

■ Research Paper

Creative Holism: A Critical Systems Approach to Complex Problem Situations

Michael C. Jackson*

The Business School, University of Hull, Cottingham Road, Hull, UK

The 49th Annual Meeting of the International Society for the Systems Sciences had, as its theme, 'the potential impacts of systemics on society'. As my contribution to this, I want to discuss why I think a critical systems approach called 'creative holism' can help managers address complex problem situations. As is frequently stated, managers today face increasing complexity, change and diversity. Furthermore, the solutions they are offered to help them cope in this situation rarely seem to work. In this paper, it is argued that those solutions fail because they are not holistic or creative enough. The benefits to be gained from holism and creativity (in a systemic sense) are outlined, and a practical approach, 'creative holism', is specified which aims to better equip managers to deal with complex problem situations. If the argument is right then systemics has the potential to have both a significant and a beneficial impact upon society in the years to come. Copyright © 2006 John Wiley & Sons, Ltd.

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INTRODUCTION

The paper begins with the argument that creative holism is necessary in the modern world. Managers are facing ever increasing complexity, change and diversity, and the solutions they have at their disposal to cope with these issues are inadequate. Too often managers are sold simple solutions to complex problems. These simple, quick-fix panaceas fail because they are not holistic or creative enough. They focus on parts of problem situations rather than the whole, they

take little account of the interactions between parts, and they pander to the notion that there is one best solution that fits all circumstances. With this argument in place, the benefits of taking a more holistic and creative (in a systemic sense) approach to problem situations are outlined.

Holism has been around for a long time, but because of the apparent success of the traditional scientific method, has had to take second place to reductionism. Holism deserves to be reinstated as an equal and complementary partner to reductionism. It encourages the use of transdisciplinary analogies, it gives attention to both structure and process, it provides a powerful basis for critique, and it enables us to link theory

*Correspondence to: Michael C. Jackson, The Business School, University of Hull, Hull HU6 7RX, UK. E-mail: M.C.Jackson@hull.ac.uk

and practice in a learning cycle. As a result there is evidence that holism can help managers make a success of their practice and address broad, strategic issues as well as narrow, technical ones.

Creativity, in a systemic sense, has become possible because of more recent developments in systems methodology. Experiences immediately prior, during and after the Second World War, led the pioneers of applied systems thinking to conclude that important changes had to be made to the traditional scientific method if it was to be effective in tackling the real-world problems they were interested in. They advocated, under labels such as operational research, systems analysis and systems engineering, methodologies that were more holistic and interdisciplinary, and put client and user objectives first. The 'hard systems' methodologies developed were, and still are, efficient at tackling a particular range of problem situations. However, as society continued to become more complex, turbulent and heterogeneous, problem situations arose which proved difficult to tame using even these methodologies. Fortunately, the systems community responded with new approaches, methodologies and models, better designed for the circumstances of the modern era. System dynamics, organisational cybernetics, complexity theory, soft systems thinking, emancipatory systems thinking and postmodern systems methods were developed. This advance in the competence of systems thinking and practice led to a new kind of problem: How can we understand the strengths and weaknesses of these different systems approaches and use them *creatively*, in combination?

Critical systems thinking tries to answer this question and to provide practical guidance about how to use systems theories, methodologies and methods together in an intervention. One recent set of guidelines goes under the name of 'creative holism' (Jackson, 2003). Creative holism seeks to be multi-paradigm, multi-methodology and multi-method in orientation. In this way it can provide managers with the joint benefits of holism and creativity so that they can do their jobs better. The four phases of 'creative holism'—creativity, choice, implementation and reflection—are outlined.

The review conducted in the paper fulfils the research purpose of demonstrating what is required of systems thinking today if it is to make the greatest contribution to resolving the problems of modern society. Creative holism is advanced as an original contribution to what is needed. Having discussed creative holism and the way that it works, the paper concludes by returning to the 'big issues' that systems thinking can help address. If the argument is correct, creative holism is a vehicle that can enable systemics to have both a significant and a beneficial impact upon society in the years to come.

THE NEED FOR CREATIVE HOLISM

Managers today are expected to cope with increasing complexity, change and diversity.

