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## **Our Incompetent Society**

(with a discussion of some of the competencies needed to transform it)

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A species heading, at an exponentially increasing rate, toward its own extinction<sup>1</sup> can hardly be regarded as anything but incompetent. Yet this is precisely the situation in which we find ourselves. We are destroying our habitat – and therefore our chances of survival as a species - through the conduct of endless work which either consumes abundant resources or creates products or by-products which inflict endless damage in their production or disposal. Yet that work itself is largely senseless<sup>2</sup> in that it confers few benefits in terms of quality of life. There is ample evidence that long, satisfying, lives can be achieved without current levels of destruction of habitat. It follows that, both paradoxically and ironically, enhancing competence to conduct such destructive work can only be viewed as unethical.

This is not the only evidence of our gross incompetence. We seem utterly unable to fix the gross inadequacies of our so-called “educational” system, our governance system, our banking system, or the gross economic disparities within and between our societies.

My lifetime study of why, and how, the educational system itself contributes to this process - and even to the destruction of competence itself<sup>3</sup> - both contributes to our understanding of what is going on and indicates some of the developments needed to move forward.

### **Competence**

Let me begin to unpack some of the reasons for the state of affairs described above and what might need to be done to move forward.

I begin in an unlikely place: A study of a mixed age (8-11), mixed ability, class<sup>4</sup> conducted some years ago. The pupils were engaged in what was mostly an out-of-school, environmentally-based, educational process. At the time we studied them, their project involved trying to do something about the pollution in the local river. Some were scientist types trying to measure the levels of pollution. Others took the line that everyone already knew the river was polluted and that the problem was to get something done about it. They set about making poster-sized drawings of the dead fish and plants with a view to evoking emotions and action. Others set about generating captions for the posters – again writing in such a way as to evoke emotions which would generate action rather than to meet teacher- or government-generated criteria of “good writing”. Another got engaged in devious strategies to motivate politicians to put pressure on the local environmental standards officer. Others

specialised in soothing the conflicts which developed between the scientist types and artist types. And so on.

Here we have the development of a wide variety of high-level competencies\* the “existence” of each of which depends on tapping each individual’s motives and creating situations in which they could develop and display their idiosyncratic talents and patterns of competence.

But that is not all. Without the context of others engaged in related tasks they could not have developed these competencies. Indeed many of those talents could only *exist* in those contexts. Outwith that context they could not even be said to possess them. They were *emergent* competencies.

Not only that, the class as a whole displayed an emergent property which might be described as “collective intelligence” or “a climate of enterprise”. Note that this emergent competence of the group, *qua* group, did not exist in anyone’s head. Indeed it did not “exist” anywhere. It was a *systems* property. Yet it was a real emergent property just as the properties of copper sulphate are emergent properties distinct from the properties of copper, sulphur, and oxygen. Nevertheless, it was produced by, and reciprocally affected, the emergent individual competencies of the pupils in the group. Note, too, that the *system itself* was able to learn in exactly the same way as individual human beings as organic systems learn.

And, beyond all that, was the *managerial* competence of the teacher<sup>5</sup> to orchestrate this developmental process.

Note the problems which these observations pose for mainstream ways of thinking about, assessing, and nurturing “competence”, not to mention managerial competence.

In fact, schools engaging in activities like those briefly summarised above have been forced to revert to the conventional, destructive, “educational” processes by government-mandated standardised testing and prescriptions about what teachers will do every hour of the day enforced by an army of law enforcement officers (otherwise known as OFSTED inspectors) who have the power to, and from time to time do, drive excellent teachers out of their jobs and close schools<sup>6</sup>. Meantime governments have introduced heavy handed procedures to force children to attend these destructive schools.

In other words, these “quality control” procedures have mandated the nurturance of *incompetence*<sup>7</sup>.

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\* I use the word competencies to refer to emotional predispositions to engage in fairly specific, but complex, activities having cognitive, affective, and conative components in effective ways in a variety of situations. As such they involve much more than cognitive knowledge and mental or sensory-motor skills. Note that even the requisite “knowledge” is largely tacit, consisting of knowledge located in people’s hearts and hands rather than their heads. Such knowledge includes emotionally-based predispositions to react to non-verbal feedback from motor and other actions and from other people’s non-verbal communications. The crucial thing is that components of this feedback are sub-consciously selected and intensively engaged to produce effective action, mental or physical. Personal incompetence rarely arises from a lack of formal knowledge or skills but rather from a failure, usually stemming from a lack of appropriate motivation, to bring to bear such knowledge and skills as are possessed. Other, and much more common, varieties of incompetence can be viewed as failures to display *professional* competence. People are widely deterred from appropriate professional behaviour by legal constraints, limitations in their job descriptions, peer pressure, and the institutional context in which they work. Tackling these constraints calls for levels of competence and commitment going well beyond what most people would regard as the call of duty. Yet, unless they tackle them, they cannot be said to be behaving as professionals. In reality, tackling them often calls for emergent climates of enterprise, otherwise describable as levels of collective intelligence, which few writers have discussed. These issues are discussed more fully in in Appendix A.

### **Professional Incompetence.**

What has the teaching “profession” done about these things - and what action have professional psychologists taken? Very little. This inaction can only be viewed as seriously unethical. But it can also be regarded as evidence of gross incompetence: a gross failure to deliver what these “professionals” profess to offer. They are in part prevented from doing what needs to be done by institutional frameworks and government mandates. Beyond that, they will be taken to task for “rocking the boat” and revealing the incompetence – viz fraudulent nature of - one of the largest organisations in the world (the “educational” system) and fellow “professionals”. But these things are, in reality, no excuse. Why haven’t they got together to change those structures? What competencies would they need to do that? And what experiences would they need to help them develop them?

### **Enter Thanatos.**

But vastly more important from the point of view of understanding the persistence of this ghastly state of affairs than teacher incompetence is the destruction of education by the (sociological) need to apply a simplistic notion of “ability” to legitimise the allocation of position and status in a social hierarchy dedicated, as we have seen, to the execution of endless work that contributes little to quality of life and is environmentally destructive.

### **Other processes driving education out of schools.**

Before we focus more centrally on the role of these sociological processes and the competencies needed to tackle them let us review some of the other processes leading schools to neglect their widely endorsed<sup>8</sup> and empirically validated<sup>9</sup> goal of nurturing high level generic competencies and, in particular, nurturing all pupils’ idiosyncratic talents (and thereby creating the kind of diversity required for evolution). These processes include, but are not limited to, the absence of any agreed conceptual frameworks for thinking about how to nurture and credential diverse high-level talents<sup>10</sup>. As a result pupils cannot get credit for possessing such talents when the time comes to scramble for a job. And teachers cannot get credit for having nurtured them.

Failure to address the linked problems involved in the conceptualisation and assessment of competence has not only driven education out of schools but actually<sup>11</sup> corrupted the very word “competence” itself so that, as used in the educational system, it has come to stand for the very reductionist skills it was selected to help educationists move beyond\*.

But these are not the only processes which help to drive individualised, competency-oriented, education out of schools. For example, there are also huge value conflicts which need to be recognised and handled if a way forward is to be found: As soon as a teacher lets it be known that s/he is going to create a “thinking classroom” in which pupils will be encouraged to ask questions s/he is confronted by parents who say “I don’t want my kid asking any more questions. He asks too many questions already. Your job is to have him sit still, do as he is told, and pass his examinations. What is more, I don’t want you doing that with *his* kids either ... otherwise they will do better in life than mine.”<sup>12 13</sup>

### **Systemic processes.**

All of these processes ... and others ... are important. But what it is most important to underline at this point in this chapter is that these processes do not operate independently but form a self-reinforcing, self-extending, *system*. One cannot change any one part of that system without changing others. Otherwise its effects will either be negated by the reactions

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\* See Appendix A.

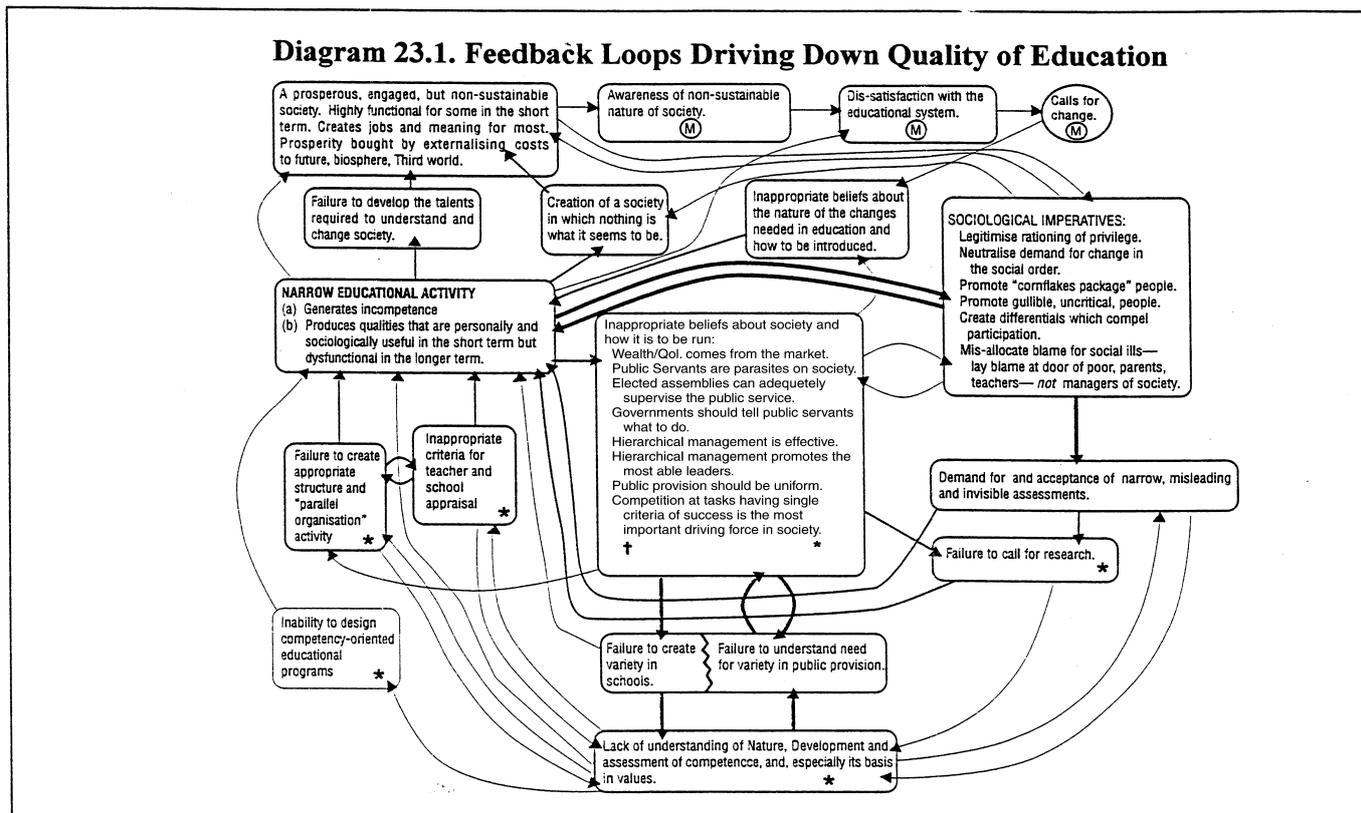
of the rest of the system or have counterintuitive, and usually counterproductive, effects elsewhere in the system.

This process is sketched in the following systemogram\*.

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\* This sketch has been prepared for illustrative purposes only. For a more complete systemogram of the way the educational system works see Raven & Navrotsky (2001).

FIGURE 1 (Previously Diagram 23.1).



\* 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 ways 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.

Several discussions unpacking this diagram and discussing its implications are available elsewhere<sup>14</sup>. Here it is sufficient to draw attention to only a few of them.

First, note how the loop in the top left quadrant drives multiple-talent-based education out of schools.

Assessments (mainly by tests having little content or predictive validity<sup>15</sup>) of the almost pointless course-work-based knowledge\* conveyed in most so-called educational programmes are used to arrange pupils in a seemingly unarguable hierarchy (termed “ability”<sup>16</sup>) which feeds directly into the socio-economic status hierarchy of society. As a side effect, the process produces feelings of “trained incapacity” in many. People come to feel that there is so much to be known that they dare not do anything without more knowledge and further formal training. This is reinforced by widely propagated government mythology ... which appears to have the latent objective of first promoting jobs in the huge number of industries and services associated with “education” and, secondly, keeping youth off the streets. This promotes not only a feeling of incapacity but an actual failure to tackle the problems of modern society. Yet nurturing the capacity to tackle these problems is seen by most parents, pupils, and other

\* Knowledge of content has a half-life of a year. People forget 50% after 1 year, 75% after 2, 82.5% after 3 and so on. The information is out of date when it is taught, forgotten by the time it is needed, and does not relate to people’s subsequent lives and livelihoods.

people as one of the primary objectives of education. Awareness that schools are *not* doing this contributes<sup>17</sup> to demands for change in the system. These are picked up by politicians. But since the governance structure is grounded in Weberian notions of command and control - rather than images of experimentation, evaluation, further experimentation, and evolution<sup>18</sup> - the calls for change emanating from the public result only in politicians issuing more “common-sense” based commands about what teachers shall do ... assessed by more testing. These, of course, recursively exacerbate the problem.

