From: Raven, J. (1995). *The New Wealth of Nations: A New Enquiry into the Nature and Origins of the Wealth of Nations and the Societal Learning Arrangements Needed for a Sustainable Society (pp.259-280)*. Unionville, New York: Royal Fireworks Press; Sudbury, Suffolk: Bloomfield Books.
Raven, J. (1995). *The New Wealth of Nations: A New Enquiry into the Nature and Origins of the Wealth of Nations and the Societal Learning Arrangements Needed for a Sustainable Society*. Unionville, New York: Royal Fireworks Press; Sudbury, Suffolk: Bloomfield Books. (Chapters 1 [which summarises the whole book], 4 ["Some Observations on Money"], and 17 [Summary of Parts I to III and overview of Part IV: The Way Forward] are available at www.npsnet.com/cdd/nwn.htm).

Chapter 21

Creating a Pervasive Climate of Innovation

The fundamental question with which we are concerned is how to ensure that our society acts in its own long-term interests. What we have seen so far is that neither Smith's nor Hayek's marketplace, current forms of democracy, dictatorship, nor widely held beliefs about management and the role of the public service can ensure that this happens.

Our quest involves nothing less than finding new answers to the question which Smith and Hayek raised so forcefully: How is society to coordinate and give effect to widely dispersed, largely inarticulate and incomplete information of varying quality and the content of which changes as other people pursue their distinctive purposes by acting on such information as they possess? Different bits of information are possessed by people who value doing different things, have different life styles, define the public interest in different ways, and discount the future at different rates. That is to say, the information is embedded in different contexts which result in its having different implications. What these remarks mean is that the information cannot be prioritised, weighted along any single dimension, or combined using any process akin to a mathematical algorithm. What is more, the personal and social consequences of acting on any particular subset of this information will vary enormously depending on developments emerging from actions taken on the basis of other information by other groups of people. Smith and Hayek were therefore right about the need to invent a *learning system* which had many feedback loops, which encourages multiple contradictory developments to emerge and be subjected to the test of ability to survive, and which enables people to give independent effect to what they know and feel about a wide range of unrelated issues. In short, they were right to disparage wise men and hierarchical systems.

It is important to note, first, that Smith and Hayek's question had, and still has, centrally to do with finding ways of handling *information*. Second, that the economic market place was proposed specifically as a solution to this problem. It has no *intrinsic* merit.

What has been demonstrated is that market mechanisms are not only inadequate to this task, they operate in dysfunctional ways themselves and they supply politicians, public servants, and the public alike (all "wise men" taking decisions) with *mis*information.

Before we can make much progress in trying to discern an alternative, it is necessary to challenge a number of common assumptions. One of these is that "necessity is the mother of invention", with its corollary that "security will stifle innovation". In a more extreme form this belief finds expression in the idea that scientists who are not kept on a "tight rein" will pursue ivory-tower trivia.

In fact, research[21.1] has consistently shown that developments in science and technology come from those who do not have to worry too much about their individual futures or about meeting the demands and expectations of others. This finding does not, of course, imply its converse - that security *breeds* innovation. What it does show is that creativity is inhibited by the need to worry about personal survival.

It is also important to note that, given adequate security, scientific and technical inventiveness depends on such things as a fascination with certain types of scientific or technological activity, a strong personal predisposition to engage in creative and inventive activity in relation to such tasks, a climate of support (including tolerance of the mistakes which inevitably occur), a network of contacts which help to promote such activities, familiarity with the process of developing full-blown activities through piloting (and thus a propensity to learn from experience), and an absence of positive and negative social constraints such as those which stem from the climate of "publish or perish" which has come to characterise the universities.

It is not only scientific innovation that is facilitated by security. Jaques[21.2] has shown that the invention of insurance and the limited company - both of which insulate people from individual financial ruin in the event of business failure - were crucial to business innovation.

Closely related to the myth that security stifles innovation is the belief that bureaucracy has a similar effect. Yet Jaques has demonstrated that most of the important innovations in modern society have originated in, or been greatly facilitated by, the public sector. Backwaters in bureaucracies, where suitable conditions have apparently occurred by chance, turn out to have been the most fertile breeding grounds for innovation in the modern world. As we have seen when we discussed Roberts' work, much of what looks like private-sector innovation turns out, on closer examination, to have been elicited by public servants who exercised the necessary discretion to evaluate and support both individual and teams of scientists. These particular public servants funded people who had demonstrated high-level competence rather than those best able to prepare the kind of paper plans which tend to appeal to bureaucrats. Although Rothschild[21.3] also noted that there was no alternative to public funding for the necessary adventures into the unknown - and, in particular, for the kind of social science that would engage with the urgent and major problems of society - he failed to underline the crucial importance of developing better ways of identifying those who possess the qualities required to adventure effectively, the multiple talents which are required to contribute to the success of such adventures, and the institutional arrangements required to undertake them effectively. As a result, his "customer-contractor" principle has been used to justify exactly the opposite of what he intended - namely the funding of paper plans (and thus the more dysfunctional process of generating and reviewing stacks of paper).

Currently, one of the main barriers to the fundamental change is the high-level of insecurity felt by most of the population. They have to devote enormous amounts of energy to securing their day-to-day livelihood and short-term future. There is no time for public-spirited activity. It would be dangerous to call social institutions into question or to expose the iniquitous

practices of politicians, public servants, or employers. It would be too costly to refuse to work at a socially destructive job.

Serious problems also arise from the fact that the activities which are most crucial to innovation - thinking, reading, experimenting, communicating with others outside the local community - are generally regarded as "not work" by colleagues and managers.

Once again, it cannot be too strongly emphasised that *pervasive* change is required; developments which become possible because of new thinking in one part of a system cannot be translated into effect without a range of related changes. This is most obvious in relation to technical development (compare the earlier discussion on the steam engine). In fact[21.4] Watt, Priestly, Bolton, Wedgwood, Darwin, and others met regularly as a group of self-styled "lunatics" precisely in order to bring such concerted developments into being. We have forcefully underlined the myriad of developments which are required if either our "educational" system or our society are to function effectively.

