, R., Benson, C. & Henry, E.A. (1975b). *A survey of attitudes of post primary teachers and pupils, Volume 2: Pupils' perceptions of educational objectives and their reactions to school and school subjects.* Dublin: Irish Association for Curriculum Development.

Raven, J., Johnstone, J. & Varley, T. (1985). *Opening the primary classroom.* Edinburgh: Scottish Council for Research in Education.

Schon, D. (1971/73). *Beyond the stable state.* London: Penguin.

Schön, D. (1983). *The reflective practitioner.* New York: Basic Books.

Schön, D. (2001). The crisis of professional knowledge and the pursuit of an epistemology of practice (Chapter 13). In J. Raven & J. Stephenson (Eds.), *Competence in the learning society.* New York: Peter Lang.

Semler, R. (2001). *Maverick! The success story behind the world's most unusual workplace.* London: Random House.

Spearman, C. (1926). *Some issues in the theory of **g** (Including the Law of Diminishing Returns).* Addressed to the British Association Section J – Psychology, Southampton, England, 1925. London: Psychological Laboratory, University College: Collected Papers.

Spencer, L.M. & Spencer, S.M. (1993). *Competence at work.* New York: Wiley.

United States Department of Education (1981). *The condition of education.* Washington, DC: National Center for Educational Statistics.

Wackernagel, M. & Rees, W.E. (1996). *Our ecological footprint: Reducing human impact on the Earth.* Philadelphia: New Society Publishers.

Endnotes

1. Schön (1983, 2001)

2. Morton-Williams et al. (1968); Goodlad (1983); Johnston & Bachman (1976); Flanagan & Russ-Eft (1975); Flanagan (1978); De Landsheere (1977); Bill et al. (1974); MacBeath et al. (1981); Raven (1977): Raven, Hannon et al. (1975a, b), Andersson (2001b)

3. Seventy-three per cent of our adolescent pupils said that it was very important for schools to help them to do as well as possible in external examinations, but only 27 per cent that it was important to learn about aspects of subjects not required for examination purposes. These figures compare with 83 per cent who said it was very important for schools to help them 'develop the confidence and initiative required to introduce change'. Their answers to other questions confirm that they correctly recognise that the content they spend so much time studying and on which they are tested is largely a waste of time. I say 'correctly' because such knowledge has a half-life of a year. People forget 50 per cent in one year, 75 per cent in two years, 87.5 per cent in three years and so on. It is also out of date when it is taught and fails to relate to the problems with which pupils will have to engage later in life.

4. See especially Passow et al. (1976) or Munn (1977) for reviews. However, it is significant that such goals have not been stressed in *The Condition of Education* (United States Department of Education, 1981), *No Child Left Behind* (US Government printing office, 2001) or the *UK National Curriculum* (Department of Education and Science, 1989; National Curriculum Council 1990a, b)

5. See, for example, Dewey (1899), Kilpatrick (1918), and Parker (1969)

6. See Raven (1984/97), and Spencer & Spencer (1993) for summaries.

7. Goodlad (1983); HMI (1980); Galton et al. (1980); Raven et al. (1985); Johnston (1973); Johnston & Bachman (1976); Fraley (1981)

8. Morton-Williams et al. (1968); Raven (1977); De Landsheere (1977); Bill et al. (1974); HMI, Scotland (1980); MacBeath et al. (1981); Gray et al. (1983); Gow & McPherson (1980); Andersson (2001a, b)

9. Morton-Williams et al. (1968); Bachman, et al. (1978); Flanagan (1978)

10. See Raven (1994).

11. In fact, as Spearman also noted, psychologists' tendency to reinforce the widespread tendency to think only in terms of a single 'ability' is highly unethical (and thus unprofessional) because, on the one hand, it deprives many people of an opportunity to develop and utilise their talents and, on the other, deprives organisations and society of talents that are vital from the point of view of transforming our way of life and thus surviving as a species.

12. Raven (1980, 1989)

13. Klemp et al. (1977); Raven (1984)

14. Raven et al. (1985)

15. Raven (1977, 1980); Raven et al.(1985); Raven & Stephenson (2001)

16. See Raven et al. (1985) – summarised in Raven (1994) – for an account of how some teachers do these things.

[17] Raven & Stephenson (2001), especially the chapter by Stephenson, Prieler & Raven; and Raven (engineered invisibility); Kazdin (2006).

[18] For elaboraton, see Raven (1995, 2000, 2010).

[19] There is a widespread belief that such problems can be solved by turning management over to 'the market' but, as I have shown in my *New Wealth of Nations* (Raven, 1995) this is at best naieve and usually a devious strategy for centralising control using suitable contrary imagery and ideology.

[20] Mill (1859).

[21] The requisite developments are fully discussed in Chapter 8 of *Managing Education for Effective Schooling* (Raven, 1994) but especial reference should be made to Kanter's (1985) notion of 'parallel organisation activity'. This term implies that such activities do not replace the hierarchical activities of the organisation; rather, they go on alongside – in parallel with – them. However, time and resources are specifically set aside for them and all members of the organisation are involved. During this time, fluid, non-hierarchical, groupings form around emergent and previously half-noticed 'problems'. The members of these groups contribute in many different ways and a deliberate effort is made to recognise these diverse contributions. And staff are encouraged to work with other people engaging with similar problems both within the organisation and outside. Such collaboration generates new ideas and establishes and maintains a network of contacts to provide help and support when difficulties arise.

[22] See Endnote 21.

[23] A simplified form of this map, or model, is available in Raven & Gallon (2010).

[24] These are reproduced in Raven & Gallon (2010).

[25] More examples will be found in Raven & Gallon (2010).

[26] See also Morgan (1986).

[27] For example, those contributed by Schön (1971), Deming (1980), Johnson & Broms (2000), Kohn (1969), Semler (2001) and Erdal (2008)

[28] Bookchin (2005).

[29] Those who are interested in the details may turn to Bookchin (2005) or Raven (2009).

[30] For example, Meadows et al. (1972, 2004); Raven (1995); Wikipedia 'Sustainability' entry.

[31] See also Lane (1991) and Marks et al. (2006).

[32] I would personally argue that ethics is mainly concerned with questions stemming from conflicts between the long-term social consequences of actions and short-term personal gains. Clarification of these issues thus falls within the remit of psychologists involved in evaluation studies. However, Flynn (2000) has provided us with an incredibly thorough treatise reviewing earlier thinking on this topic.