It is worth noting in passing how this loop reinforces the tendency to equate “learning” with verbal knowledge and directs attention away from such things as learning to lead, learning to adventure into the unknown, to put people at ease, to create political turbulence and so on (all of which are among the competencies that can be nurtured via the educational processes briefly described at the beginning of this chapter). In this way, the loop contributes to the process whereby the word “education” itself becomes corrupted away from “drawing out” (pupils’ idiosyncratic talents and competencies) to “putting in”. Away from “facilitating growth” to “teaching as telling”<sup>19</sup>.

Another important insight to be drawn out of the Figure, but which is, in reality, a fundamental conclusion deriving from the study of social systems more generally, is that it does little good to shout at actors within the system ... parents, teachers, politicians ... because their behaviour is primarily determined by the operation of the system itself<sup>20</sup>. By and large, the effects of individual actions or single-factor interventions which are not aligned with the direction in which the system is already moving are negated by the reactions of the rest of the system.

### **Two fundamental insights.**

Despite the importance of the observations made above, two components in the system depicted in the diagram – those represented by the governance and sociological imperatives boxes – need to be singled out for further attention.

#### *Governance.*

One is the inappropriateness of the formal, Weberian, centralised, command and control, governance system currently deployed in an attempt to manage the system.

It follows from what has been said that, to move forward, we need pervasive change in every nook and cranny of the system. We need pervasive experimentation with educational processes. We need to radically change the way we think about assessment ... to move away from thinking in terms of scores on “variables” to something more akin to the descriptive models adopted in eg biology and chemistry (See Appendix C). We need *comprehensive* evaluations of those experiments – evaluations of *all* the short and long term, personal and social, desired and desirable outcomes of those processes<sup>21</sup>. We need to move away from reductionist images of science (generally based in a consideration of only one or two variables at a time) toward what might be termed “ecological” evaluations - evaluations in which it is seen to be more important to get a rough fix on *all* the outcomes of a particular process than to get an accurate fix on any one of them. We need a new interface between the public service and the public including new ways of feeding the results of the comprehensive evaluations sketched above outward to the public so that they can make informed choices between them ... that is to say we need new forms of democracy. We need new ways of holding our public servants\* accountable for performing this newly defined role of nurturing

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\* Note that the reference is to *public servants*. On enquiry (see my *New Wealth of Nations*) it turns out that they are the key actors in the process. There is no way in which politicians with their endless nominal

climates of innovation, experimentation, evaluation, learning, and further experimentation<sup>22</sup>  
23.

So it turns out that a key to developing a competent educational system lies in nurturing the competencies needed to contribute to the evolution of that new governance system<sup>24 25</sup>. The task is of inestimable importance. The problems of which we have spoken are by no means limited to the educational system and virtually all government activity but plague the management of all complex organisations ... such as hospitals and Telecom companies ... never mind the management of health, communication, and financial services more generally. They apply *a fortiori* to the task of creating a society that will have a chance of surviving into the future.

Unfortunately *Figure 1* itself tells us that any non-systems-oriented attempt to nurture the relevant competencies and organisational arrangements will be negated by the reactions of the rest of the system!

Despite this, it is crucial to clarify the nature of the competencies required to bring about the necessary transformation and the processes through which they can be nurtured. A short discussion will be found in Appendix B.

#### *Sociological Imperatives.*

But now we come to the most important part of this chapter.

To open this up, let us return to *Figure 1* and focus on the box labelled “sociological imperatives” on the right hand side.

Although we did not pay sufficient attention to it when we were engaged in the research which led to the Figure, it turns out that this box requires even more attention than the governance box.

We have seen that the sociological need for schools to legitimise, and contribute to, hierarchy is one of the most important processes driving education out of schools.

It is now more than a century since Spearman (1924), the “discoverer” of “General Intelligence”, better termed *g*, noted that neither measures of *g* nor the tests commonly used in schools have any place in those schools because they deflect the attention of teachers, pupils, and politicians from the business of education ... which is to “draw out” all pupil’s diverse talents and abilities.

But, in fact, *g* and the swathe of tests that are associated with it and designated as measures of “scientific”, “mathematical”, “linguistic” and other “abilities” (despite the fact that they have little construct or predictive validity) have, over the intervening century, come to exert more and more control over what happens in schools.

One has to ask “*Why?*” And, as a corollary, how to conceptualise and nurture the competencies ... including emergent group and societal competencies like those mentioned above ... that are required to intervene in the process.

Actually, that’s only one small part of the question.

In what at first seems to be a totally unrelated area –organisational arrangements - one has to ask why all demonstrations of the effectiveness and viability of more “organic” governance/management arrangements – arrangements with multiple, non-hierarchical,

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responsibilities and the limitations in the feedback which can reach them can play an effective role in the process.

feedback loops<sup>26</sup> of the kind which control the functioning of plants and animals and the relationships between them – have, over endless millennia, been eliminated in favour of hierarchical arrangements. This onward march of hierarchy and social division is enforced, indeed constituted in, the recursive creation of endless work. Yet this work is senseless in the sense that it confers few benefits in terms of quality of life and positively destructive in that it inflicts so much destruction of our habitat that it is heading us toward our extinction as a species.

Unless we are able to stop it we will have the most striking possible demonstration of our incompetence as a species.

### *Gaia*

The emergence of the planet as we know it has been brought about by a network of poorly understood organic (multiple feedback based) processes which are commonly described as Gaian. It is this network of processes which has led to the elaboration of life itself. It is a network that is self-organising, self-extending, self-elaborating, self-reproducing, self-*producing*. It is a network of processes which have led to a planet having emergent properties which are not contained in any of its parts. It is, in a word, an autopoietic process.

### *Thanatos*

But our work suggests that this process has been accompanied by an exactly contrary process – an *anti* Gaian process – a death process - a death process which is similarly autopoietic and having its own emergent properties. A death process which eliminates, not only effective education and organic organisational structures, but is about to eliminate even life itself. It might be designated a *Thanatosian* network. *It is a network which has the future of humankind and the planet in its grip.*

### **Competencies needed to stem the advance of Thanatos and harness the social forces which promote it.**

Our questions then become, not only what competencies and organizational arrangements are required to promote the evolution of a more effective ... life enhancing ... organic ... governance system, but, even more basically, what competencies are required to map, measure, intervene in, even harness, this network of Thanatosian processes?

Failure to answer those questions we will expose our gross incompetence in the most striking way possible.

So we need to examine this Thanatosian process and the steps which might be taken to intervene in it in much more detail.

In a book republished in 2005, Bookchin showed that this trend toward hierarchical, command and control, organisation has continued inexorably over many millennia despite the trenchant criticisms and protests of many thoughtful people and, indeed, despite numerous practical demonstrations of the benefits and viability of alternatives.

To clarify what is at the core of this trend Bookchin begins by suggesting that the social organisation of so-called “primitive” societies may be best characterised as “organic”. By this he means to draw attention to the fact that these societies function in a manner analogous to the way in which animal bodies are (internally) organised.

The cells of an organism are differentiated. But that differentiation can also, to a remarkable extent, be changed if the body as a whole requires it. Coordination between the cells is not brought about through a hierarchical structure but through a network of interacting feedback processes. The behaviour of the cells is not mainly determined by their chromosomes but by

all sorts of inter-related, local and distal, internal and external processes and the role they (the cells) play in the (developing) organism.

However, it would appear that, at every stage in societal “development” from time immemorial (and not just over recent millennia), this organic, network-based, social structure has been replaced by increasingly hierarchical arrangements. The legitimisation and maintenance of these hierarchical structures is dependent on the continuous creation of more and more work which, despite a mythology asserting the opposite, contributes little to quality of life. It is this – largely senseless – work that contributes most to the destruction of our habitat.

This senseless work has not merely been created to occupy the idle hands that might otherwise have done the devil’s work or as a means whereby elites can exert control over the masses. It, like the so-called educational system, has seemingly been produced as part of a sui-generous mechanism for compelling people to participate in the destructive process.

Why is it that this destructive process has developed so inexorably in the same direction?

Bookchin himself proceeds, after the manner of Braudel<sup>27</sup>, to identify the specific constellation of factors which were operative at each “choice point” in history. But this, in itself, fails to account for the amazing continuity in the direction of (un)development.

Bookchin attributes this to a “self-organising” process. This is OK ... but it hardly constitutes an adequate explanation, particularly as Gaia itself is an outcome of such a process.

To underline the paradox that this presents further, let me repeat something said a few paragraphs earlier: *The network of feedback loops – the autopoietic system – heading us to extinction itself has many of the features of the organic in that it continually reproduces and extends itself.*

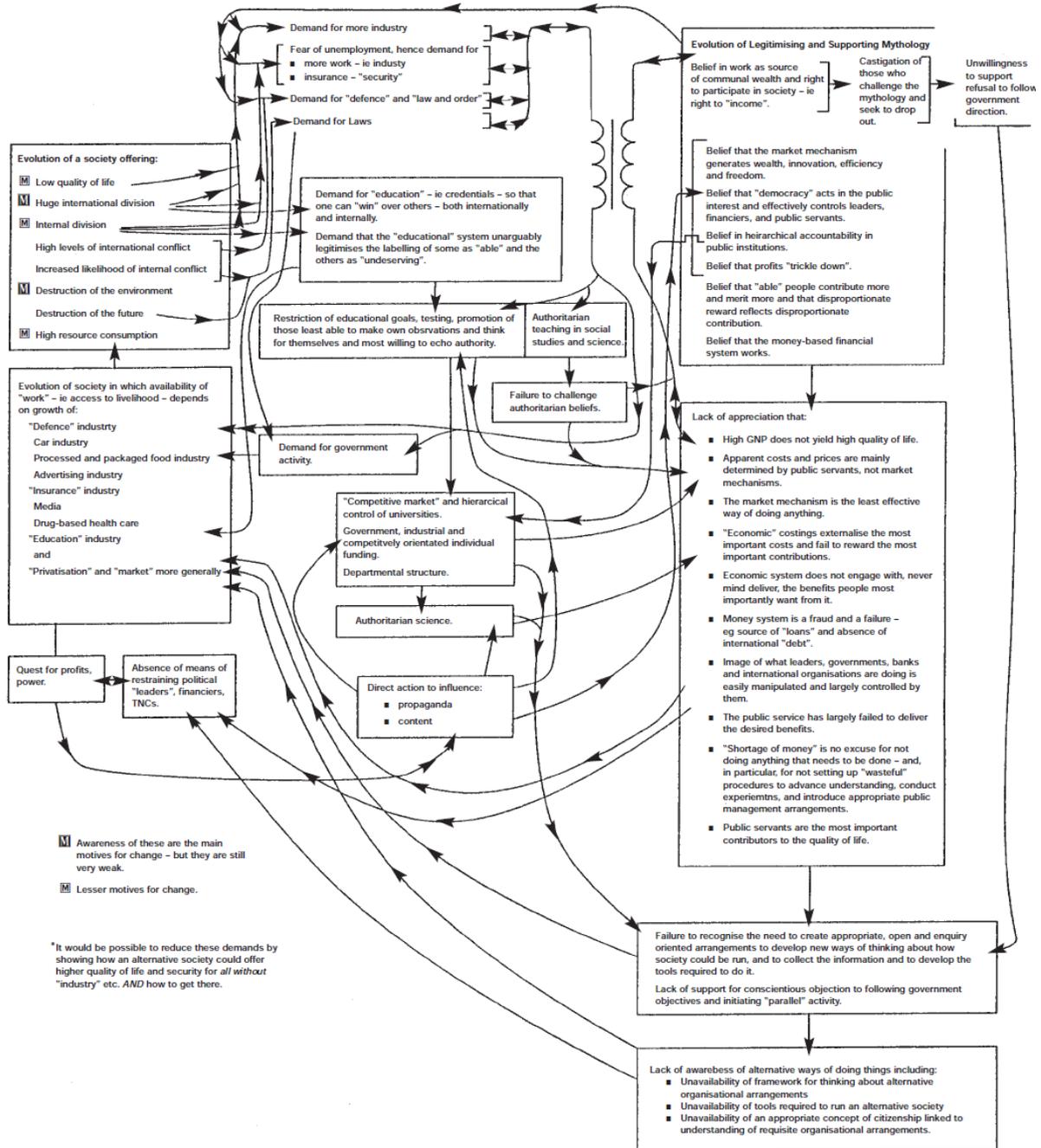
So, paradoxically and ironically, it now seems that it is an inexorable *organic* process which is driving us *away* from organic social organisation toward the hierarchical arrangements that are going to be our undoing.

Starting from the material indexed in the right hand box in *Figure 1* – the box that is labelled *Sociological Imperatives* – we generated a tentative causal loop diagram (aka systemogram) of the network of social forces and feedback loops which appear to be perpetuating and extending what we would now call the Thanatosian process in modern society. This is reproduced in *Figure 2*.

Figure 2 (Previously Diagram 20.6)

Diagram 20.6

Feedback loops perpetuating non-sustainable society



Version date: 8 September 2004. John Doctemp/Jean ODDMENTS file: FLPNS.\*\*\*

An enlargeable version of this diagram is available at: <http://www.eyesociety.co.uk/resources/diagram%2020.6.pdf>

Although, from our present vantage point, it is clear that Figure 2 is pitched at the wrong level, it is vital, if we are to stem the Thanatosian processes which drive education out of

schools and destroy attempts to promote more organic governance arrangements, to undertake the Herculean\* task of translating this and related systemograms into socio-cybernetic diagrams analogous to the diagrams (or dynamic systems models) of the cybernetic (multiple feedback based governance) systems which control the operation of computers, the functioning of animals, and the movements of the planets<sup>28</sup>.