But it is not simply a question of "releasing creativity". People will display their creativity and initiative in the course of undertaking very different kinds of task. Some people will display their creativity and inventiveness when finding ways of bending or evading regulations so that something socially worthwhile can be accomplished. Others will use rules creatively to secure their own personal advancement or to build empires. Other people have a flair for setting up social systems which promote genocide. Still others show great creativity and initiative when putting people at ease or establishing warm, affiliative relationships. Creating a ferment of innovation that is in some sense *useful* therefore poses a fundamental problem for human resource management. How can one help to ensure that something worthwhile emerges from a situation in which millions of people are displaying their creativity in the course of undertaking a wide variety of potentially contradictory activities? How can one help to ensure that destructive activities are discontinued?

Some form of goal clarification to give a sense of direction to the activity is obviously essential. But this is not straightforward, not least because, as so many historians have shown, numerous activities were at first been rejected have turned out to be productive - and *vice versa*.

In fact, a great deal of *information* is required to mount any meaningful goal-clarification exercise. The task of clarifying what people "want" is, in itself, extremely problematical. Making rational choices is very difficult. People have a tendency to get jealous of - and thus, in a sense, "want" - what others who appear more fortunate have. But they often only see the attractive surface features of a particular way of life (e.g. one that appears affluent) and lack information on such things as the amount of work required to secure the position and the personal and social costs and consequences of pursuing a particular lifestyle. Often people do not want to do the very things necessary to achieve a way of life they believe they would like to have. For example, while wanting the material possessions associated with success in business, they often do not want to do such things as manage a network of financial affairs or work day and night to develop and market a new product. Likewise, many of those who espouse the New Values do not want to do the very things necessary if we are to create a society offering sustainable high quality of life.

A *productive* climate of innovation involves a great deal more than "just getting everyone to do their own thing". It has to involve a cycle of *comprehensive* evaluation and discussion.

The implications of these observations for the role to be performed by public servants are serious. In the first place, to them falls the task of releasing the energy, know-how, creativity, and initiative of the general population to create a hive of innovation. But also to them falls the task of ensuring that the activity results in worthwhile movement. This involves such things as releasing numerous experiments based on tentative understandings of parts of the problem and ensuring that they are comprehensively evaluated and that action is taken on the basis of the results, ensuring that "heretical" viewpoints are expressed and researched, and initiating the collection of relevant information and orchestrating a public debate.

Thompson[21.5] has suggested that these requirements point to the need for what he terms "clumsy", as distinct from "gainly", "streamlined", or "efficient" institutions. They point to the need for arrangements which will lead to the articulation of a wide range of contradictory viewpoints, which will lead to the initiation of many activities seemingly going in different directions, which will harness the (all too often neglected) expertise of "ordinary" people, and which will promote a balance between step-wise, local, and often contradictory interventions, and systems-oriented, but not usually system-wide, carefully-monitored, experimental interventions based on different understandings of systems processes.

Parallel Organization Activity

In addition to setting out to create, through the public service, a general climate of support for, and encouragement of, innovation we need also to do the same within organisations - and, especially, within the public service.

A widespread climate of innovation in the public service - where public servants also collaborate in order to influence the wider social forces which otherwise limit the effectiveness of their actions - will require fundamental change in the way the service is managed. In addition to changed expectations and changes in the criteria used to appraise performance, it will be necessary to introduce a significant emphasis on what Kanter[21.6] has termed "parallel organization" activity concerned with innovation.

Kanter's research - and it is important to note that it was conducted in public sector as well as private sector organisations - our own studies[21.7], those of McClelland[21.8], Klemp, Munger and Spencer[21.9], and Rogers[21.10] show that most innovative activity is *not* carried out by a separate cadre of R&D specialists, but by those who undertake the day-to-day work of an organisation. Innovations - at least those not directly concerning management arrangements - rarely come from managers. This is because managers have little opportunity to observe the problems which need to be tackled, little contact with others dealing with related processes, and little relevant up-to-date information bearing on developments in technical areas.

The main requirements for effective "parallel organization" activity are that:

1. Time and resources are specifically set aside for activities aimed at innovation and improvement.
2. During the time allocated to innovation, working arrangements are non-hierarchical. For effective innovation to occur it is necessary to;
    i. establish fluid networks of *ad hoc* working groups which form and disband as needs change and to which people attach themselves for only so long as their particular talents are required,

ii. bring together people with different talents for different purposes,
iii. seek out, encourage, and recognise the different types of contributions which are essential to successful innovation. Many of these are neither recognised nor capitalised upon in day-to-day activity. The need is to create climates of enterprise or innovation[21.11] to which different people contribute in different ways,
iv. channel resources to those who are capable of initiating, carrying through, and capitalising upon, new activities rather than to those who are only capable of generating paper plans.

"Flat" structures are required for innovation because communication in hierarchical structures filters out novel, potentially risky, ideas so that they never reach those who could release necessary resources. Non-hierarchical arrangements bring those with ideas into direct contact with those who hold the purse-strings. The organisation can then capitalise on the insights of "coal face" workers instead of relying on "management" or "research" to initiate new developments.

3. Managers and staff recognise the value of the wide range of contributions required in any kind of innovative activity, and assemble teams of people who contribute in very different ways to the exercise.
4. Managers and staff identify those best able to undertake effective innovative activity and channel the necessary resources to them.
5. Opportunities exist for people to work with others who are trying to tackle similar problems, both within the organisation and outside it. Such collaboration generates new ideas, strengthens people's resolve to do new things in new ways, and creates a network of contacts who provide help and support when difficulties arise. Innovative ideas tend[21.12] to emerge from networks of individuals who are in touch with each other but somewhat isolated in their own communities. Even after ideas have been tested and made useful as a result of pilot activities[21.13], networks of communication are important because ideas and ways of doing things tend to disseminate through an informal, "cascade" system. Practices tend to be adopted after they have been observed working effectively for others in conditions which are taken to be similar to one's own. People dismiss the ideas and activities of those higher in a hierarchy of innovation as being inappropriate to their circumstances.
6. There is encouragement to form "political coalitions" with others outside the individual's own organisation in order to influence external constraints. (In education, these external constraints include parental expectations, the forces which derive from the sociological functions the educational system performs for society, and the assessment procedures currently in use.)
7. There is access to R&D laboratories to facilitate the development of the concepts, understandings, and tools that are needed. However, these contacts need to be set up in such a way that those concerned - including the clients of the system - are able to initiate and take part in the research and development process itself and influence the perspectives embedded in the research.
8. There is a climate of trust. All who contribute need to know they will share in the benefits. They need to know that management will not simply pocket the profits, that civil servants will not simply use the ideas that are generated to advance themselves and leave others with much poorer terms of employment.