Complexity stems from the nature of problems. They rarely present themselves individually but come related to other problems, in richly interconnected problem situations that are appropriately described by Ackoff (1999) as 'messes'. As Dean of a business school, I recognise this characteristic in the higher education system in the UK. There is a constant emphasis on improving the quality of learning and teaching, pressure to do well in the research assessment exercise, and a requirement to produce employable graduates. These issues are cross-cut by government targets, concerning for example the social class make-up of the intake, by increased parental involvement because of the fees that students now have to pay, and by the need to do well in the various University leagues tables that are produced. All these factors interact of course. Too much emphasis on learning and teaching can lead research 'stars' to disappear, leading to a poor performance in research assessment, a decline in league table position, etc. As a result of these interactions, once you examine them problems seem to get bigger and to involve more issues and stakeholders—students, parents, employers, research councils, government.

Change is a product of our era. Organisations if they are to remain viable, have to respond

frequently and quickly to constant shifts is their environments. Customers change their preferences over shorter time spans. Competition is global and is often fuelled by the onward march of technological innovation. Governments impose new regulations. Transformations in society and in ways of thinking impose fresh responsibilities on managers.

In a world of complexity and change, managers have to tackle a much greater diversity of problem situations. They have to continue to ensure that organisational processes are efficient and that they are served by the latest developments in technology. But this is hardly enough to stay ahead of the game. Staff have to be inspired and the organisation's stock of knowledge captured, distributed and enhanced, so that the organisation learns faster than its competitors. This requires that managers put in place flexible structures and demonstrate transformational leadership qualities. Changes in the law and in social expectations require managers to respond positively to eliminate discrimination and to monitor the impact of their organisations' activities on their communities and environments.

Faced with increasing complexity, change and diversity, it is not surprising that managers turn to advisers, consultants and academics for help. So desperate have they become for enlightenment that they have elevated a number of these to the status of management gurus. Too often, however, managers have been peddled panaceas in the form of the latest management fad. We are now awash with quick-fix solutions—benchmarking, rightsizing, quality management, process re-engineering, balanced scorecard, knowledge management, customer relationship management, to name but a few. Unfortunately, as so many managers have discovered to the cost of themselves and their organisations, these apparently simple, off-the-shelf solutions rarely work. Fundamentally, they fail because they are not holistic or creative enough (Jackson, 1995; Ackoff, 1999).

They are not holistic enough because they concentrate on the parts of the organisation rather than the whole. In doing so, they miss the crucial interactions between the parts. They fail

to recognise that optimising the performance of one part may have consequences elsewhere that are damaging for the whole. This fault is known as 'sub-optimisation'. In its early days, as is now admitted, process re-engineering concentrated far too much on the things that can be engineered at the expense of the people in organisations. People reacted and process re-engineering interventions failed in terms of securing overall improvement. Benchmarking encourages looking at the efficiency of the different parts of the organisation separately against external comparators. It fails to see that, even if each part is optimised in this way, the performance of the whole organisation will be disastrous if the parts do not interact together well.

Management fads also stifle creativity. They pander to the notion that there is one best solution in all circumstances. Sometimes, if this solution tackles only one of the aspects of an organisation relevant to effective performance, the result is to reinforce sub-optimisation. Quality management, for example, has done a lot to improve process design, but can be criticized for ignoring wider structural issues and the politics of organizations (Flood, 1993). At other times, if more parts are considered, there is a danger that they are all viewed from the same perspective. The balanced scorecard approach (Kaplan and Norton, 1996) claims to embrace different viewpoints on organisational performance while actually requiring users to transfer a machine-like view of organisations to a wider range of their activities. It looks at different things, but in the same way. This inhibits creativity. Japanese authors, such as Nonaka and Takeuchi (see Jackson, 2005), regard Western approaches to knowledge management as impoverished because they are dominated by the model of the organisation as an information-processing machine, derived from Taylor and Simon.

If the reason for the failure of management fads, in the face of complexity, change and diversity, is that they are not holistic or creative enough, then managers need to look elsewhere for help—to systems thinking. Systems thinking is holistic rather than reductionist and, at least in the form of critical systems

thinking, does everything possible to encourage creativity.

THE BENEFITS OF HOLISM

Holism puts the study of wholes before that of the parts. It does not, therefore, try to break organisations, or other entities, down into parts in order to understand them and intervene in them. It concentrates its attention instead at the organisational level and on ensuring that the parts are related properly together and are functioning well to serve the purposes of the whole.