What are the competencies required not only to generate more complete maps of the processes which constitute Thanatos but also to both generate the institutional arrangements and competencies required to enable such research to be conducted and generate the governance systems required to facilitate experimentation, comprehensive evaluation, and further experimentation based on those evaluations?

### **Competencies required for social transformation and evolution.**

Actually a whole host of mutually supportive competencies are required to create the necessary climate of innovation or collective intelligence needed to move forward. It is true that the basic task of conceptualising and mapping *social* forces is in some ways analogous to that undertaken by Newton in connection with physical forces. This involved conceptualising, and finding ways of measuring, physical force and then showing how the, at the time inconceivable, invisible gravitational forces operative between the planets controlled their orbits. But a vast range of people doing different things was required to translate these observations into, for example, networks of safe sailing boats that could sail into the wind instead of merely running before it. It was necessary to have some people who could understand how to harness the (apparently absurd) equal and opposite reaction of the sea to the wind by putting a keel on their sailing boats. It was necessary to have people who knew the properties of wood and steel and could construct boats that could withstand the strains. It was necessary to have people who not only could, but were strongly motivated, to make charts of hidden rocks and safe harbours. And so on and so on.

The point is that it was necessary to have a host of people with different talents and competencies to do different things. It was necessary to have what David McClelland termed an *achieving society*<sup>29</sup>. This brings us back to the question of governance or, more precisely, designing and evolving a more appropriate sociocybernetically<sup>†</sup>-based governance *system*.

At this point it is useful to embark on brief discussion of a fundamental flaw in the so-called “Club of Rome” report *Limits to Growth*<sup>30</sup>.

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\* The task is of similar magnitude to that which Newton undertook by conceptualising the invisible forces that control the operation of sailing boats and the planets and showing how they could be mapped, measured, and harnessed. (See Raven & Gallon [http://www.eyesociety.co.uk/resources/scio\\_unpublished.pdf](http://www.eyesociety.co.uk/resources/scio_unpublished.pdf) for a fuller discussion.)

† Sociocybernetics. Cybernetics is the study and design of governance systems in animals and machines. One has to mention the animals to highlight that we are not necessarily talking about man-made systems or hierarchical governance. So *sociocybernetics* becomes the study of the largely invisible guidance and control systems that control the operation of society ... and the design of better ones.

The authors – and more specifically Forrester (1971) - produced the Dynamic Systems Model of the bio-economic processes destroying the biosphere shown in Figure 3\*.

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\* Readers may find it helpful to know that a standard convention for representation of the symbols in this and subsequent figures seems to be emerging.

A **circle** is a representation of an amplifier/signal damper (AKA “Converter”) [I am not entirely sure how this differs from a valve] but in some cases it seems to be used as a representation of a dial; a meter: a measure of current *rate of flow*/strength of signal.

A **rectangle** is a representation of a ***cumulative level*** (often referred to as “stock”) that has been built up over time: eg extent of environmental degradation or innovative capacity of a workforce or society. Such stocks or cumulative levels may be increased or diminished via an inflow or outflow.

A **double sided arrow** >< is a flow (signal) control mechanism (AKA a “valve”). The flow in question should have a name and the exogenous and endogenous variables which determine the setting of the control mechanism are indicated by the arrows entering the triangles from either side. (Actually, I am not sure why the arrows can enter from either side.)

Endogenous variables are those entering from other parts of the system map and determined by whatever happens in the system ... which may itself be influenced by exogenous variables at some other control valve indicated in the system.

Exogenous variables are those not documented in the system diagram ... and may include such things as legal arrangements.

A **cloud** or **turbine** represents some kind of exogenous input not documented on the diagram or some kind of output with which those drawing the map are not concerned at the present time.

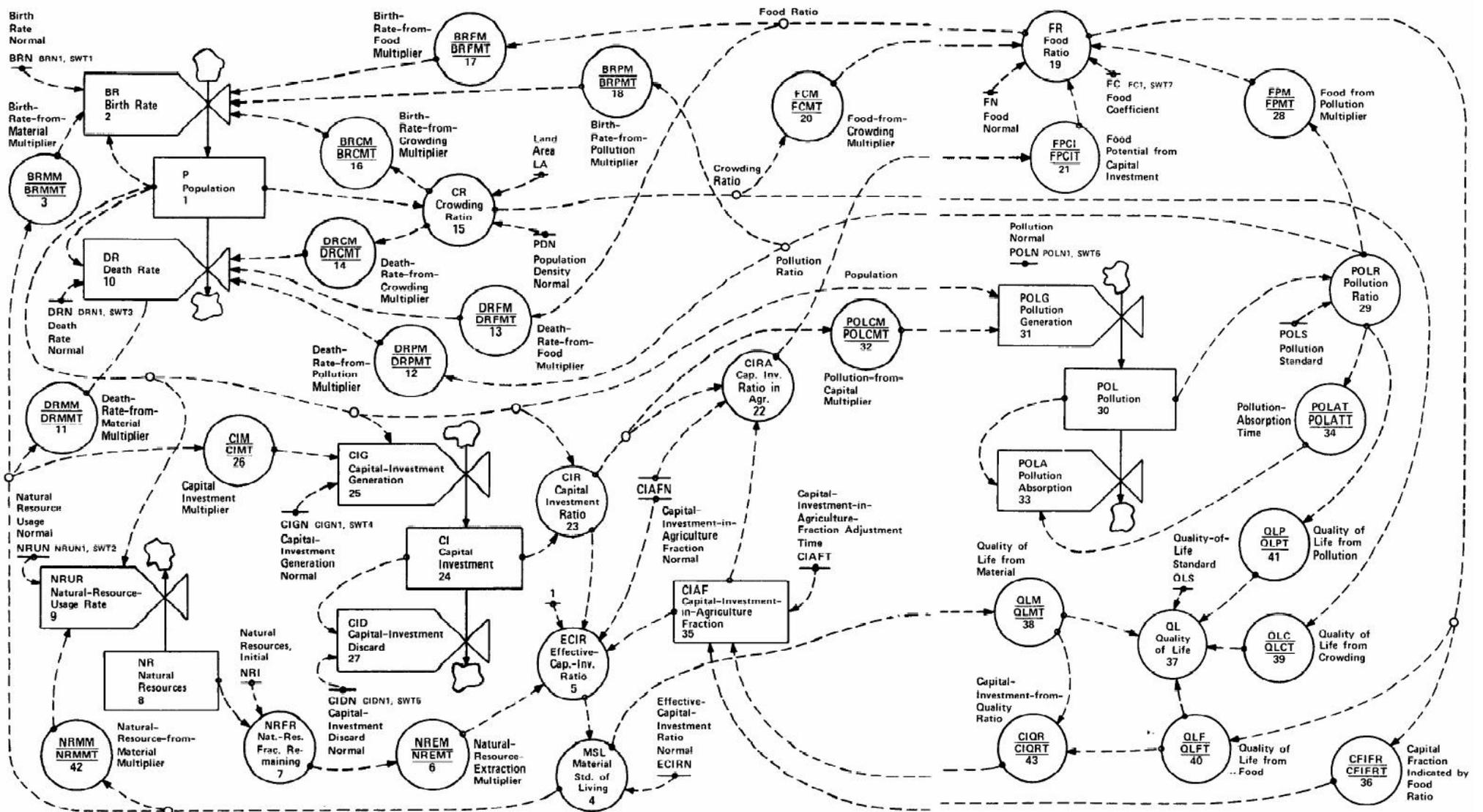


Fig. 3 Simplified World Model Forrester constructed to analyse the effects of changing population and economic growth over the next 50 years. The model includes interrelationships of population, capital investment, natural resources, pollution, and agriculture and background variables which influence, and are influenced, by them.\*

\* As an aside, it is possible to see in real time the effects of any intervention that it may be proposed to make in the above "Club of Rome" network by going to [www.Vensim\models\sample\WRLD3-003\World3\\_03\\_Scenarios.wmfView](http://www.Vensim\models\sample\WRLD3-003\World3_03_Scenarios.wmfView). Unfortunately, this link does not always seem to work. If it fails, it is necessary to go to the basic link and work through the network of options. The online, interactive, version of the model is there!

## **Limits to *Limits to Growth***

The problem with this map is its *failure to identify, incorporate, and portray the networks of social forces* with which we have been concerned in this chapter and the endless ways in which they interact with the bio-economic processes that are depicted and determine the operation of the system. It is therefore impossible to see how best to intervene in the network.

The authors of *Limits to Growth* say that we “lack the political will” to enact the policies to which their study of consequences of various alternatives point.

This statement implicitly assumes that someone ... some authority ... will implement their recommendations. In other words it is assumed that the way forward is via the very hierarchical command and control based interventions that are a major source of the problem! No central group could possibly envisage all the actions and experiments that are needed ... still less monitor the effects of those actions and follow through with further (corrective?) action. It is a little surprising that the authors of *Limits to Growth* have fallen into this trap since another key observation derived from the study of social systems is that single factor interventions rarely produce the desired results. Effective intervention requires multiple *systems-oriented* interventions targeted at dysfunctional feedback loops within the system.

A perhaps more appropriate image of the way forward is available in the *Evolutionary Learning Laboratories* developed by Bosch and his colleagues<sup>31</sup>. These not only bring together local community members and personnel from local and central governments but lead those participants to generate comprehensive maps (systemograms) of the social forces involved and their interactions and consequences and then weight the strength of those various feedback loops as in the Forrester diagram reproduced above. (Despite all this, I am not at all sure that they have not fallen into the *Limits to Growth* trap of seeking to deal with the problems they identify by having government agencies introduce *regulations*.)

And so we come round in a circle: The forces of Thanatos constrain the development of more appropriate governance arrangements and the absence of appropriate governance arrangements deflect us from the study of Thanatos.

The need for a new image, or vision, to guide the development of more appropriate public management arrangements could not be more apparent.

## **Moving Forward**

At this point, let me first replay what I think I am saying.

If we are to harness the forces and processes that are about to destroy us as a species and thus render our gross incompetence glaringly obvious – ie the forces and processes which constitute Thanatos - and deploy them to our own ends we need several research teams striving to map those processes but each elaborating different perspectives.

Developing a satisfactory map of those processes involves scientific activities based on a notion every bit as crazy as the notion that the movement of the planets is controlled by a network of invisible interplanetary forces which operate between them.

So what needs to be done to bring the necessary network of crazy scientific projects into being? Certainly it involves widespread change in (i) images of science itself, (ii) the ways in which the generation of scientific knowledge is to be organised and funded<sup>32</sup>, and (iii) the nature and diversity of the competencies required in the process.

Interestingly, one can imagine this new understanding emerging from more widespread involvement in the kind of project work described at the beginning of this article. Advancing

understanding certainly requires a wide range of people possessing very different talents and working in a series of different climates of emergent intelligence.

In short, the places to start are neither common-sense nor obvious.

Creating and implementing new images of governance would require even more people working within a pervasive climate of “can do” and innovation.

However here we encounter a fundamental problem arising from current images of governance. Few people have difficulty accepting the idea that the networks of non-hierarchical feedback loops which govern the growth and functioning of organisms could be described as their cybernetic systems. But most have much more difficulty with the same idea when the word “governance” is substituted for “cybernetic”. But it means the same thing. The result is that most people would have the greatest difficulty accepting that a *sociocybernetic* system which did not have a central control point could nevertheless be a highly effective governance system. Getting such a notion accepted has been the most fundamental problem that both anarchism on the one hand and Adam Smith<sup>33</sup> on the other have had to face over the years. That a more effective self-organising, self-managing, governance system might grow organically from multiple *system-oriented* social interventions as in the Spanish 15M movement<sup>34</sup> is more or less unthinkable. The key lies in the words “system-oriented”. As Forrester (1971) illustrates so dramatically, common-sense based intervention in poorly understood systems almost invariably has counterintuitive, and usually counterproductive, effects. Indeed, they usually have the opposite effect to that intended before they are neutralised by the operation of the rest of the system. The key to moving forward thus lies in the study of the socio-cybernetic mechanisms which control the operation of society

#### *To Do List*

As I have lectured and written on these topics over the past 25 years, I have repeatedly been asked “But what can *I* do to promote these developments?”

Actually, it follows from what has been said that there are endless things that need to be done to help us to move toward a more sustainable society and progress the essential research on the operation and modification of the sociocybernetic system which has our future as a species and that of our planet in its grip. But, because most of them are not immediately obvious, I have been asked to spell them out. Although I have done this elsewhere<sup>35</sup> I am reluctant to do so here because so many of them follow directly from the observations we have made.