Kanter's conclusions about how to promote innovation are reflected in the arrangements which Revans[21.14] developed and evaluated as "Action Learning". These arrangements involved exchanging senior personnel between firms for several years at a time, supporting

them within the firms by surrounding them by an appropriate network, creating an inter-organisational support group of others who had exchanged positions, and providing them with university contacts. This structure provided the time and support needed to reflect and grow. Those concerned grew in confidence and competence, came to see their organisations and their problems in a new light, and built up an up-to-date pool of specialist information. The arrangements profited those who were directly involved, the firms they came from, and the firms they worked in. Such arrangements are radically different from traditional educational activities and even from most variants of "learning through doing". In the latter the "learning" that is expected to occur typically involves mastering knowledge of content and not such things as relating to problems and people in new ways, or building up the unique understandings, and developing the strategies, required to tackle particular problems.

Components of Network-Based Working Arrangements

Parallel organisation activity involves network-based working arrangements. These are, in fact, a key component in any "culture of enterprise" or innovation and merit special discussion.

The pervasive and interlocking nature of the developments that are needed in society means that it will not be possible to assign precise goals for most people to achieve. Instead it will be necessary for them to function as members of "teams" whose task is to identify goals and problems, solve the problems, and invent new procedures. Within these teams people will have to perform a wide range of distinctive and complementary roles. Because what any one team can accomplish is dependent on what other teams do, memberships should be overlapping so that all aspects of the problem are tackled and so that information flows between teams. The teams will need to be thoroughly permeated by people who are able to release resources to those who have a talent for finding ways of getting important things done and capitalising on chance discoveries. The teams will need to include researchers. The "other teams" with whom they will need to be connected include other local groups, national groups (because many of the constraints on what any local group can do often arise outside the community), and groups from the other side of the world. Extensive computer-based networks and the media will also be involved in disseminating what they are doing to others.

The membership of such networks cannot be determined in advance but needs to evolve. New groups need to be set up as aspects of the issues they are tackling are identified and dissolve as problems are resolved. People with appropriate competencies should be able to join and leave as their knowledge and skills are required and become redundant. Membership also needs to be open to others who have an interest in the topic or activity, whether because it affects them directly or indirectly.

The importance of such network-based working arrangements stems in part from the interlocking nature of many of our problems. Not only are policies in apparently different domains often interconnected but multiple agencies are typically involved in tackling single problems. Clients and benefactors, not to mention others on whom policies indirectly impinge, have conflicting priorities and interests. Many presenting problems are symptoms of a single, more basic problem and single symptoms often have multiple causes.

The problems of modern society have so many connections that they cannot be solved by establishing vast hierarchical - yet fragmented - organisations like the Department of the

Environment, the European Community, or the United Nations. They can only be ameliorated by networks having many lateral links.

It is useful at this point to recall some aspects of network working which were illustrated in our discussions of aspects of the educational system. If teachers behave in the ways we suggested they will need to define their jobs anew. They will need to spend different parts of their day in very different activities and work with other teachers and other organisations in a range of very different capacities.

We saw, for example, that even if we focus on the task of developing educational programmes which will make it possible to nurture different talents in different pupils a host of diverse kinds of activity will be required. It will be necessary for some teachers to find ways of nurturing high-level competencies in pupils. It will be necessary for others to focus on the diversity issue - on how to foster *different* talents in different pupils. It will be necessary for others to seek to make explicit and formalise what these other two groups have learned so that still others can understand and implement the relevant processes. The network working that is required will involve more than links between teachers. It will also involve links between teachers and parents, politicians, administrators, university personnel, employers, economists, researchers and the media.

The advances and developments that will result cannot be specified in advance. The apparent riskiness of each of the component activities can only be reduced by ensuring that time and effort are devoted to articulating what has been learned from whatever happens so that *something* will *always* be achieved, even if it is "only" an advance in understanding.

Network Working Within Hierarchical, Functionally Differentiated Structures

Network working of the kind just described contrasts markedly with the way things tend to be organised within most of our traditional organisations. According to Schon[21.15] the introduction of network working is dependent on creating roles like the following: entrepreneur, organiser, advocate, consultant, prophet, artist, and visionary. However, his studies suggest that the following are particularly important:

Young Turk. These are usually bright young people recruited for positions with unusual access to those concerned with policy development. They are exposed to the views of those at the top and have the function of challenging those in authority. This role may be strengthened through the creation of informal networks linking people performing the role in different departments and at different levels in the organisation.

Systems negotiator. These are people who help others find ways through or round a difficult, isolated, or rigid system.

Underground manager. Someone who maintains and operates informal, "underground", networks of contacts. His or her operations are pursued through personal relationships, often having little to do with the formal arrangements of the organisation.

Manoeuverer. Operating on a "project" basis, such people are able by applying their human relations skills to persuade or coerce organisations into making the shifts required to realise a project which cuts across institutional lines. (Schon cites as an example someone who is able to get a housing project initiated in cities having a large number of agencies and geographic boundaries.)

Broker. The kind of person who connects buyers and sellers. He or she helps each to identify the other, serves as a channel for information, and negotiates deals. He or she can cut

through red tape because of a friend in the right place who owes an obligation for something done in the past. Such a person becomes the "node" connecting various contacts, some of whom may be antagonistic to one another.

Network manager. A kind of overseer who assures the flow of information and the provision of resources. He or she keeps track of what is going on and follows up as necessary.

Facilitator. Those who foster the development and interconnection of different enterprises need the skills of a consultant, guide, and connector. They provide training and consultation to departmental and regional personnel so that they can maintain their own networks.

Schon argues forcefully that those who perform such network roles are "marginal" personnel, implying both the negative connotation of "not being central" and the positive one of "being at the forefront".

Necessary Changes in Expectations of Public Servants

The changes which have come about in modern society, the inadequacy of democracy, and the developments that are needed, that it is no longer appropriate to regard public servants as mere functionaries whose job it is only to do the bidding of elected representatives.