Holism, as an approach to gaining understanding, has been around at least as long as reductionism. The ancient Greek philosopher Aristotle, for example, reasoned that the parts of the body only make sense in terms of the way they function to support the whole organism, and used this biological analogy to consider how individuals need to be related to the State. However, with the advent of the scientific revolution in the 17th century, premised on a method which endorsed reductionism, holism was pushed to the margins of scholarly debate, and left to the likes of romantic poets (Wordsworth, Coleridge, Blake) to explore. Not until the middle of the 20th century, with von Bertalanffy's (1968) 'general system theory' and Wiener's (1948) 'cybernetics', did systems ideas, and holism, regain a degree of scientific respectability.

Today, as the world has grown more complex and it proves impossible or counter-productive to try to break systems down into parts, holism deserves a place as an equal and complementary partner to reductionism. A number of significant benefits emerge for managers if they adopt holistic thinking.

We noted how Aristotle transferred what he learned from biology to inform his thinking about politics. The ability to develop and make use of transdisciplinary analogies has been a strength of systems thinking from its inception and was enshrined in the original purposes of the Society for General Systems Research (the forerunner of the International Society for the Systems Sciences) when it was established in

1954. The facility that systems thinkers have to employ such analogies arises from their concern with systems *per se* rather than with the particular domain—mechanical, biological or human—in which systems manifest themselves. So, for example, von Bertalanffy's (1950) conception of organisms as 'open systems', developed to explain complexity in the biological domain, was seized upon by management thinkers (e.g., Katz and Kahn, 1966) and readily transferred by them to organisation theory to help conceptualise organisation-environment relationships—something that had been impossible using the machine view of organisations that was dominant previously. More recently, the concept of 'autopoiesis' and ideas derived from chaos and complexity theory have been transferred from the scientific fields in which they originated to explain the behaviour of systems of different types (see Mingers, 1995; Stacey, 1996).

A second benefit deriving from holism is the capacity to recognise the importance of both process and structure in system development and maintenance, and their interdependence. Non-systemic thinking tends to emphasise either change and flow or permanence and stability; a divide going back to the pre-Socratic philosophers Heraclitus and Parmenides. Von Bertalanffy was interested in the processes that give rise to the steady state that biological organisms are capable of exhibiting. This is taken much further in complexity theory which pictures systems as arenas of dynamic process from which stable structures are temporarily born. Order is, then, an emergent property of disorder and comes about through self-organising processes operating from within the system itself. Maturana and Varela's distinction between 'structure' and 'organisation' adds further insight: Maturana (1986) defining a dynamic composite unity as 'a composite unity in continuous structural change with conservation of organisation'. In general terms, all the different systems methodologies are able to take advantage of the ability to conceptualise structure and process as interrelated.

A third benefit of holism is that it provides a good basis for critique. As Churchman (1979) and Ulrich (1983) have pointed out, the implication of

the systems message, that all the parts of a system are interconnected, is that you need to understand the whole system in order to know whether a particular intervention, designed to improve it, will actually improve it or not. Such complete understanding, however, is reserved for a God. The only way forward therefore, for those who believe in and would practice systems thinking, is to constantly reflect upon the necessary lack of comprehensiveness in our understanding. When we take action, as we have to do, we deal with this dilemma by drawing boundaries; taking account of some things and disregarding others. We should be ready to justify the boundaries we draw and be willing to have them challenged by others. Ulrich's 'critical systems heuristics' provides the means to critique boundary judgements.

A fourth and final benefit of holism, that it is worth mentioning here, is the 'theoretical awareness' to which it gives rise. When we distinguish systems and identify their characteristics, we clearly do so from a particular world-view. Our knowledge is, therefore, always partial. It becomes necessary, therefore, to reflect upon the world-view we are adopting and to compare what it reveals to the knowledge we can get from an alternative world-view. Doing so can also help us to develop a close link between theory and practice (which is essential to the development of applied systems thinking) because in acting in a particular way we can be clear what we are assuming about the system of concern. If the action goes wrong, we can challenge those assumptions. Critical systems thinking (see Jackson, 2000, 2003) frequently asks what paradigm is driving our world-view or what metaphors we are privileging in our world view, in order to progress theoretical awareness and the critique to which it can give rise. This form of critique is more fundamental than the 'boundary critique' mentioned earlier because the world-view or paradigm we adopt tends to determine how we see boundaries.

The notion of holism itself, the concepts associated with it, and the four benefits I have outlined, provide for systems thinking, I would suggest, advantages over reductionism when it comes to practical action. This is difficult to prove

but we should at least listen to Sir Geoffrey Vickers who, after a 40-year career in the world of affairs, sat down to write about his experiences (see Checkland and Holwell, 1998). He found little in social theory that could help him make sense of them. In systems thinking, however, he discovered much of immediate value and was able to develop his sophisticated theory of 'appreciative systems' as a result. It seems that systems ideas have a resonance with real-world practice which is sadly lacking in other disciplines.