Here is an example. We have seen that, to move forward, we need a paradigm shift as profound as that which Newton introduced into physics – that is, we need new ways of thinking about, mapping, measuring, and harnessing social forces. Now, most of us are well aware that we are not geniuses of the stature of Newton. So the observation paralyses us: We think we need a champion, but do not know where to find “him”. But it should not. For what it means is that we have to press for a vision of research and research arrangements which will facilitate the emergence of such a transformation in thinking. What is more, those arrangements are also required to conduct the huge range of lesser research projects that we have seen to be so important. So there are hundreds of things we can do. We can press for a change in the public image of research and the role it can play in the public service. We can press for a change in the popular image of science (reductionist science) to what may be called ecological science. We can challenge a great deal of the research which is presented as evidence supporting current educational, health care, and social policies. We can seek ways of engaging in any one of the hundreds of specific research projects that are required.

Similar things follow from what we have seen about requisite forms of bureaucracy and democracy. We need arrangements which are, to all intents and purposes, the exact opposite of those we have at the moment. Although I have also indicated the enormous barriers to such a change, part of what I have said is that we need a ferment of innovation to which *everyone* needs to contribute. So, in reality, everyone *now* can begin to behave differently. Everyone has some freedom of movement. Once again, the things to be done are legion and not those suggested by “common sense”. Rather, they follow from an altered vision of what the world is like and how it should be. Hence we can argue the case on a general basis. And/or we can begin to relate to our teachers, schools, and local authority administrators differently. We do not have to wait for central direction to set up network arrangements to supervise such officials and change our own and other people’s expectations of them. Once again, there are endless formal research projects to be undertaken: to find better ways of thinking about, assessing, and nurturing multiple talents; to formalise arrangements for implementing procedural (as distinct from outcome-) accountability: What *are* the things managers need to do to create a ferment of innovation, experiment, evaluation, and learning? How are we to overcome the tendency of self-presentational strategies to undermine the evaluation of such activities? Perhaps above all we can press for, and contribute to, actual experimentation with alternative arrangements in educational, health care, and other systems.

There is no shortage of things that can and must be done. What is needed is imagination on the one hand and a willingness to commit oneself to actually doing one of these things on the other. And there is the rub. For a commitment to doing only one of these things depends on confidence that someone else will do some of the others. And *that* depends on a vision of society and its potential operation that currently seems to be almost entirely lacking.

### **Some Suggestions**

It would seem to follow from the observations made at the very beginning of this chapter and the work of Rosabeth Kanter that creation of a pervasive climate of innovation is dependent on nurturing the wide variety of talents, emotional predispositions, or competencies that are available in the population. This depends on evolving better ways of thinking about the nature of these competencies. I have myself offered a possible framework for doing this based on the work of David McClelland. Unfortunately, as is common when paradigm shifts are needed in science<sup>36</sup>, McClelland’s work is widely thought to have been discredited by psychologists steeped in traditional thoughtways with careers dependent on pursuing those thoughtways<sup>37</sup>.

Nurturing or releasing high level competencies requires formalisation of the personal frameworks adopted by those teachers who are able to pursue work like that mentioned above, some managers<sup>38</sup>, and many more parents<sup>39</sup>. Attempts to formalise such insights and implement developmental programmes based upon them<sup>40</sup> have brought to light some interesting things. It is true that creating opportunities for people to practice and hone components of competence whilst engaged in tasks they are strongly motivated to undertake – or can be said to value – does indeed strengthen those competencies and these outcomes are greatly strengthened by exposure to appropriate role models ... role models who share the values or emotional predispositions of the person concerned<sup>41</sup>. But the most important effect of those programmes is produced by their capacity to help people clarify their values, stop pursuing activities they do not value, and pursue the ones they do value more effectively. Note that no conventional outcome-based evaluation conducted with traditional measures could reveal this<sup>42</sup>.

It is obvious from the material briefly summarised at the very beginning of this chapter that the role played by the teacher was crucially important. Actually there was more than one of

them. These teachers were exceptional, outstanding, people who found ways of pursuing their objectives ... and developed the managerial competencies required to do what they were doing ... over perhaps 10 or 20 years. During that time they had to find ways of dealing with numerous changes in external directives, administrations, and administrators. One cannot expect many people to be so committed and competent.

Similar observations can be made about the managers responsible for creating the climates of innovation which emerged from what Kanter has called “parallel organisation activity”. These are characterised by groups of people possessed of different patterns of motivation and competence forming around emerging issues. These groups include people who are good at noticing problems and opportunities, others who are good at formalising them and presenting them in ways which will attract resources, others who are good at coming up with new ways of thinking about the matters in hand and inventing solutions, others who are good at industrial espionage and find out what others are doing ... and so on. People who are good at doing one of these things are not necessarily good at doing the others.

So, if we are going to get a pervasive climate of innovation, the job descriptions of our public service managers need to change ... and so do the procedures used to hold them accountable for performing a variety of newly-clarified roles in the area. Most of my two books *Managing Education for Effective Schooling* and *The New Wealth of Nations* are devoted to spelling out what these arrangements might be.

Because tackling the central issues which confront us ... our dysfunctional “educational” system, our dysfunctional governance system, and the network of feedback loops which we have categorised as Thanatos ... depend on the creation of a learning society – one that innovates and learns without central direction – one characterised by a pervasive climate of experimentation and learning – one characterised by pervasive “parallel organisation activity” – one displaying on a society-wide basis the characteristics of the classroom described in the opening paragraphs of this chapter ... it is essential to have a more explicit framework for thinking about the nature, development, and assessment of those characteristics. For this reason, special appendices have been created to summarise the outcomes of our work in this area.

## APPENDIX A

### Competence, Incompetence, and Incompetent attempts to fix Incompetence

My use of the term “competencies” differs sharply from the way it is used by most authors studying, writing about, and setting out to nurture “vocational competence” – which is often said to involve key skills, core skills, enterprise skills, life skills, and personal transferable skills.

As Alison Wolf (1995, 2001, 2011) noted, the approach adopted by most authors and providers rapidly gets them into a quagmire from which they cannot escape. Vocational competencies are meant to be transferable. Yet the approach most often taken to identifying them makes it extremely unlikely that the outcome will be the identification of such skills. The approach relies on asking various “stakeholders” to list the competencies they believe to be necessary in particular occupations. This results in long lists of fragmented knowledge. The fact that these bits of knowledge do not meet students' needs to learn *how to do* – ie to acquire generalisable tacit knowledge - (rather than to regurgitate information) is justified on the grounds that such knowledge “underpins high-level competence”. And the assessment procedures prescribed by these working groups generally consist of tests of knowledge or demonstration of low-level skills. But the skills called for, but going by the same name, are often very different in different settings. More than that, they are, in practice operationalized and assessed very differently in different training programmes (Wolf, 2001, Black & Dockrell, 1989; Black, 1989; Raven, unpublished, 1995.)

Worse than that, as Westera (2001) and Wolf (2001) have noted, this process has corrupted the very basis of vocational education justified using the term *competency* back into programmes designed to teach the very knowledge and skills that the words “competency-oriented education” and “competencies” were specifically introduced to lead educators away from<sup>43</sup>. “Competency-oriented education” as it is currently<sup>44</sup> operationalized is indistinguishable from content-, knowledge-, and skills-oriented education. In this way it has contributed to and strengthened the processes driving education out of schools.

It therefore behoves us to examine the use and mis-use of the term.

Its mis-use has resulted in the wastage of billions of dollars and euros and corrupted the work of tens of thousands of educational researchers, lecturers, and assessors ... not to mention perpetuating the destruction of lives of students<sup>45</sup> and failure to breathe new life into economies. This misuse has served to strengthen the already widespread cynicism about the use of words by politicians and administrators. In modern society nothing is what it is said or claimed to be and is usually it's opposite<sup>46</sup>.

Put more strongly the mis-use of the term has resulted in diverting billions of dollars into the pockets of a network of incompetent “professionals” fraudulently claiming to deliver programmes that meet the needs of students and society.

As noted in the footnote to page **XXXX** I myself use the term “competencies” to refer to emotional predispositions to engage in fairly specific, but complex, activities having cognitive, affective, and conative components in effective ways in a variety of, situations. As such they involve much more than cognitive knowledge and mental or sensory-motor skills. Even the requisite “knowledge” is largely tacit, consisting of knowledge located in people's hearts and hands – such as emotionally-based predispositions to react to non-verbal feedback from motor and other actions<sup>47</sup> and from other people's non-verbal communications. The

crucial thing is that components of this feedback are sub-consciously selected and intensively engaged to produce effective action, mental or physical.

### *Professional Incompetence*

I also noted that personal incompetence rarely arises from a lack of formal knowledge or skills but rather from a failure, usually stemming from a lack of appropriate intrinsic motivation, to bring to bear such knowledge and skills as are possessed in an appropriate way. It stems from a lack of the most rudimentary forms of *professionalism*<sup>48</sup>, although, as Schon (2001) and I (Raven, 2012) have argued, the concept of professionalism actually involves a great deal more. Professionalism involves going well *beyond* the normal calls of duty.

To elaborate on this, one of the things we have seen is that evidence of the gross incompetence of one of the most widely dispersed “professional” groups – teachers – in the world is directly available through personal experience to at least one third of the population. No wonder they demand that politicians find some way of doing something about the situation. However, surveys reported by Schön (1983, 2001) and Ilott (2001) show that vast numbers of people either have direct experience of, or are acutely aware of, instances of professional incompetence among doctors, lawyers, nurses, social workers and others. This experience includes the widespread observation that many “professionals” find ways of meeting “targets” or creating the impression of following mandatory procedures *without* delivering the benefits they are expected to deliver to clients (See eg Seddon, 2008). Hogan (1990) shows that not only do some 70% of the population have direct experience of working with an incompetent boss or manager, 50% of American managers *are* grossly incompetent, destroying the confidence of their subordinates, undermining their colleagues, and driving their organisations into the ground for the sake of personal gain. We (Raven & Dolphin, 1978) were shocked to find that many of the senior civil servants we interviewed were not the least bit concerned about whether the divisions for which they were responsible delivered the benefits they were charged to provide. Instead they were concerned only to grow their empires. Our observations are confirmed by research reported by Hope (1984), Day & Klein (1987), and others. But note the catch: clearly, from the point of view of the organisations concerned, and even society, such behaviour is indeed unprofessional. But from the point of view of the individual it is often highly effective.

But note the problem. The response of politicians and most professional organisations to such observations on the part of the public has been to introduce “quality control” procedures *based on assessments of technico-rational knowledge*. Hence the proliferation of demands for certificates of “competence” to carry out the most menial tasks and the proscription of actions going beyond these on the grounds that they are taking the individual “beyond the bounds of his/her certifiable competence”. Hence the endless regulations about of which Schön’s professionals complained so loudly<sup>49</sup>.

One would in fact expect any professional teacher\* worth the name to set about trying to tackle the constraints which deflect him or her from nurturing the diverse high level talents of his or her pupils and those which result in about one third of the pupils in his or school being seriously damaged by the procedures followed in those schools. At the very least this would involve him or her in trying to influence government specifications of the curriculum processes and assessment procedures that are to be employed. Doing this effectively would

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\* The argument in the following paragraph applies equally to educational and clinical psychologists and indeed to a wide variety of “helping” professions (see McKnight, 1995).

not only require familiarity with curriculum processes and assessment procedures not currently taught in colleges of education (and therefore only acquirable through self-motivated personal development activities\*) but also an understanding of the social processes through which curricula and assessment practices come to be chosen and defined.

More than that, it would involve a willingness, an inclination, and a capacity to get together with others to contribute to a process which would influence those processes/constraints. In other words it would depend on a number of important motivational predispositions combined with an appropriate emergent collective competence (intelligence) of the kind we stumbled upon while we were looking at the work of the primary school pupils discussed at the beginning of this chapter.

Reversing this statement: *Failure* to do these things can only be viewed as evidence of gross professional incompetence.

### *Sources of Professional Incompetence*

But note how any willingness to attend to these issues is driven off the agenda by the processes illustrated in Figure 1.

As has been mentioned, very many people have experience of incompetent teachers. Although many would like to complain that system's goals or targets are not right for them or their children, those who have the most negative experiences do not have the vocabulary to express their feelings. So the complaint, as articulated, relates to the feeling that teachers are somehow not doing as much as they might to help their children get "high" scores on tests which, despite the fact that they actually have little construct or predictive validity outside the educational system – ie do not predict performance *in jobs*<sup>50</sup> - largely control *entry* to jobs. Given the way tests are constructed it is, of course, impossible for all pupils to get high scores on them. Unless and until there are means of giving pupils credit for other high-level talents there is no way out. This constellation of factors leads those who control our centralised command-and-control oriented governance system to demand that teachers participate in "continuing professional (sic) development" (viz vocational training) activities with the nominal aim of raising test scores (but in fact ensuring that a pre-determined proportion will be labelled as incompetent). This emphasis on training again occurs despite the fact that, as the author (1987 a & b) and others have shown, such training has little effect even on teaching behaviour. The recursive effect of all this is to strengthen demands that teachers follow OFSTED prescriptions about what to do, hour by hour, in their classrooms. And teachers comply because their livelihoods depend upon it. What it actually does is further reduce their opportunities to observe the other talents pupils possess and invent ways of nurturing them. Indeed, following these prescriptions even reduces their opportunities to seek feedback *from their pupils* regarding how well they are doing in their teaching. This again despite Hattie's (2009) demonstration that this is one of the most important behaviours distinguishing more from less effective teachers. In this way these central prescriptions *reduce* the scope for either teachers or pupils to display professional/vocational competence.