The job descriptions for *all* public servants need to include:

- Contributing to the creation of a pervasive climate of innovation in society. Among other things, this will involve contributing to a public debate about what is in the long-term interests of society. It will also involve calling attention to previously overlooked goals and activities which ought to be pursued. Teachers, for example, have a responsibility to call attention to the competencies which are not being fostered in schools and to those that could be fostered given appropriate types of educational programme. It is actually a gross dereliction of duty for a public servant to fail to do this.
- Releasing the public's energy into a debate about how societal goals, and the goals of particular policies, are to be achieved.
- Releasing public energy to articulate numerous, and often contradictory, definitions of problems in a specific area and the connections between those problems and problems in related areas.
- Encouraging members of the public, not only to set up experiments designed to tackle problems in a particular area, but to do so in the context of proper arrangements to learn from them, and, in particular, to learn about systems processes and publicise the results.
- Spending as much time as necessary outside their own organisations in order, individually or with others, to influence, and gain control over, some of the wider social forces which detract from effective job performance.
- Taking responsibility for their own personal development - for moving themselves into positions in which they develop new competencies and acquire idiosyncratic stores of *relevant*, up-to-date information
- Soliciting, collating, and considering information, using it to come to good discretionary judgments about what should be done, taking the initiative required to bring these developments into being, and introducing proper monitoring arrangements which will make it possible to learn more about the nature of the problem and the steps needed to solve it.

If public servants are to do these things, it will be necessary first to agree that these are indeed things they should be doing and then to develop the tools and procedures needed to hold them accountable for doing them. Clearly, the evaluation procedures that are required include means of finding out whether those concerned have been able to do such things as release the energy, enthusiasm, and initiative of both those who work under them and the public more generally. Furthermore, any system of individual appraisal must be set in the context of team and organisational appraisal, not only because it is necessary to find out whether our organisations *qua* organisations are functioning effectively but also because what one person *can* do is heavily dependent on what others do.

What is more, since innovation is primarily a cultural activity, it would be invidious to suggest that - if a wide range of people are contributing effectively but in very different ways to that climate - one person's contribution merits greater financial reward than another's. What is needed is, first, wider recognition of the dependence of all on the past and on each other and then some means of recognising the distinctive contributions of every group member.

Day and Klein[21.16] have argued that there has *already* been a move to do the kind of thing advocated here - i.e. to hold public servants individually accountable for acting in the long-term public interest. The legal system has started to hold public servants accountable for acting "in conformity with the public interest and public good as defined, not by shifting political processes or ideologies, but by enduring precepts of an over-arching value system". They point out that there is no reason why managerial accountability, whether for fiscal (Was the money spent as agreed?), procedural (Were the agreed procedures followed?), or outcome (Did the programme achieve its goals?) purposes should flow through bureaucratic/democratic, hierarchical channels.

Changes in Beliefs About What "Management" Involves

We turn now to the new expectations which we need to develop about managers - whether those managers are heads of telephone exchanges, academic departments, schools, or research institutes.

The job of a manager is *mainly* to create a climate characterised by innovation, enthusiasm, dedication, and hard work.

To do this a manager needs to:

- Bring together colleagues and researchers who can contribute in different, yet mutually supportive, ways to an innovatory process.
- Encourage all concerned to set themselves high standards for innovatory activity, take responsibility for setting and achieving goals, initiate action, monitor their performance, take corrective action, and capitalise upon "chance" discoveries.
- Create an atmosphere which is supportive of innovation, which encourages people when things go wrong, and which acts to ensure that something worthwhile always comes out of any activity which is initiated. This means creating an appropriate network of contacts between staff both within and outside the organisation.
- Influence outside opinion. This will often involve forming coalitions with managers of other organisations in order to bring effective pressure to bear on authorities and in

this way gain control over some of the wider forces which otherwise so much limit what can be done within any one organisation.

- Stimulate public debate about the goals of the organisation and the wider structure of which it forms a part. In practice, it is important for managers to feed into that debate new concepts of wealth, the terminology required to think about alternative goals for the organisation and how they are to be achieved, new understandings of the ways in which bureaucracies should relate to the public, new ideas about the way bureaucracies should be supervised and held accountable to the public, and new concepts of equality.

The manager's job is not only to take decisions and issue directives: It is to release and harness the energies of independent, thoughtful people who take personal responsibility for acting in the public interest and are willing to be held accountable for so doing.

Participation in the management process needs to be arranged with a view to ensuring that all concerned understand what is to be done and how it is to be done, to foster commitment to the organisation and new developments, to help clarify the variety of different roles required, and to encourage effective performance of those roles[21.17]. It can also form a vital part of staff development by enabling subordinates to participate in their managers' thought processes, their prioritising, their anticipation of future difficulties and invention of ways round them, their establishment of "political coalitions" to gain control over forces from outside their organisations, their feelings of doubt and the way in which they take initial soundings and grow in confidence, and other features of personal and managerial competence[21.18]. Dore and Sako[21.19] have shown that such experiences are of crucial importance in the growth of competence of the Japanese - contributing much more to the success of Japan than any differences between their educational system and those of other countries. Our own work[21.20] has shown that dramatically different proportions of American and Japanese managers say it is important for managers to think about the talents of their subordinates and how to place and develop them, and that this appears to be one of the keys to Japanese economic success.

The term "delegation of responsibility" is utterly misleading. It implies that managers (or central politicians) are to hand over some part of what is rightfully their job. Instead, jobs need to be *defined* to include responsibility for such things as taking initiative, exercising judgement and discretion, initiating action based on feelings, monitoring developments etc. No one should have to spend a great deal of time trying to justify prospective courses of action to others who do not have first-hand knowledge of a problem or an appreciation of the personal resources which can be brought to bear to invent ways of overcoming unexpected difficulties.

It is important to appreciate the implications of what has been said. We need to hold our managers accountable, not for having made no mistakes, not for the accuracy of an individual decision - but for having engaged in *processes* which are likely to result in better ways of meeting a variety of needs, a general climate of innovation, and improved prospects for the survival of the species and the planet.

In this context - emphasising that it is important to ask whether public servants have followed *procedures* which are *likely to result in* innovatory actions in the long-term public interest rather than whether the individual decisions they have taken are correct - we may note that Simon[21.21] has come to much the same conclusion from a very different starting point. Simon

argues that it is necessary to distinguish between different criteria of organisational rationality, and especially between *procedural* and *substantive* rationality.

Procedural rationality involves evaluation of action against the criterion of whether the *procedures* adopted are likely to result in the achievement of important long-term goals. Judgments of *substantive* rationality, on the other hand, require us to decide more narrowly whether individual *decisions* were rational (or correct) given the ends to be achieved, the context in which action was to be taken, and the means which were available.

Assessing the substantive rationality of a decision or course of action assumes that relatively complete, if probablistic, information on processes, options, and their outcomes was and is available. This type of rationality is therefore only of any relevance in relation to clearly definable and isolatable problems involving a small number of variables. Focussing on whether an individual decision *was* (substantively) rational therefore tends to preclude consideration of wider and longer term considerations which might have been - and often ought to have been - taken into account.