Holism also ensures that we keep in mind the 'big issues'. I shall return to this in the conclusion of the paper. Suffice to say here that it forces us to ask, with Drucker and Ackoff (1999), not only 'are we doing things right?' but also 'are we doing the right things?'

CREATIVITY IN APPLIED SYSTEMS THINKING

If holism is necessary to deal with increasing complexity, change and diversity so, we argue in this section, is creativity. Because of the growing popularity of holistic thinking, there is now a variety of different systems approaches to choose between. While these all employ holism, they do not all encourage creativity. Some fall prey to the fault found with so many management fads—they encourage us to look at organizations from only one perspective. Increasingly, being systemic is also coming to mean being able to look at problem situations and knowing how to manage them from a variety of points of view and using different systems approaches in combination. Critical systems thinking specifically encourages this kind of creativity. Creativity is made possible if we understand the range of systems approaches, their strengths and weaknesses, and how to use them together.

In order to understand this further it is worth looking at how applied systems thinking developed, and why a variety of different systems methodologies emerged. Figure 1, based upon Jackson and Keys' (1984) 'system of systems methodologies', seeks to map this out.

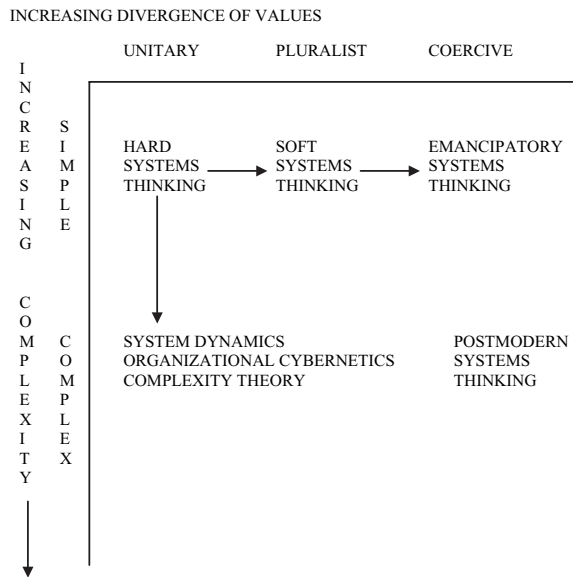


Figure 1. The development of applied systems thinking.

It is made up of two dimensions; one defining the nature of systems, on a continuum from 'simple' to 'complex', and the other the nature of the relationship between participants, those concerned with the problem situation, as 'unitary', 'pluralist' or 'coercive'. The meaning of these terms will become clearer as we use Figure 1 to put a pattern on the development of applied systems thinking.

In the introduction to this paper, it was noted that applied systems thinking began about the time of the Second World War, when various 'hard systems' methodologies, such as operational research, systems analysis and systems engineering, emerged. According to Figure 1, these approaches make unitary and simple assumptions about problem situations. They take it for granted that objectives can be clearly specified because people share values and beliefs, and that systems are simple enough to be mathematically modelled. These assumptions, reasonable enough at the time the methodologies were first developed and for the projects they were then employed on, collapse in the face of the greater complexity, change and diversity of the modern era. Fortunately, new systems approaches came to the fore, based on other than simple and unitary assumptions.

Turning first to the vertical axis, we find systems approaches such as system dynamics, organizational cybernetics and complexity theory. They try to manage greater complexity and change by getting 'behind' the numerous surface relationships apparently impacting on the system. They seek to identify those key mechanisms or 'structures' that govern the behaviour of the elements or sub-systems and, therefore, are fundamental to system behaviour. In the case of system dynamics (see Forrester, 1969 and Senge, 1990) it is the relationships between positive and negative feedback loops that can give rise to 'archetypes' of system behaviour. In the case of organizational cybernetics (see Beer, 1979) it is cybernetic laws. With complexity theory (see Stacey, 1996) it is 'strange attractors' and the variables that have to be adjusted to ensure that an 'edge of chaos' state is achieved.