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\* The teachers who orchestrated the developmental activities described at the beginning of this chapter had not only spent some 10 to 20 years developing the necessary competencies but had also gone to a great deal of trouble to move themselves into positions in which they were relatively free from the usual bureaucratic and other constraints in order to be able to implement appropriate activities. Examples of the settings in which they had more scope to nurture the competencies of their pupils included small two-teacher schools. Note the implications for our understanding of what the term *professional* competence implies.

These reflections quickly prompt the converse question: Through what arrangements would one set about nurturing more meaningful forms of professional competence? Where would one begin?<sup>51</sup>

Perhaps with more professional study of competence itself and professional competence in particular!

### *Potential Sources of Insights into Nature of Competence*

#### *1. Writings on Alternatives.*

So let us try to find some professional studies of competence and its assessment.

An obvious vein to mine might be the writings of those who have proposed, and in some cases implemented, alternative forms of education ... people such as John Dewey, Maria Montessori, Ivan Illich, William Kilpatrick, Paulo Friere, George Counts, and the Newton, Lincoln, and Bronxville public schools in the USA .

Unfortunately, the result of such a quest is disappointing. As I show in Raven (1991), few of these authors contribute any significant discussion of the alternative competencies they might have set out to nurture. One reason was simple - and directly related to the theme of this chapter. The primary objective of many was to stem the role the “educational” system plays in the creation and legitimation of hierarchy and division<sup>52</sup>. They were opposed to “labelling” of any kind that might be used to allocate position and status. They settled for such things as project work directed to enabling pupils to discover things for themselves. They just “knew” that such work conferred multiple, but “unmeasurable”, benefits. (One sees the same thing in the assessment of projects students undertake as part of their studies in universities.) As Bernstein (1975) put it, the objectives shifted from being single, visible, and damaging to many pupils to objectives that were multiple and invisible<sup>53</sup>. The few that took the task of making alternative objectives explicit and assessable (eg Aikin, 1942; Tyler, 1936) found the task too difficult. Kazdin (2006) has usefully highlighted that failure to address this problem still does enormous damage via incompetent studies purporting to contribute to “evidence based policy” in education, health care, and elsewhere. In this context it is not surprising that “Progressive Education” came to be associated with the cult of mediocrity. None of the British teachers Bennett (1976) asked to define Progressive Education did so in terms of distinctive goals and he subsequently concluded that most “open” classrooms were just a mess. (It has to be said that both his and other studies such as those of Galton et al 1980 and, more importantly Sammons et al., 1997, can be described as incompetent precisely because their authors had no vision of possible alternatives in education and thus did not include questions which might have revealed pockets of interest in those alternatives and thus made them available for discussion.)

From our present vantage point, however, it is clear that what had “really” happened was that these movements had run up against the social forces that contribute so much to the creation and legitimation of hierarchy.

#### *The work of David McClelland and his colleagues*

Now let us turn to what, at first sight, appears to be another potentially fruitful line of enquiry and development.

It started with David McClelland’s (1961) demonstration that the direction in which societies and organisations would develop could to some extent be predicted from the dominant motivational predispositions of their members. Or, more accurately, the goals to which their

members would be predisposed to spontaneously deploy such components of competence as they possessed.

Importantly, the “strengths” of those “motivational dispositions” were assessed in a very distinctive way which is, even today, not widely understood and is in fact at loggerheads with mainstream psychometric theory and practice.

In my terms, one first identified peoples’ dominant preoccupations and then, and only then (there is no point in trying to assess competence by asking people to do things they just don’t care about), counted up the number of what I would now call components of competence people brought to bear in an effort to undertake those activities effectively. Did they wake up at night thinking about how to do so? Did they persuade others to help? Did they identify and take practical steps to overcome obstacles? Did they turn a lot of emotion into the task? And so on. Note that some of these were cognitive activities, some affective, and some conative - involving will, determination and persistence. Note, too, that these components of competence are all difficult and demanding activities which people will not engage in unless they are about the activity in which they might be expected to display them. One cannot assess these components of competence in a generic way ... but only when people are doing things they are strongly motivated to do.

The next step was to see if these insights could be turned the other way round. Could one create situations in which one could enhance these dispositions?

Skipping over important parts of the story, a firm (McBer & Co.) was set up to try test this hypothesis in practice. Some of the results were impressive<sup>54</sup>.

But those running the firm also hit upon something else that it seemed important to do.

Might there be a related way of distinguishing between the motives and talents of more and less competent workers? (It was already known, especially from studies which contributed to the later meta-analyses conducted by such people as Hunter (1984), Ree et al (1994), and Bertus et al 2005) both that this variance had enormous financial implications and that conventional psychological tests were unable to predict it.

Building on the work of John Flanagan<sup>55</sup> (who, as it happens, also carried out some of the most devastating studies of the ineffectiveness of education by interviewing a sub-sample of those who had been involved in the huge “project talent” survey and its follow up) they set about conducting what would now be called “Behavioral Event Interviews”.

They asked people working at many different levels in many organisations to tell them about specific incidents in which they had seen people doing things which they regarded as particularly effective and particularly ineffective. What did those concerned do? What led up to the situation? What did others do? And what was the outcome?

They also asked people similar questions about their own behaviour, but this time also asking what their thoughts and feelings were.

They then sorted these incidents into piles in which the behaviours in each pile were in some sense similar to those in the same pile but different from those in the others.

So one got composite thumb-nail sketches of the psychological nature of some of the most common forms of competence and incompetence.

For the sake of completeness, it may also be mentioned that they also conducted studies of the qualities which distinguished those employed in more successful and innovative firms from those employed in less innovative ones.

The results were strikingly different from the long lists of specific knowledges and skills deemed necessary to effective performance in different types of job.

Most strikingly, effective behaviours were *self-motivated*. They involved much more than low level skills (which are, in any case, highly job specific and easily learned).

### *Toward an Atomic Theory of Competence*

But how to systematise the results of these diverse studies all of which used different words to describe the requisite and perhaps idiosyncratic competencies required in different situations?

By the mid 1970s there were about 80 of these studies.

Building on the work of those who developed the scoring systems for Achievement, Affiliation, and Power motivations studied by some of David McClelland's colleagues<sup>56 57</sup>, I set about trying to develop an appropriate framework. I ended up with one in which the user was encouraged first to ask "What were/are the main motives or values of the person whose behaviour is described?" and then "What were the competencies/components of competence he or she brought to bear or neglected in performing this task?" I published a preliminary version of this framework in my 1984 book *Competence in Modern Society*, where I refer to it as an "atomic theory of competence" on the grounds that chemical compounds need to be described by reference to the elements of which they are composed rather than in terms of their scores on "variables".

Two key (if preliminary) observations were that the kinds of things people might be strongly motivated to do (i.e. activities they could be said to value) – ranging from developing better scientific theories through putting people at ease to creating political turbulence – seemed to be legion, whereas the components of competence that might be brought to bear to carry out any one of those activities effectively seemed more limited in number.

The framework that emerged is discussed at some length in *Competence in Modern Society* and summarised for heuristic purposes in the Grid which is included in Appendix C to this chapter. It is important to stress, however, that Grid 1 has been produced for illustrative purposes only. It is offered as a kind of an extract from an assumed-to-be much larger grid (framework).

It is flatly at loggerheads with the images of "science" (essentially physics) which lie behind attempts to summarise the variance in human behaviour in terms of scores on a small number of "variables". (Just imagine trying to recognise the vast variety of chemical substances or plants or animals in this way.)

But it *does* allow us to make some progress in thinking about the variety of self-motivated competencies observed (by those who have eyes to see) in workplaces and in the course of the project work undertaken by the class described at the beginning of this chapter.

### *The demise of a paradigm shift.*

But we have not yet reached the punch-line of this story so far as this chapter is concerned.

By the early 1990s there were about 300 Behavioral Event Interview-based studies of competence in the workplace and Lyle Spencer negotiated a contract to produce a book which would systematise and summarise them.

But then something of direct relevance to the theme of this chapter happened.

According to Spencer (personal communication) he told the publisher he was going to attempt to systematise the material in terms of a formalised and elaborated framework of the kind I had developed.

Using my terminology, he said that he intended to develop “an atomic theory of competence”. An interesting thing happened. The publishers’ reviewers argued that such a framework would differ so much from what readers expected that few would purchase the book. In that case, said the publisher, we won’t publish it. And so it came about that the Spencers were led to organise the descriptive competency studies they were reviewing into something approaching a variable-based framework.

But this was not quite the end of the story. The final triumph of the forces of Thanatos emerged some years later. McBer was merged with Hay-MSL to form Hay-McBer. This resulted in the production of the 1996 Hay-McBer *Scaled Competence Dictionary*. This lists 20 conventional scales or variables. There is no trace of the kind of work summarised in this chapter.

A parallel story emerged from the work of Donald Schon. He first produced the book “*The Reflective Practitioner*” derived from intensive study of more vs less effective teachers, architects, mathematicians and others. It dealt in particular with professional competence<sup>58</sup> - the tendency to go *beyond* the ostensible requirements of the remit. He then embarked on a programme of trying to *nurture* these professional competencies (*Educating the Reflective Practitioner*, 1987) in the course of MBA programmes at MIT. He and Argyris persisted for about 10 years. But failed<sup>59</sup>.

Once again it emerged that they themselves lacked the competencies required to bring about organisational change ... that is to say they emerged as incompetent professionals. They were defeated by hierarchy and Thanatos.

But now for something else. We have seen that, to do their jobs effectively, teachers need to influence the constraints on what they can do that arise from *outside* their jobs. The same was true of many of those studied in the McBer BEI studies. Effective managers, even such apparently tightly constrained personnel as naval officers, had to influence those *above* them to perform their roles competently. Some of the groups that emerged through what Kanter termed *Parallel Organisation Activity* had to influence those who controlled the operation of political systems outside their organisations. And so on.

When our own studies of competence began to reveal the same thing we arranged to become involved in two international studies of civic competence and political culture<sup>60</sup>.

The results were quite clear: *The most important source of incompetence in modern society is the inability and unwillingness to seek to understand, become involved in, or try to influence, social processes - and public management (governance) in particular.* Competence in modern society depends on perceptions of society, how it works, and one’s role in it\*.

But the need is to nurture the motivation and competencies required to understand and intervene ... NOT to teach conventional wisdom (largely dis-empowering mythology) about

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\* Much later, toward the end of an extended project aiming to develop an alternative to the BEI-based measures of competence (Raven, 1983; Raven & Sime, 1994), and after we had assembled the material which became *The New Wealth of Nations*, we worked up a fourth *Edinburgh Questionnaire* designed to elicit understandings of the workings of the international public management system (the “G 20” etc.) and the banking system. What we found was that, as it turns out others have found, there was virtually no understanding of these things even among such people as bank managers and members of MENSA. There was therefore no point in trying to index levels of such understanding as part of our framework to assess competence.

democracy, bureaucracy and political processes. As we shall see, this is more than a little threatening and leads to sharp interventions by others enacting other roles in the system.

From our current vantage point, doing this effectively involves understanding and influencing the network of feedback processes which we are here characterising as constituting Thanatos. It is crucial to competence.

**Appendix B**  
**Attempts to broaden the base of educational assessment**  
**and, in particular, to assess the outcomes of Competency Oriented Education**

Why is it necessary to broaden the base of educational assessment?

From a basic humanitarian and logical point of view, the most important reason is that the tests currently used in schools play a major role in destroying, not only the education of many, but also, in the end, those individuals themselves. But there is also a less high-minded reason that we will turn to in a moment.

As detailed in endnote (currently 9) research carried out in many different countries shows that the main goals of education endorsed by pupils, parents, teachers, ex-pupils and employers (and indeed written into the official curriculum documents, including those concerned with vocational education and training, of many countries) emphasise such generic high level competencies as initiative, ability to work with others, problem solving ability, and the ability to understand and influence organisations and societies.

However it also shows that, in general, teachers devote little time or effort to trying to nurture such competencies and, instead, spend their time teaching toward tests. This is because, as we have seen elsewhere in this chapter, such certificates buy entry to jobs – for at least the “more able” students.

The net effect of this, (see endnote currently 3) is that schools seriously damage about one third of their pupils.

The need for change is glaring. Unfortunately, the system has served those who are in the strongest position to introduce the necessary changes very well indeed. And they have little contact with, or knowledge of, those who have been served less well. Many even seem unconcerned about the plight of their fellows. Worse, as we shall see later, there is strong evidence that at least some of the most powerful members of this group feel seriously threatened by the necessary changes.

A second reason why the assessment system needs to change is that it is necessary to find some way of creating the impression that those who have become involved in providing “Vocational Education and Training” have been doing something worthwhile and, in the process, giving the trainees some kind of certificate which will purportedly enable them to scramble more effectively for jobs.

We have seen that mainstream education tends to produce, at best, very limited levels of competence and, more generally, inculcates widespread feelings of trained incapacity. Public awareness of this is generally expressed in statements to the effect that the system needs to move away from teaching academic content and instead to teach students how to *do* things that will be useful in workplaces.

This has been reflected in a proliferation of what are termed vocational education and training programmes ... although the term makes many people uncomfortable. Like much else in modern society, it is suspected of meaning something else ... in this case, something second rate. But the notion has nevertheless created jobs for thousands of people – who assume that they are more capable than those they are making prescriptions for - generating lists of the competencies supposedly “needed” in a huge range of jobs and even more jobs for people

purporting to offer programmes which will nurture these competencies and credential the results.