Given the complexity of ecological processes, it is only feasible to assess the *procedural* rationality of actions affecting ecological systems. Interestingly, Jaques[21.22] has in effect - and without using the term - argued that, in evaluating managerial performance, it is primarily with their procedural rationality that we should be concerned because one of their primary responsibilities is to forge high-level, discretionary judgments in situations where there can be no certainty and then to initiate action and learn from its results.

Following Simon's logic, Kelton[21.23] conducted a remarkable evaluation of whether the procedures adopted in connection with industrial development in British Columbia were procedurally rational - and found them seriously wanting. We would expect that comparable results would be obtained if similar studies were made of other policy domains.

Diesing[21.24] has identified decision taking about the structures and procedures to be adopted when taking *political* (managerial) decisions as the most important area in which rationality is needed. Unless rational decisions are taken about these ultimately determining structures and processes, no successful reasoning, or decision-taking can occur in relation to the most fundamental issues which determine our own and the planet's future. There can be no conflict between political rationality and any other kind of rationality, because only the solution of political problems ultimately makes possible an attack on any other problem. Conversely a serious deficiency in the arrangements for taking rational, political decisions can prevent or undo all other problem-solving.

Bartlett[21.25] has further argued that the most fundamental area in which rational, political decisions are required is in connection with communal ecological decision taking. Unless all other decisions are in accord with the complex systems processes of ecology, there can be no long-term future. To arrive at decisions which are in accord with Gaia, he argues that we are heavily dependent on science as a source of insights into the considerations which ought to be taken into account and the consequences of alternative actions. It is in this way, he argues, that science becomes centrally identified with the moral. When humankind's moral values depart too far from nature's ways humankind will be frustrated. Yet, as we have seen, and as Thompson has argued, many as yet "unscientifically tested" insights also need to be taken into account because our "scientific" knowledge is altogether too thin. The central issue therefore has to do with finding ways of harnessing all available insights to come to good

quality decisions - i.e. it has to do with defining the arrangements required to achieve procedural rationality in public management.

Components of a Climate Conducive to Innovation and Improvement

McClelland and his co-workers[21.26] developed a framework for investigating in greater detail the components of the "parallel organization" activity required for innovation.

A climate conducive to innovation in any organisation, and in society more generally, is one in which the motivational dispositions of all concerned are developed, released, and utilised to enable people to contribute in very different ways to the achievement of widely accepted goals. This enables people to take more initiative in their day-to-day activities and allows them to gain more control over social constraints on their behaviour.

A climate conducive to innovation involves at least the following:

(1) *Concern with clarity.*

Effective goal achievement requires clarity concerning the goals that are to be achieved, how they are to be reached, how to determine whether they are being reached, and how to overcome the barriers to their achievement. However, the "clarity" of an idea does not demand its "clear" formulation in words. Innovatory activity often originates in *feelings*. One might, for instance, become vaguely aware that something is not quite right, or that it might be important to embark on a particular activity. Such feelings lead directly to "experimental interactions with the environment" or "conversations with the problem" in which one initiates some activity to see what happens. The effects of actions initiated either as a result of carefully thought out plans or on the basis of hunches are also often monitored affectively rather than intellectually. The feelings that are evoked by seeing the effects of one's actions may - and usually do - lead directly to further action without their becoming conscious and verbalised. The whole process may lead to an "understanding" which remains unverbalised. But its existence can be demonstrated by doing such things as asking the manager of an international company "What will happen in Germany if I do this in Britain?". The answer may be quick and accurate but the explanation of *why* may take hours. The point is that, despite the fact that such processes are often non-cognitive there is a sense in which anyone undertaking activities of this sort *is* concerned with clarifying problems, their nature, and potential solutions.

Without a "concern with clarity" of this kind there can be no meaningful concern with effectiveness. Without it, it is not possible to set effective achievement targets, monitor performance in order to identify what has been achieved and learn more about the situation in which action is being taken, test out potentially more effective ways of achieving the goals, or get credit for having achieved them. Nor can new ways of doing things be disseminated - for this involves making goals, processes, and monitoring procedures explicit.

(2) *Explicit emphasis on the importance of innovation*.

One of the most crucial pre-requisites to innovation is a feeling that it is somehow personally important, as an individual, to find new ways of thinking about scientific or technical matters, to invent better ways of carrying out social or technological tasks, or to articulate new social and technological goals to be achieved. Diffuse personal commitment of this kind is very

much at odds with the kind of fatalistic, external, belief system that finds expression in the view that everything would be fine if only the government introduced some particular regulation or provided more money.

Our research indicates that, by international standards, the UK and the United States have relatively few people who think it *is* personally important for them to become involved in innovation or to do such things as get people to work together effectively to do new things.

Saying that the problem arises from a lack of "the work (or Protestant) ethic" misleads. The question is what people will work *at*. The kind of work that yields social or technical innovation has never been clear, widely approved, or well-rewarded. It has *always* been regarded as peripheral *non*-work (except, perhaps, in Japan). It involves thinking, discussion, making contact with others, reflection, reading, and hunch-based experimentation - all of which are denigrated as "time wasting" activities. Indeed, it has widely been derided. Those who have engaged in it have always needed personal security. The problems are to provide the right kind of security and to define the right kind of "non-work" as work. We are concerned here with the kind of activity people are strongly motivated to undertake or *value*. People will display endless dedication, initiative, and creativity in the course of carrying out activities they care about. The question is whether a culture is permeated by a valuation for social and technological innovation and facilitates the work of those who are predisposed to engage in such activities.

(3) *Recognition of accomplishment using a differentiated framework for thinking about competence*.

As we have seen, innovativeness, enterprise, and most forms of intelligence are cultural rather than individual characteristics. Successful innovation requires that one builds on the work of others, and that one's work is itself built upon.

An integral feature of any innovative climate is some means of recognising the contributions of a wide variety of people including those able to sift information for forward-looking, *potentially* useful, ideas, and people who formalise what has been learnt in the course of "failed" projects - so that such projects can no longer be described as failures.

Innovative activity often does not lead to tangible results. Such difficult, demanding, and frustrating activity is frequently fruitless. No one should be considered only as good as the success of his or her latest venture. Of much greater importance are the understandings and competencies possessed - often developed over a long period of time - although these are very hard to identify.

This discussion underlines the need for a mechanism whereby all genuine contributions and accomplishments, however intangible, can be recognised and credited. This is why the descriptive statements about competence made in the course of "parallel organization" activity are so important. However, there is a clear need to formalise such information and systematically identify, develop, and utilise previously unrecognised competencies. Adams and Burgess[21.27] have developed exactly such a system for use in schools. Teachers keep a record of the activities they have undertaken which are personally important to them and their success in undertaking them, noting their hopes, aspirations, and disappointments. This information enables them to assess and review their own motives and accomplishments and make plans for the future. Discussion of these records of accomplishment between colleagues

leads to a mutual understanding of each others' contributions, strengths, motives, values, and unique competencies. Colleagues, superiors, and subordinates become better able to support, encourage, and capitalise upon, each others' motives and talents. Subordinates are able to *participate* in the "managerial" process of setting organisational and individual goals while getting recognition for their contributions *in terms which are personally important to them*.

(4) *An emphasis on staff development and the creation of developmental environments*.

Innovation in the public service requires a wide variety of people to perform very different functions. It follows that the emphasis in staff assessment should be on guidance, placement, and development and not on selection. The importance of focussing on staff development is underlined by the fact that, as shown in our other work[21.28], important competencies are typically developed on the job - to such an extent, in fact, that off-the-job training should largely be abandoned. Unfortunately, there are very strong sociological forces which encourage it: Employers are reluctant to invest in staff development if those concerned are likely to leave for another employer; it takes time away from other "productive" activities; and, despite the fact that selection and promotion are heavily based on (largely useless) paper qualifications, there are no accepted means of identifying competencies which have been developed in the workplace.

The establishment of a climate of innovation both within the public service and in the wider society requires the creation of *developmental environments* from which everyone will benefit. Put another way, we need to apply what we know about developing high-level competencies to nurturing, recognising, and utilising the competencies of all members of society. This means that people need opportunities to practice and develop high-level competencies. They need opportunities to participate in innovative activity so as to learn how to tolerate and handle the tensions involved and how to engage in the cyclical learning processes required. Instead of depending on centralised direction, they need to learn how to engage in a systems-oriented, but locally initiated, process of analysis followed by multi-pronged, step-wise, intervention involving trial, monitoring, "reflection", and improvement.

Many people need experience of gaining control over external forces and to view such activities as crucial parts *of their jobs*. If they are to do this, people need the kind of opportunities that a few already have to participate in the management of their organisations, not by serving on committees, but through the active performance of managerial roles - setting goals, motivating people to work together effectively, and dealing with those inclined to sabotage the process[21.29]. They need to take more responsibility for their own development and set up networks of contacts which help them to keep abreast of developments in their own specialist area[21.30].

(5) *Encouragement to identify and tackle extra-organisational constraints*.

Organisations do not exist in isolation. Public servants' actions are markedly affected by the expectations of their clients, other public servants, and politicians. More fundamentally, their actions are controlled by the role their organisations play in the perpetuation and maintenance of the current social order. In the past, public servants have not been expected to participate in a public debate about the goals of their institutions. As will by now be apparent, however, such activity is crucial to finding better ways of running society and thus to the effective performance of the task of the public servant.

But this is not the only way in which public servants need to become more involved in activities *outside* their organisations. Some of the other ways may be clarified by an example. Public servants seldom know how to deal with a group of clients demanding change, particularly when clients have very different priorities and demand incompatible changes. Public servants tend to define such situations as problems which are incapable of analysis and solution. At best they regard them as someone else's responsibility. They tend to avoid creating situations which would lead them to have to deal with them.

It is, in fact, too much to expect most public servants to solve such problems on their own. What we need to do is to ensure that they can, through "parallel organization" activity, initiate the research needed to articulate such problems and participate in the activities required to tackle them.

The analysis of systems constraints would become easier if it were common practice to draw up diagrams of connections and feedback loops like those discussed in Chapter 20.

(6) *Appropriate support*.

It is essential, in any innovative environment, that colleagues offer each other help and support when difficulties are encountered. Any criticism offered must be constructive rather than destructive, emphasising the worthwhile aspects of the task accomplished rather than its failures. New ideas floated amongst a group of colleagues should be examined for their innovatory potential instead of their limitations and the practical problems they pose.

Those engaged in innovative activity cannot expect to meet with the approval of everyone they encounter. If they are not to be discouraged, it is therefore essential that innovators have a network of contacts to provide support, ideas, and encouragement.

(7) *Network working.*

The research of Rogers[21.31] shows that high-level innovators establish cosmopolitan networks of contacts which provide access to developing intellectual ideas. Others have networks which enable them to observe the work, and adopt the practices, of contacts at a similar level in the hierarchy of innovation. If people are required to review the work of those too far ahead in their field, they tend to dismiss the work as inappropriate to the circumstances in which they find themselves, citing differences in resources, clientele, etc. A facilitative "cascade" structure is required so that information flows between proximate levels. This need is not met by the kind of cascade structure, often envisaged in training schemes, in which master trainers are meant to train senior trainers, who train trainers and so on. Such a system takes no account of the person's present position, individual competencies, or external constraints.

(8) *Monitoring and review activities.*

Our research has revealed an urgent need for more regular and systematic clarification of the goals of policy, assessment of whether they are being achieved, if not why not, and what can be done about it. There is, at present, little activity of this kind. Any performance appraisal that occurs tends to be associated with selection for promotion rather than staff development. It tends, therefore, to be experienced as threatening rather than supportive. We have also encountered a great deal of scepticism of systematic monitoring. This seems to derive from

two sources. First, it is rightly suspected that any formal measures of goal achievement would not reflect the most important aims of the department concerned because these are "intangible and difficult to measure". It is widely recognised that the introduction of narrowly-based, quantitative measures tends to yield misleading results which lead to a concentration on easily assessed goals and the neglect of more important ones[21.32]. Second, it is a commonplace that the results of evaluation exercises tend to disappear into the files of some external agency without having any effect on the programmes concerned[21.33].

More systematic activity requires both informal and formal monitoring.

Informal monitoring

The elusiveness of important goals (e.g. in education and health care) is no excuse for failing to monitor progress towards them: Failure to introduce appropriate monitoring arrangements leads to a neglect of *all* standards. The attempt - in an appropriate context - to develop ways of measuring, or indexing, important but intangible outcomes leads to greater clarity concerning goals, their achievement, and their assessment.