How is it going to be possible to give teachers credit for having attended to and achieved the wider goals of general education? How is it going to be possible to give students credit for having developed high-level competencies when the time comes to scramble for a job? How is it going to be possible to give students who have been enrolled in vocational education and training programmes credit for what they have learned in the course of their studies and especially for any high level transferable skills they may have developed? We have seen that the tests traditionally used in so-called educational institutions are unable to do this.

So, to move forward, we must revisit the project-based educational programmes I discussed at the beginning of this chapter and note that what I said about the idiosyncratic talents pupils developed in the course of that work. If what I said has any meaning, it implies that there must be some way of recognising those idiosyncratic talents - otherwise the terms would have no meaning. The same is true of the individual talents or competencies harnessed to produce the climates of enterprise or intelligence that occurs in the course of what Kanter (1985) has called “parallel organisation” activity in workplaces. And it is also true in more competent work groups created by a significant proportion of managers, including some officers in the US navy<sup>61</sup>.

But clearly observation of those competencies and their outcomes is dependent on the adoption of a very different lens to that offered by conventional psychometricians and experts on educational assessment and educational evaluation.

Ilott and Murphy (1999) and Ilott (2001) document the perverse process whereby awareness of gross incompetence among health care and social workers results in the specification and testing of low level competencies and thus the perpetuation of gross incompetence because all have met the specified standards. The result is that, as Westera (2001) and Wolf (2001) have shown, the operational interpretation of competency-oriented education employed in schools and other “educational” and vocational training institutions is indistinguishable from skills-oriented education.

But Westera is wrong to throw the baby out with the bathwater. The image of a diversity of talents and competencies and their combination into climates of enterprise or intelligence conveyed by our discussion of project work is clearly correct. It is our images of “ability” and measurement that are wrong.

*Other efforts to register high-level competencies.*

It may be thought that these problems are in the process of being addressed via such things as authentic assessment<sup>62</sup> and the so-called “strengths” movement<sup>63</sup>. But, as Wolf (2001) and Black and Dockrell (1989) show, this is anything but the case. Both these authors document the quagmire which results. The fundamental problem is that these movements lack any theoretical formulation of the psychological nature of the so-called strengths and talents under discussion and any framework for moving toward an agreed descriptive framework of the kind used in eg biology to categorise whatever it is that is being revealed by the material that is included in eg portfolios of work. The skills demonstrated in meeting the pre-specified lists of competencies required in particular occupations are meant to be objective and generalizable. But, as Black and Dockrell (1989) showed from a detailed study of the way in which a number of colleges were delivering specific modules within the Scottish National Certificate, content, standards, and means of assessment varied hugely between providers. My own earlier investigations on the same topic showed that that is the understatement of the year. The apparently objective and detailed assessments tell us nothing. How could it be

otherwise? As Lester (2001) has neatly argued, whereas most people believe that while it is difficult to measure such things as motivation, it is easy to assess their knowledge, the opposite is the case. With a bit of effort one can find out what kind of person one is dealing with. But one can never assess his or her knowledge because that knowledge is idiosyncratic and tacit. On the face of it, one can find out whether he or she knows something which someone else knows. But even that proves more difficult than might have been thought in part because the meaning of that information varies so much with the context in which it is used and interpreted.

*A potentially more successful approach*

As far as I can see, there is one set of developments which has the potential to help us move forward. But it, too, depends on the evolution of a theoretical framework paralleling those used in chemistry and biology ... and it, too, has been swept aside by the onrush of busywork.

At heart, these developments shift the process away from direct accreditation of students to the validation of courses and developmental programmes.

A brief indication of what emerged from our own work may give a useful impression of the idea. Essentially, we showed that if, via administration of a brief questionnaire to students, one could show that teachers had created what we came to call a *Developmental Environment*, one could trust what those teachers said about the students. Of course, improvement of the process would be dependent on the development of a more appropriate framework for thinking about competence and its development. (But, of course, this is now an academic matter in the worst sense of the word because all these schools have been closed down by the onrush of mandatory “testing” of mandatory subjects.)

A similar line of development has been pursued by Burgess, Adams, and their colleagues. Thus we find Burgess and Adams describing the process in secondary schools<sup>64</sup>, in “independent studies” in universities<sup>65</sup>, and teachers<sup>66</sup>.

*Effective competency-oriented education is threatening.*

It is important to caution against a tendency to believe that failure to make progress in this area has arisen entirely from conceptual/technical difficulties. Scottish School Inspectors appointed in the wake of the Thatcher government’s destruction of the independence of HMI in England published outlandish criticisms of some of the schools we studied. *Opening the Primary Classroom* was, like the work of Rugg (see Robinson 1983), discredited via a smear campaign. OFSTED in England even tried to close Neill’s Summerhill – but hadn’t bargained for the fact that the well-heeled parents of its pupils were able to mount a legal challenge which documented the fraudulent nature of OFSTED’s claims. The School of Independent Studies at NELP was closed on the grounds that the Polytechnic had made insufficient provision to support it! ... not, please note, because of any criticism of the programmes, their outcomes, or the assessment procedures.

Let me now pursue that line of thought. Even within my limited experience, I have become aware of several significant attempts to deal with the wider problems of assessment which have been deliberately killed off and not died from natural causes.

One was the Schools Council Project on Examinations and another the work of an Irish committee on the Intermediate Certificate Examination.

Around 1962 the British government made a “mistake”. Concerned at the appalling fate of many secondary school pupils<sup>67</sup>, they set up a series of curriculum and examination projects. The “mistake” they made was to give control of these projects to teachers! The teachers were

seriously interested in education! They set up a series of projects in languages, science, how society works, vocational guidance etc. and, recognising the role which the examinations played in deflecting the system from its goals, gave increased powers to the Schools Examinations Council.

This is not the place to go into what happened next in any detail – although a proper study of what happened would be more than worthwhile. The curriculum projects were step by step neutralised .... none more vehemently than the highly successful Schools Council Integrated Science Project. This “unfortunately” encouraged pupils to, among other things, make observations about society and test them and had successfully negotiated arrangements to re-focus the examinations which had previously stifled such things as the Nuffield science project<sup>68</sup>.

But the examinations project survived for 20 years. For good reason, it never produced an official report. But then the Thatcher government demanded that it do so within 6 months and appointed Waddell as chairman. That report is a remarkable document. It notes the importance of nurturing diversity and especially high level talents such as initiative and creativity and goes on to make serious recommendations about how the problem of recognising these outcomes should be addressed. It said that a range of examination Boards offering different levels, modes, and forms of assessment were required. *After the report had last been seen by the committee* a single sentence was mysteriously inserted into the recommendations saying that “the results (of all these diverse assessments) will be expressed on a single scale of 7 points in a subject area”. This, of course, undermined everything the committee had said<sup>69</sup>.

The work of the Irish Committee on the Intermediate Certificate of Examinations which made similar recommendations<sup>70</sup> went the same way. The Secretary of the government Department of Education simply announced that there was no money to do what needed to be done ... and that was the end of the matter.

Another example. The last project undertaken by the Scottish Council for Research in Education\* when it was still to some extent an independent body was the *Pupils in Profile project*. Initially proposed by the teachers union, funding was negotiated in the face of opposition from the Scottish Office. Step by step, government intervention progressively narrowed its terms of reference and objectives ... although the final report<sup>71</sup> remains a valuable document.

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\* The progressive and deliberate destruction of SCRE, the Schools Council projects (especially SCISP), and the undermining of independent research in general via the terms on which researchers are employed to work on the government funded projects that are essential to securing tenure, the destruction of independent research in the universities and eg the discrediting of *Opening the Primary Classroom* merits major and serious research ... although there is little doubt that whoever had the courage to embark on such a project would encounter serious barriers and obstructions. For an example of what needs to be done see Robinson (1983). *Patriotism and Economic Control: The Censure of Harold Rugg*.

While most of those who contributed to the thousands of studies of “what works” in education that led to Hattie’s (2009) meta analysis of 800 meta analyses no doubt failed to include measures of the wider outcomes of education simply because the data sets available to them did not include them, others, such as the huge British study conducted under auspices of the London University Institute of Education (see eg Sammons, et al, 1997) cannot be so easily forgiven. In fact, of course, many were specifically precluded from doing so. One has to ask “Why?” And, further, why was such unethical behaviour tolerated by their profession?

I am tempted, to save space, to leave the matter at that. But I cannot resist at least mentioning other government activities which horrify most people when they get to hear of them. These include the deliberate destruction of *SCRE and its archives*<sup>72</sup>, the changes in the terms of research contracts which now deprive researchers of the right to say anything without government approval, and researchers assigning, as a condition of grant, the right to alter the actual figures in their reports to government departments.

But it is too easy to attribute these things, like the behaviour of those bank clerks who generated fraudulent affidavits of securities for their clients in order to be able to lend them money in order to secure their own bonuses, to a lack of moral scruples.

It is too easy to attribute teachers’ and psychologists’ failure to get together to do something about the situation in which they find themselves to their lack of competence and commitment to get together to influence the institutional framework within which they work (though all of that needs doing)<sup>73</sup>.

More fundamentally the whole process illustrates the need to understand and find ways of influencing the network of social forces which I have designated as Thanatos.

The recognition and nurturing of multiple talents would be a threat to hierarchy<sup>74</sup> and those who have been selected and promoted because of the role they play in that system are only too aware of that.

## **APPENDIX C**

### **THE NATURE AND ASSESSMENT OF COMPETENCE**

We return now to the task of elaborating our model of competence and the way in which its components are to be assessed. We have seen that there are many components of competence, that many of them are relatively independent of each other, and that these components of competence are cumulative and substitutable. And we have seen that it is inappropriate to try to assess these components of competence except in relation to activities which the person concerned is strongly and intrinsically motivated to carry out. We have therefore argued that competencies are to be understood as motivational predispositions. One first needs to be strongly motivated to carry out some activity and then to bring to bear as many as possible of the components of competence to carry it out effectively. One will not display those components of competence unless one is engaged in some activity one cares about. We refer to the activities which people who are both strongly motivated to undertake and able to carry out effectively as competencies.

This way of thinking about competence may be made more concrete by reference to Grid 1.



A variety of types of behaviour which people may be said to value or be strongly motivated to undertake have been listed across the top of the grid.

For presentational reasons and to link the framework developed by McClelland and his colleagues these behaviours have been grouped under the headings of Achievement, Affiliation, and Power.

Down the side are listed a number of components of competence which, if engaged, are likely to result in any particular activity being successful ... but these components of competence cannot be identified or even said to exist in an individual unless some motive has been engaged. These components of competence include cognitive activities such as making plans and thinking about obstacles to goal achievement, affective activities such as enjoying the activity or longing to complete that a necessary but distasteful task, and conative activities such as exercising willpower, being determined, and persisting.

This version of the Grid is by no means complete and is intended for heuristic purposes only.

One way in which it is incomplete is that it lists only a few of the motivational predispositions observable in the population. For the sake of argument, one might say that there are perhaps a couple of hundred idiosyncratic concerns or motives. If this sounds like a lot, consider how many species of animals are encompassed within the biological classification framework.

An inclination to undertake any one of these activities does *not* imply an indication to pursue any other activity which may on the face of it seem similar and for this reason may have been placed next to it in the list on the top of the grid. In other words, these motivational predispositions are not groupable by applying factor analysis – although it may eventually turn out that they can be grouped in the cyclical manner of the periodic table of elements.

Our present impression is that there are many fewer cumulative and substitutable components of competence than there are potential motivational predispositions... just as the number of organs from which thousands of animals are constructed are fewer than the number of species.

Another, and perhaps more important, limitation of the grid is that omits any reference to the importance of people's perceptions of organisations, societies, how they work and their role in them. For example, more effective machine operatives are distinguished from their less effective peers in that they trouble themselves to find out how their organisations work and take it upon themselves to intervene in them when things go wrong. Others believe that it would not be appropriate for someone in their position to do this. Again, an understanding of how an organisation works may be used to advance oneself in one's career, to sabotage the organisation, or to secure resources for a scientific project. Again the competence to build up such an understanding may appear as a component of competence or as a much broader motive or preoccupation to which other components are harnessed.

Just as a diagrammatic branching "tree" on a single page can give some impression of the nature of biological classification but is inadequate for everyday use, so it is necessary to turn to *Competence in Modern Society* (Raven 1994) to fully appreciate our competence framework.

Given that the focus of this chapter is on incompetence, mention may be made of a few sources of incompetence that are not mentioned. Incompetence often arises from perceptions of organisations or society and how it works and one's role in it which deter one from effective behaviour. Another source is finding that some behaviour one believes necessary to achieving some goal (eg unscrupulous manipulation of others) is not compatible with being the kind of person one would like to be or believes others would like one to be.

The importance of separating these value and efficacy components in assessment can be re-emphasised by taking another example. An individual who values success at football may show a great deal of initiative in relation to football, be very sensitive to feedback from the environment, seek the help of others to improve performance, monitor, and continuously improve his or her style, seek out new techniques and ideas, be sensitive to minor cues that suggest ways to improve, be sensitive to the approval or disapproval of his or her peers, have the willpower to persist in the face of difficulty, and be able and willing to persuade local politicians to provide a pitch or field. Nevertheless, if the ability of this same person to engage in these complex, cognitive, affective, social, and conative activities is assessed in relation to performance at mathematics--a goal which, for the sake of argument, we may assume this individual does not value--then one might erroneously conclude that he or she is unable (and not just unmotivated) to engage in the activities that have been mentioned. Teachers, psychologists, and managers have, in the past, too frequently been guilty of drawing such erroneous conclusions.

### **Descriptive Statements and Profiles**

In principle, Grid 1 can be used to identify the behaviours that people can be said to be motivated to undertake and the components of competence they tend to display in pursuit of them. For any one person, an assessor could, after having made relevant observations, enter ticks in the appropriate cells under the behaviours the person is strongly motivated to undertake. By adding up the ticks in any one column, the assessor can obtain an index of how likely it is that the person concerned will undertake that kind of behaviour effectively.

It is important to note, however, that because, as has been indicated, the Grid should be considerably extended, the procedure would become cumbersome if it were applied wholeheartedly. A way round this problem will be suggested shortly.

### ***Heterogeneous Indices or Internally Consistent Factor Scores?***

Not only must motivational predispositions be identified as an integral part of the assessment of competence, the components of competence we have identified cannot be meaningfully analysed or identified in factorial or dimensional terms. The scores obtained by summing down the columns in Grid 1 are, quite obviously, not unidimensional. Indeed, the more independent and heterogeneous the competencies that are composited, the better--provided, of course, each relates to goal achievement. At this point many readers will (as a result of their training in the dominant internal-consistency, factor-analytic, measurement paradigm) be thinking "Such scores are not meaningful!" It is therefore important to note that, while the factor analysts' claim that such heterogeneity shows that the scores which are obtained are not unidimensional is correct, the assumed corollary--that they are not meaningful--does not necessarily follow. No one would argue that multiple regression coefficients are meaningless simply because they are calculated by summing across as many maximally independent predictors of performance as possible.

### ***Overall Indices Versus Detailed Descriptive Statements***

In practice, an account of the types of behaviour which a person is strongly motivated to undertake and the competencies he or she displays in the course of carrying out those activities provides much more useful information than a single total score or profile of such scores. Such a description is radically different from a profile of scores across a series of factorially independent dimensions. The assumptions behind a factorial profile are that behaviour is best described and understood in terms of people's relative scores on a small number of dimensions. The assumption behind the model developed here is that behaviour is best to be understood by identifying people's values, compulsions, perceptions, and expectations and the components of competence they tend to display spontaneously in pursuit of their valued goals.

While such descriptions can, in principle, be made in any terms one chooses, effective communication is facilitated if one has an agreed set of descriptors with agreed observational

procedures ... such as one has in biology and chemistry. Note that neither of these frameworks requires one to list all the things that are *not* present (as in many profiling and rating systems introduced into schools and workplaces).

But note, too, that both chemistry and biology often require observers to prod the substances, plants, or animals they are observing to get them to reveal their properties ... and those properties are often transformed by their environments.

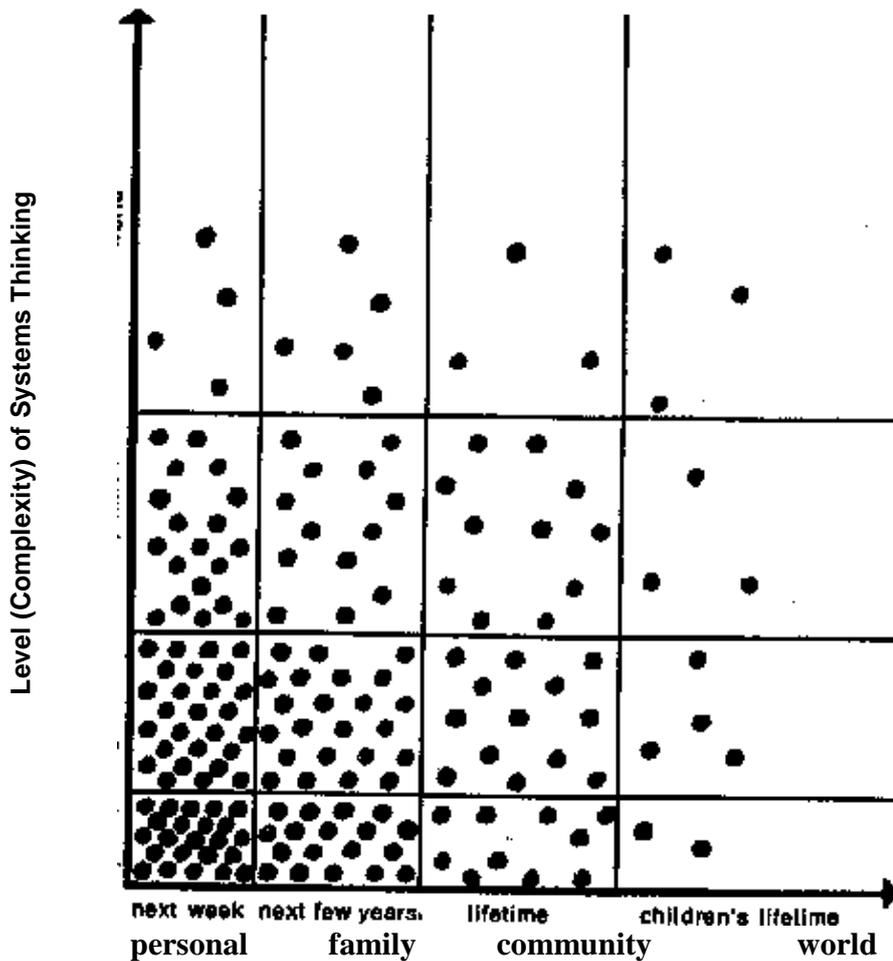
How to get the relevant information in psychology and education? There is not space to go into this in this chapter. More details will be found in Raven (1984). Here it is perhaps sufficient to note that the Behavioural Event Interviewing discussed in Appendix B quickly enables one to gain an impression of the kinds of activity people care about and the components of competence they bring to bear in carrying out those activities. Likewise, as we have noted, if one can show that a manager, teacher, or parent has created a *Developmental Environment* for his or her subordinates, students, or children one is in a very strong position to trust their statements about those subordinates, students, or children.

That really brings me to the end of what I set out to say in this Appendix.

However, in the main section of this chapter, I have had much to say about systems thinking and especially the absence of systems thinking (especially in socio-cybernetic terms) about the processes which are heading us toward extinction as a species and how to deal with them.

In that connection the following diagram, which has been modified from one which appears in *Limits to Growth*, is of more than a little interest.

**FIGURE XXX**  
**Levels of Systems Thinking X Focus of Thinking**



The horizontal axis indicates that there are wide range of people who value doing very different things. On the left are people who are concerned with personal economic benefits. On the right are people who are concerned with the survival of the planet. Between there may be people who are preoccupied with such things as the development of their local community. Although this is not the place to go into it, note that it is not true, as many of Maslow's disciples would have us believe and as common sense suggests, that concern with day to day survival precludes a concern with planetary survival.

On the vertical axis is capacity for systems thinking.

What we see is that there are a lot of people who are concerned with economic survival ... maybe at the level of winning the next meal, maybe at the level of enabling their organisations to eliminate all competitors. There are fewer people who are concerned with the survival of their communities or the planet.

Most in all categories are only able to engage in low-level systems thinking, handling only a few of the variables involved. Note, however, that the diagram implies that everyone is engaged in some systems thinking in relation to something. It is not true that, as is commonly asserted, "most people do not engage in systems thinking". There are quite a number in the top left hand box engaging in complex systems thinking relating to their personal advancement or that of their

companies. But there are very few in the top box on the right hand side. Yet this is the group on whom we depend most for our survival.

The question now is: "How would it be possible to move more people from the left hand or middle columns to the right hand column?"

What we know is that each of the components of competence required to engage in competent activity in relation to personally valued goals can, to some extent, be improved ... although improving the capacity to engage in systems thinking has turned out to be more difficult than most people suspected. And we know that value-clarification releases energy into undertaking the components of competence required to implement motivational predispositions effectively. But, so far, we have few insights into the procedures which would be required to alter people's motivational dispositions to move more of them into the right hand column.

But perhaps that is the wrong question. Perhaps a more basic question is how to create conditions which will enable more people to engage in activities they really care about.

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## ENDNOTES

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<sup>1</sup> Raven (2014).

<sup>2</sup> Striking examples of such senseless work include building pyramids. But, in fact, most work in modern societies consists of manufacturing junk goods (junk foods, junk packaging, junk toys, junk “entertainment”, junk finance, junk defence systems, junk cars) and junk services (junk education, junk research, junk health care, junk “democracies”) which not only do not contribute to quality of life but actually destroy it through such things as increased stress. See eg Bookchin (2005), Lane, R.E. (1991) and Marks, N. et al (2006).

<sup>3</sup> Raven (1977, 1994, 2011, 2012), but see also Postman and Weingartner (1971), Goodman (1962), Illich (1971), Johnston and Bachman (1973,1976), Bachman (1971, 1978), Flanagan (1975, 1978, 1983) and Andersson (1998, 2000, 2001).

<sup>4</sup> Raven, Johnstone and Varley (1985). Actually, there was more than one class and a composite picture was formed for presentational purposes.

<sup>5</sup> See Raven (1980) for a description of the processes many parents employ in managing the development of competence in their children and Klemp, Munger and Spencer (1977) for a description of the way in which some officers manage the development of individual and group competence in the US navy.

<sup>6</sup> They even tried to close Summerhill but had not bargained with the fact that many of the parents were well healed and able to mount a legal challenge. This revealed how fraudulent and motivated by other agendas were the claims made by the supposedly independent inspectors. See Stronach (2003).

<sup>7</sup> Actually this is but one illustration of one of the counterintuitive general conclusions which emerge from the study of systems. Common-sense based intervention in poorly understood systems almost always has counterintuitive, and generally counterproductive, effects. And the introduction of targets almost invariably makes things *worse*.(See Deming, 1993; Seddon, 2008).

<sup>8</sup> Research carried out in many different countries (eg UK [Morton Williams et al, 1968 ], Republic of Ireland [Raven, et al, 1975.], Scotland [Gray, 1983, Gow and McPherson, 1980] France [De Landsheere, 1974], Sweden [Andersson, 2001], USA [Flanagan, 1975, Johnson & Bachman, 1971] shows that the main goals of education endorsed by pupils, parents, teachers, ex-pupils and employers and indeed written into the official curriculum documents of many countries (see Passow et al, 1976), including those concerned with vocational education and training (MSC 1984-88, Wolf, 2012), emphasise such generic high level competencies as initiative, ability to work with others, problem solving ability, ability to understand and influence organisations and societies. However, interviews with pupils, teachers, and ex-pupils (Raven et al, 1975, Johnston & Bachman, 1971, Flanagan & Russ eft 1979) and classroom observation studies (Bennett, 1976; Galton et al, 1980, Raven et al 1994) show that, in general, although there are some striking exceptions, teachers devote little time or effort to achieving such goals. Worse still, as the studies cited in endnote **CURRENTLY 3** show schools seriously damage about one third of their pupils.

<sup>9</sup> See eg summaries by Raven (1994), Spencer & Spencer (1993), Schon (1983), Kanter (1985).

<sup>10</sup> This statement may need unpacking. What I have said about the idiosyncratic talents pupils develop in the course of some forms of competency-oriented, group based, project work implies that there must be some way of recognising those talents - otherwise the terms would have no meaning. This is true despite the fact that the very “existence” of these talents (competencies) is often dependent on contributions from supportive others. The same is true of both of the individual talents or competencies harnessed to produce the climates of enterprise or intelligence that emerge and of those emergent group competencies themselves. It is also true of what happens in the course of what Kanter (1983) has called “parallel organisation” activity in some workplaces – specifically those most conducive to technological and social innovation. It was also true in the more competent work groups created by some officers in the US navy (Klemp, Munger and Spencer (1977). Nevertheless, recognition of those competencies and their outcomes is dependent on looking through a very different lens to that offered by conventional psychometricians and experts on educational assessment and educational evaluation. As things stand, as Wolf (2001) and Westera (2001) have shown, the implementation of conventional models of assessment drives what we would consider to be competence-oriented education out of schools. The result is that the actual operationalisation of competency oriented education in schools and other “educational” and vocational training institutions is indistinguishable from skills-oriented education of

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the most dubious kind. See Appendix B for a discussion of the multiple failures of the plethora of folio and other tick-box “solutions” introduced in an attempt to overcome this problem.

<sup>11</sup> See Westera (2001) and Wolf (2002)

<sup>12</sup> They do not, but should, go on to say that ... “... and, if they do, they will contribute to the creation of a society in which my kids will be pressurised into joining the same absurd materialistic rat-race that is destroying our habitat and therefore our chances of surviving as a species”.

<sup>13</sup> Theoretically, one way to handle such problems would be to provide parents and pupils with a series of options combined with comprehensive information on the personal and social, short and long-term, desired and desirable, and undesired and undesirable outcomes of each. Unfortunately, this presents enormous problems to which we will return.

<sup>14</sup> eg Raven (1994, 1995, 2012, 2014).

<sup>15</sup> see eg Spearman, 1924, 1927, Hunter, 1984, 1998; Schmidt & Hunter, 1998, Raven, 1991, Bertua, 2005.