In any case, many goals are not so intangible as is often claimed. This may be illustrated from one of our own projects[21.34]. In seeking to discover whether primary school teachers utilised out-of-school visits in ways which would foster high-level competencies we examined displays produced by pupils following a zoo visit. Most of the exhibits consisted of pictures of animals, accompanied by statements about conservation or the animals themselves. These evidently derived from information presented to the pupils. There was little evidence that the visits had been used to develop pupils' powers of observation, their ability to form an understanding of ecological processes, the influence of economics on such processes, or the pupils' own role in this cycle. It appeared that the teachers' focus had been almost exclusively on low-level language skills, craft work, and book-reference skills. Clearly, the work "behind" the displays and murals involved much closed questioning and an emphasis on what are so often called "academic" skills - low-level memorisation which involves no judgment, analysis, synthesis, or critical thinking[21.35].

The point of this example is, however, to illustrate how an attempt to obtain evidence about the attainment of policy goals led to an improved understanding both of the goals to be achieved and the means to their achievement.

Formal evaluation

Two kinds of formal evaluation activity need to be considered:

(a) *Outcome-focussed evaluation*. Formal evaluation procedures are most useful when routinised procedures have been introduced to achieve clearly defined and stable goals. In the public sector the task is more difficult than in industry. Firstly, it is difficult to assess progress toward many of the most important goals of public provision. Secondly, the goals to be achieved need to vary so much from person to person. If outcome-focussed evaluations are not to direct attention away from the most important goals, it is essential that the evaluations be broadly based. That is, they must cover *all* important outcomes, whether "easy to measure" or not, whether desirable, undesirable, or even unwelcome, and both intended and accidental[21.36].

(b) *Process-focussed evaluation*. Process evaluation studies the processes with a view to inferring the outcomes to which they are likely to lead. Thus sophisticated "classroom climate" schedules can ascertain whether the processes employed by a particular teacher are likely to lead to the development of high-level competencies[21.37]. This is achieved by asking pupils about such things as the values of fellow pupils and teachers, the kinds of activities which are encouraged and rewarded, whether they themselves think it important to attempt new things, and what they think would be the consequences of such attempts. Walberg and Howard[21.38] in the educational area, and many others in the industrial sector, have shown that information collected using such procedures can be used to create more productive and developmental environments. The classroom environment data collected by Howard were fed to a series of groups made up of parents, teachers, and administrators. They were asked whether they liked what they saw, what its consequences were likely to be, and what could be done to improve the situation. Repeat assessments were made to see whether the suggested changes had had the desired effect. Note that what the bureaucracy was doing was providing measures and then feeding information outward to the public rather than upward through a bureaucratic hierarchy. Note also the use of a multi-interest external group to give teeth to the information collected.

These observations suggest that the formal review process is less important than the understandings and procedures accompanying it. To be functional, those procedures must recognise the value of pursuing hunches and that effective behaviour often involves the following, apparently illogical, sequence: feelings -> behaviour -> understanding of the reasons for the feelings - and recognition (only lastly) of the real objectives and purposes of the activity. Review processes must acknowledge the importance of supportive *discussion* geared to the generation of enthusiasm and understanding, rather than trying to gain an accurate measure of the "quality" of previous performance. It is the cyclical, or iterative, improvement in depth of understanding which results in innovation - one cannot plan an adventure into the unknown with any precision. Review processes to support and stimulate innovation must be flexible and encourage those concerned to capitalise on "chance" discoveries, learn from "mistakes", and follow up unanticipated leads. Reassurance and help is often needed to overcome the fears and anxieties associated with the exploration of unknown territory.

(9) *Procedures for handling conflict.*

In creating a climate which supports innovation, explicit steps need to be taken to ensure that differences of opinion come into the open and are dealt with. Nothing undermines the effectiveness of an organisation more than a tendency on the part of its employees to acquiesce when decisions are being made but then to engage in activities which undermine those decisions.

What is needed is shared recognition that it is important to pay attention to differences of opinion and make their implications explicit. Differences of opinion do not have to be interpreted as signs of personal animosity. Indeed, they should be regarded as positive tensions offering springboards to action. It is very important to avoid the inclination to merely acknowledge and accept them by such mechanisms as attributing them to "personality clashes". This absolves those concerned from responsibility for thinking about the *cause* of the problem.

In any new scheme of things it will be necessary to pay particular attention to arrangements for conflict management. Within Western society the traditional rhetoric (workers vs. capitalists) has in some senses become obsolete (although, cross-culturally, it has become a more important source of differences and tensions than it ever was within societies). Within Western society which is so largely composed of huge, largely monopolistic, institutions, the conflicts of interest which find open expression are usually between one group of workers and the general public or between one (often advantaged) group which has acquired a position of power and fellow citizens.

(10) *An appropriate concept of risk.*

There are three sets of related problems associated with risk in the public sector. The first set can be characterised as risk aversion; the second has to do with the absence of the strategies required for effective innovation; and the third with the equation of risk with gambling.

Suggestions as to how public provision might be improved are often undermined by pointing out that they have not been tried and tested. It is said that "One cannot take risks with public money". The truth behind such assertions is usually that the public servants concerned are averse to taking responsibility for risky activities. Given the role of public servants in the management of modern society, such abdication of responsibility is highly damaging. However, public servants *do* need opportunities to develop the competencies required to undertake adventurous activities, just as the public needs to develop more appropriate standards and criteria against which to judge the activities of public servants.

But an even more serious problem faces the public service. This is the absence of any concept, or experience, of how innovation actually occurs. On the one hand there is a tendency to introduce system-wide change on the basis of very poor research - indeed, without *any* attempt to find out how the different components in the proposed change have worked elsewhere. On the other hand, when decentralised attempts to initiate pilot programmes of change - like the Lothian Region EHV programme[21.39] and experimental attempts to implement the Sneddon Committee's recommendations of reform in teacher education[21.40] - are introduced, it rapidly becomes clear that those concerned lack the experience and expectations that are needed. They tend to assume that those in authority *know* what needs to be done and that, if things go wrong, they themselves have no responsibility for getting the activity back on course. They tend to blame their colleagues rather than the initial understanding which informed the proposal and the activities which have been proposed. Most seriously those concerned have very little experience of the step-wise nature of innovation - of the process of small-scale trial, monitoring, generation of better understanding, and gradual extension of activities. They do not know that one cannot have innovation without failure. They have no experience of the frustrations and setbacks which are inevitably involved and do not know from their previous experience that they can invent ways of overcoming these and obtain something useful out of the activity. They do not know how to - and have no network of contacts which would enable them to - learn from other projects about successes and failures. They tend to look for grandiose, system-wide changes which will solve all problems. It is true, of course, that many of the problems of the educational system (for example) cannot be overcome without system-wide change: Witness the comprehensive control exerted by tests and university entrance and employers' requirements. But even here it is possible to find out whether elements of the desired changes work, to change one examination board's activities, and to persuade some universities and employers to accept a different group of candidates without changing everything.

In order to reap the benefits of innovation, a reasonable degree of failure must be anticipated. There must be an appropriate level of tolerance of false starts coupled with an enhanced capacity to learn from, and capitalise upon, adventures that have "failed". The risk to be taken is not a gambler's risk, but simply that involved in a speculative attempt to find a way of ameliorating a problem or effect important change.

A climate which is conducive to innovation must therefore - while tolerating failure and resisting the temptation to insist that one be certain that any particular course of action will succeed before embarking on it - ensure that those concerned have the competencies and support structures required to ensure that something worthwhile emerges from virtually any activity initiated.

Summary

In this chapter we have discussed the changes needed to create a climate of innovation directed toward finding ways of implementing the "new values" and running the public sector more effectively. There is a need to allocate time for, and create appropriate structures to carry out, what Kanter has called "parallel organization activities". These require "flat", non-hierarchical arrangements which allow information to flow freely between people at different levels in a bureaucratic structure and enable resources to reach innovative individuals. Such activities also require the establishment of networks of contacts involving other departments and organisations with similar or relevant interests.

More generally, we have discussed those dimensions of organisational climate which require attention if innovation is to be promoted. New job descriptions for all public servants are called for. It will be necessary to evolve new concepts of management. Developmental environments must be created so that all concerned can develop high-level competencies. Public servants should be encouraged to spend more time *outside* their offices attempting to gain control over the social constraints which currently prevent them pursuing important goals effectively. Most important of all, it will be necessary to find ways of giving all concerned credit for engaging in such difficult and demanding activities. Adams and Burgess have developed a mechanism for promoting the flow of information between different levels in a hierarchy, encouraging recognition of neglected concerns and competencies, providing a support structure, and offering recognition for the outcomes. Their work shows that it is *not* necessary to wait for legislation and sociological change before anything can be done: It is *now* possible for public servants to act in a more professional way to gain more control over their destinies and do their jobs more effectively.

Addendum to This Chapter

In order to help an organisation or society to collect data on the kinds of behaviour valued by its members and the perceived barriers to translating those values into effect, cumulate those data, and then take a look at themselves in a kind of a mirror, asking themselves whether they like the look of what they see and what the consequences are likely to be (changing their concerns in the process), the author and his colleagues have developed a cluster of questionnaires known as *The Edinburgh Questionnaires* and collected and published some illuminating cross-cultural data[21.41]. The suite of *Questionnaires* needs to be extended to better sample people's beliefs about the workings of economic and political processes, roles in organisations and society, the meanings of terms like money, participation, and

management and the way society works more generally. They, in particular, need to be modified in such a way that people living in non-Western societies can express their dominant concerns and values. This can only be done through a sophisticated programme of exploratory interviewing. Nevertheless, as they stand the *Questionnaires* are designed to help people to articulate their concerns and competencies and set that information in the context of a pool of cross-organisational and cross-cultural reference data.

Notes

21.1 McClelland, 1961, 1962; Oeser and Emery, 1958; Pelz and Andrews, 1966; Roberts, E.B., 1968; Rogers, 1962/83; Taylor and Barron, 1963
21.2 Jaques, 1976
21.3 Rothschild, 1982
21.4 Pearson, 1945
21.5 Thompson, 1979
21.6 Kanter, 1985
21.7 Raven, 1984
21.8 McClelland et al., 1958; McClelland, 1978
21.9 Klemp et al., 1977
21.10 Rogers, 1962/83
21.11 Gardner (1987) has termed these "cultures of intelligence" and provided a revealing discussion of what is involved.
21.12 Roberts, E.B., 1968, 1969; Rogers, 1962/1983; Schon, 1973
21.13 Rogers, 1962/83; but see Raven (1985) for a discussion of the misunderstandings of these terms in education.
21.14 Revans, 1971, 1980, 1988
21.15 Schon, 1973
21.16 Day and Klein, 1987
21.17 Adams and Burgess, 1989; Raven, 1994
21.18 Raven, 1984, 1994
21.19 Dore and Sako, 1989
21.20 Graham and Raven, 1987
21.21 Simon, 1976
21.22 Jaques, 1976, 1989
21.23 Kelton, 1991
21.24 Diesing, 1962
21.25 Bartlett, 1986
21.26 Klemp et al., 1977; Litwin and Siebrecht, 1967; McClelland et al., 1958; McClelland, 1978; Raven, 1994
21.27 Adams and Burgess, 1989
21.28 Raven, 1984
21.29 Klemp et al. (1977) have described the process among American Naval Officers. Jaques (1976, 1989), Deming (1980) and Dore and Sako (1989) have also contributed relevant work. A fuller discussion will be found in Raven (1984).
21.30 See Rogers, 1962/83.
21.31 Rogers, 1962/83
21.32 These fears are well founded (Raven, 1988, 1991). Adams et al. (1981) clearly demonstrate this effect in the polytechnic they studied, while much of our own research has documented the effects which "payment by results" has in education when very few of the most important outcomes show up on the measures. A fuller discussion of the damaging effects of the limited range of formal evaluation procedures will be found in Raven (1984, 1985, 1991).
21.33 Harlen's (1984) research shows that this is indeed the case.
21.34 Raven and Varley, 1984
21.35 The assertion that there was no evidence that the pupils were doing these things is dependent on introducing and applying criteria that the teachers were *not* using (Johnstone & Raven, 1985; Raven, Johnstone & Varley, 1985).
21.36 Compare Raven, 1984, 1985, 1991.
21.37 The words "high-level" are intended to signal that the low-level measures of the kind produced by Walberg (1974) deflect attention away from the relevant issues.

21.38 Howard, 1980, 1982a,b&c; Moos, 1979, 1980; Walberg, 1974, 1985; Walberg and Haertel, 1980
21.39 Raven, 1980
21.40 Sneddon Report, 1978
21.41 *The Edinburgh Questionnaires* (Raven, 1983, Raven & Sime, 1994); Graham and Raven, 1987; Raven, 1984