<sup>16</sup> The apparently unarguable nature of this “ability” and its overwhelming importance has been created by first making other talents (such as those noted in the opening paragraphs of this chapter) invisible by deploying measures that cannot recognise those talents and then failing to nurture them (because they don’t exist) thus recursively confirming their non-existence. See Raven (2008)

<sup>17</sup> Other contributory factors include the feeling that schools are not doing as much as they would like to help their children succeed in the norm-referenced scramble for “qualifications” which, they think, would help them to gain entry to “better” jobs.

<sup>18</sup> See Bosch et al (2013) for interesting developments in this area.

<sup>19</sup> A further distortion arises in the evaluation of “learning”. The questions usually asked are “How well have they learned some content?” “Which ‘teaching methods’ worked best?” In reality people are always learning something: how to tolerate boredom; how to create mayhem in the classroom; how to beat the system. The question is: “*What* have people learned?” Not “How well have they learned?” Spearman made a closely related point: “The question is not ‘How well can they think?’ but ‘What are they thinking about?’” Only by asking this question *before* one attempts to assess how well they can think can one begin to get a rough fix on the second question because thinking is a difficult and demanding activity with many complex cognitive, affective, behavioural, and conative components which people will only display when they are engaged in activities they are strongly motivated to undertake.

<sup>20</sup> This parallels a fundamental paradigm shift introduced by Newton. Before Newton, if things moved or changed direction it was because they were *animated*. One had somehow to communicate with them. After Newton it was mainly because they were acted upon by invisible networks of *external* forces which could nevertheless be mapped, measured and harnessed. The study of social systems indicates that we need a similar shift in ways of thinking about human behaviour. Behaviour is *mainly* controlled by networks of external forces and only to some extent by the individuals. This finds expression in a statement that has become commonplace among systems thinkers: 94% of the observed variance in behaviour is determined by the system; only 6% by the individuals. The significance of this observation has not yet registered among psychologists. It involves nothing less than turning psychology outside in.

<sup>21</sup> Comprehensive because what is good for the individual may be bad for society. What is good in the short term may be bad in the long term. An activity which may have some desired and desirable effects may also have undesired and undesirable effects.

<sup>22</sup> A fuller discussion of these issues and rather detailed proposals for the design of an alternative public management/governance system will be found in *Managing Education for Effective Schooling* (Raven 1994) and *The New Wealth of Nations: The Societal Learning Arrangements Needed for a Sustainable Society* (Raven, 1995).

<sup>23</sup> How to give due credit to teachers and managers who nurture both the individual and collective competencies displayed by the pupils in the classrooms described at the beginning of this chapter and those officers who deployed similar talents or competencies to similar ends in the US Navy (Klemp, Munger and Spencer, 1977) and in the management of innovative organisations (Kanter, 1985).

<sup>24</sup> Most of my book *The New Wealth of Nations: the Societal Management Arrangements needed for a Sustainable Society* (Raven, 1995) is devoted to developing a socio-cybernetically based design for an alternative public management system. What is needed now is a movement which will contribute to the

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evolution of such an alternative. Such a movement is crucially dependent on the emergence of new beliefs about society, how it works, and the role of the citizen within it (see Raven, 1984).

<sup>25</sup> Currently there does not seem to be so much as a whiff of an image of an alternative governance system ... an alternative governance system with multiple, non-hierarchical, feedback loops ... viz a system which might be characterised as “organic” as in the multiple non-hierarchical feedback systems that govern the functioning and behaviour of animals and plants.

<sup>26</sup> Body temperature, for example, is controlled by about half a dozen feedback processes ... some neural, some chemical, but few, if any, of which pass through the brain. The development of an organism from conception onward is not controlled, as many think, by the genes but by multiple and poorly understood feedback processes between local and distant cells. Evolution and survival is, contrary to common images, dependent on millions of feedbacks to create symbiotic networks of symbiotic living arrangements between animals, plants, and other organisms.

<sup>27</sup> See for example Braudel (2002).

<sup>28</sup> For a fuller discussion of what is involved see Raven & Gallon (2010) and [http://eyeonsociety.co.uk/resources/quest\\_for\\_contributions.pdf](http://eyeonsociety.co.uk/resources/quest_for_contributions.pdf)

<sup>29</sup> McClelland was at pains to point out that societies have not always been concerned with this type of innovation. Some have been preoccupied with conquest. Others with creating a culture that could be characterised as warm and friendly.

<sup>30</sup> Meadows et al (1972). Also known as “the Club of Rome Report”, *Limits to growth*.

<sup>31</sup> Bosch et al (2013)

<sup>32</sup> It would greatly help clarify what it is necessary to do to advance ... ie to clarify the range of competencies and institutional arrangements required ... if I were to discuss the relative role and importance of central (military) demands in the evolution of computers and their miniaturisation and the development of the internet, the procedures actually used to select researchers (which were entirely contrary to the approved procedure of competitive tendering and the evaluation of proposals by “experts”), and the role of widely dispersed personal (intrinsic) motivation. Also important would be a discussion of the recursive, autopoietic systems processes which contributed to the development of computers and the internet on the one hand and the development of the current financial system (which now delivers 50% of GNP in Western economies) via creation of jobs concerned with the investment of fictitious money on the other. Unfortunately these discussions would be out of place in this chapter. It is not too far-fetched, however, to suggest that many of the arrangements which have been introduced to restrict access to funding, control the way they are deployed, and control subsequent publications are designed precisely to constrain adventurous problem-driven research. This, of course, represents but another face in the network of processes we have been concerned to understand and describe in this chapter.

<sup>33</sup> Adam Smith’s “marketplace” was not intended as a mechanism to make money. Indeed money was merely some kind of “ball bearing” or information-bearing note in the system. The “marketplace” was viewed as a basis for a self-organising societal management system which would operate without central direction. Unfortunately, as I show in my *New Wealth of Nations*, it does not, and cannot, work.

<sup>34</sup> Fresnillo (2013)

<sup>35</sup> (Raven, 1994, 1995 and, most comprehensively and concisely, Raven 2006),

<sup>36</sup> Cf Kuhn (1962/1970)

<sup>37</sup> See eg short account of what happened to Spencers’ book on *Competence at Work*.

<sup>38</sup> Klemp, Munger and Spencer (1977); Kanter (1985); Schon (1983).

<sup>39</sup> Raven (1980)

<sup>40</sup> Eg McClelland & Winter (1969), Alschuler (1973), Gorman and Molloy (1972), Stephenson (2001), Winter, McClelland and Stewart (1981)

<sup>41</sup> Thus the teachers whose work was summarised at the beginning of this chapter did such things as encourage their pupils to read specific materials which portrayed the patterns of thought and behaviour – and the consequences thereof – of people who shared their values and, even more, encourage their pupils to visit and work with people who shared their motives ... people varying from archaeologists to undertakers. The managers studied by Klemp *et al* arranged for subordinates who did not share their own motives and values to be placed with and work with others who played very different roles in their organisations.

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<sup>42</sup> Thousands of studies seeking to identify the differential outcomes of college education have been published. Most are not worth the paper they are written on because they fail to tailor the outcome measures that are used to those which an examination of the differential nature of the programmes would lead one to expect. When one conducts a meaningful study (eg Winter, McClelland, and Stewart, 1981) remarkable results are obtained. Stephenson's (2001) account of work at the School of Independent Studies at North East London Polytechnic is sufficient to call the normal programme evaluation procedures into serious question. The authors show that the students (as the writing of Kazdin, 2007 would lead one to expect) developed in a whole variety of different directions. But what is missing from Stephenson's chapter is an account of the enormous care taken by those who developed the programme to create a 9 month opportunity for those who were involved to clarify their motives and values and plan personalised developmental programmes involving, among other things, working with particular mentors. Also missing is an account of the steps taken to come to terms with the problems all this posed for individual assessment. See the work of Burgess and Adams mentioned in the Appendices below.

<sup>43</sup> In the course of discussions between David McClelland, David Berlew, myself and others in the late 1960s we specifically sought a term which would go beyond knowledge, skills, and attitudes and specifically carry with it the notion of an integrated network of motivational predispositions.

<sup>44</sup> See Ollin & Tucker (2012) for a recent example.

<sup>45</sup> See Wolf (2011)

<sup>46</sup> Raven (1997)

<sup>47</sup> Inexperienced drivers recognise as well as more experienced ones when they are getting into danger. But they don't take the appropriate action. This only happens when they have acquired a non-cognitive emotional reaction revealed by their galvanic skin reaction.

<sup>48</sup> See eg Butcher (2001) and Ilott & Murphy (1999, 2001).

<sup>49</sup> The way in which concerns with incompetence stemming from failure to exercise high level competencies gets translated into prescriptions for low level skills to be mastered and demonstrated has been discussed by Ilott & Murphy (1999) and Raven (2001a.)

<sup>50</sup> See Raven (1991)

<sup>51</sup> I have tried, with scant success (Raven 2012), to persuade educational psychologists to get together to promote such developments in their neck of the woods. (It has to be said, however, that all the evidence suggests that, as the material summarised in Figure 1 would lead one to expect, any incipient attempt to introduce an alternative which showed any chance of success would rapidly get closed down).

<sup>52</sup> The majority of "Progressive Educators" have been opposed to any attempt to specify objectives. This majority is made up of two very different groups. One group may be termed the "romanticists". They believe that children should be left to their own devices and thereby learn "instinctively" what is important to them. A larger group is clearer about what it is opposed to than what it is for. These teachers have been appalled by either or both (i) the effects on most children, and thence on society, of the competitive and self-advancement-centred climate which permeates most classrooms and (ii) the selection of a small number of pupils who possess a very limited range of not particularly valuable "academic" competencies (which do not in fact deserve to be so described) for advancement into the most prestigious and influential positions in society. As a result they have been more concerned with destroying the competitive climate and the limited "standards" than with putting something else in their place. (It is this group which is responsible for the cult of mediocrity which is widely associated with Progressive Education.)

Most accounts of classroom processes focus on (i) encouraging students to take "democratic" decisions within the compulsory attendance framework within which schools operate – a framework which deprives pupils of citizenship rights and most of the sources of power and influence which are open to people in capitalist "democracies"- and in which teachers could not allow students to implement many decisions which would command majority support from pupils, or (ii) on "discovering" low-level everyday facts which have nothing to do with each other, little bearing on any area of organised endeavour and little likelihood of being of use to the pupils in the future. Pupils are to "discover" facts which the teacher already knows, and mostly from books - although sometimes from highly directed field trips or from "discussions" which involve guessing what the teacher has in mind. Among the few partial exceptions to this rather damning picture are the writings of Barnes and her colleagues at the Lincoln School (see Barnes and Young, 1932; Tippett et al, 1927)

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<sup>53</sup> Bernstein argues that this invisibility precisely benefits those pupils who were able to work out what these invisible goals were and how to achieve them (eg by ingratiating themselves with their teachers).

<sup>54</sup> Alchuler (1973), Gorman & Molloy (1972), McClelland and Winter (1969)

<sup>55</sup> See eg Flanagan (1954)

<sup>56</sup> See appendices to McClelland, et al (1958).

<sup>57</sup> I am aware that these are widely thought to have been discredited ... but I have not read a single critique written by anyone who has taken the trouble to familiarise him or herself with those frameworks.

<sup>58</sup> See also Schon, 2001

<sup>59</sup> The reasons are interesting. One was that the institutional context in which the lecturers worked led them to do things, such as publish research reports, which would advance their careers and neglect to nurture the competencies of their students (although this was, of course, the manifest reason for their existence). But, interestingly, another came from the students themselves. Basically, they argued that no one could tell whether they were a competent manager or not ... so they had best concentrate on such things as getting promoted ... which involved parading the latest jargon in front of their superiors ... which is, of course, exactly what the so-called "educational" system had been promoting them for doing all their lives.

<sup>60</sup> Raven & Whelan (1977), Raven & Litton (1976/82).

<sup>61</sup> Klemp, Munger and Spencer (1977)

<sup>62</sup> A misnomer if ever there was one! See Archbald and Newmann (1992) for a review. They discuss: the assessment of discrete competencies from samples of work in eg writing business letters, research reports, speaking, handling "in-basket" exercises, running lunch rooms etc. Then they move on to portfolios of work and profiles. The devil lies in the detail: how are the objectives of these programmes to be specified? And how do we know that the specified content is correct? And what about the generalizability of statements derived from the assessments?

<sup>63</sup> Buckingham & Clifton, 2005, Lindley; other authors **Ian: I can't trace a reference in my system. Have you any more luck in your larger data base?**

<sup>64</sup> Burgess and Adams, 1980, 1986 (4)

<sup>65</sup> Stephenson (2001), Adams, E. A., Robbins, D., & Stephenson, J. (1981).

<sup>66</sup> Adams and Burgess (1981)

<sup>67</sup> It may be thought that this problem has gone away. However, Wolf (2011) clearly shows that it has not.

<sup>68</sup> By continuing to focus on knowledge-of-content, these examinations stifled attempts to nurture critical thinking and demonstrations of personal capacity to utilise the scientific method.

<sup>69</sup> For a fuller account see Raven (1994)

<sup>70</sup> I.C.E. (1975).

<sup>71</sup> Dockrell and Broadfoot (1977)

<sup>72</sup> See Powell (2012)

<sup>73</sup> For a discussion see Raven (2011/12).

<sup>74</sup> Raven (2008)