Moving along the horizontal axis, we find soft systems approaches such as Ackoff's (1981) 'interactive planning', Churchman's (1968) 'social systems design', and Checkland's (1981) 'soft systems methodology'. In order to cope with increasing diversity (or pluralism) they abandon the notion that it is possible easily to identify agreed-on-goals that can be used to provide an objective account of the system and its purpose. Instead, attention is given to ensuring sufficient accommodation between different and sometimes conflicting world-views in order that coalitions can be fashioned in support of particular changes. Subjectivity becomes central to the methodological process. Checkland's soft systems methodology, for example, aims to generate a systemic learning process in which participants in the problem situation come to appreciate more fully alternative world-views, and the possibilities for change they offer, and as a result an accommodation becomes possible between those who started with and may still hold divergent values and beliefs.

As we shift further along the horizontal axis, however, issues arise of how to intervene in problem situations that are seen as 'coercive', in the sense that participants have few interests in common, compromise is difficult to achieve and decisions are most likely to be taken on the basis

of the greater power possessed by some groups over others. Ulrich (1983) and Beer (1994), to take two examples, have sought to formulate 'emancipatory systems approaches' which can help in these contexts. Ulrich's 'critical systems heuristics' allows questions to be asked about who benefits from particular system designs and seeks to empower those affected by management decisions but not involved in them. Beer's 'team synteegrity' seeks to specify an arena and procedures that enable all stakeholders to debate openly and democratically the issues with which they are confronted.

Finally there are those, for example Taket and White (2000), who worry about the claims of any methodology to bring about generalised improvement. They advocate postmodern practice and methods. Their contributions can be seen, therefore, as assuming the existence of massive and impenetrable complexity and coercion—the conditions defined in the bottom right-hand corner of Figure 1.

Figure 1 provides us with a way of seeing developments in applied systems thinking. There are other, equally legitimate tools that can achieve much the same thing—for example, metaphor analysis and paradigm analysis (see Jackson, 2000, 2003).

Metaphor analysis sees developments in applied systems thinking as being about the exploration and exploitation of different metaphors closely linked to our understanding of organisations. Hard systems thinking privileges the 'machine' metaphor. System dynamics and complexity theory favour the 'flux and transformation' metaphor; while organizational cybernetics makes primary use of the 'organism' and 'brain' metaphors. Soft systems approaches prefer the 'culture' and 'political system' metaphors; while emancipatory systems thinking entertains the 'psychic prison' and 'instruments of domination' metaphors. The 'carnival' metaphor seems appropriate for postmodern approaches. Carnivals are subversive of order, they allow diversity and creativity to be expressed, they encourage the exceptional to be seen, they are playful and engage people's emotions.

Developments in applied systems thinking can also be seen as opening up new paradigms to

systems thinkers. Hard systems thinking is functionalist/positivist in character; while system dynamics, organizational cybernetics and complexity theory are all functionalist/structuralist. Soft systems thinking is interpretive in nature; while emancipatory and postmodern systems approaches are based on the emancipatory and postmodern sociological paradigms respectively.

However we analyse developments in applied systems thinking, the same conclusion emerges. The various types of systems approach, while sharing a commitment to holism, emphasise different things and have different strengths and weaknesses. The key to being creative, in applied systems thinking, is to use the plurality of systems methodologies and methods, that now exist, in combination. Only multi-methodology and multi-method practice can cope with the increasing complexity, change and diversity that managers encounter. Research into how this can be achieved goes under the name of 'critical systems thinking' and one variant of that is called 'creative holism' (see Jackson, 2000, 2003).

CREATIVE HOLISM

The purpose of creative holism is to learn about and harness the various systems methodologies, methods and models so that they can best be used by managers to respond to the complexity, turbulence and heterogeneity of the problem situations they face today. It shares with critical systems thinking, generally, a basic philosophy that can be described by three commitments—to 'critical awareness' (of the strengths and weaknesses of different systems approaches), 'pluralism' (the use in combination of different systems methodologies and methods) and 'improvement'. This philosophy will not be discussed further here. The critical systems practice it embraces is an enhanced version of 'total systems intervention' (Flood and Jackson, 1991). It has four phases—'creativity', 'choice', 'implementation' and 'reflection'. These phases will be described in turn. Table 1 provides a summary.

In order to appreciate the complexity and heterogeneity of problem situations, it is essential

Table 1. The meta-methodology of creative holism

CREATIVITY		
Task	—	to highlight significant concerns, issues and problems
Tools	—	creativity enhancing devices employed to ensure that the perspectives of the four paradigms receive proper attention
Outcome	—	dominant and dependent concerns, issues and problems
CHOICE		
Task	—	to choose an appropriate generic systems methodology to methodologies and a variety of suitable methods, models and techniques
Tools	—	methods for revealing the strengths and weaknesses of methodologies, methods, tools and techniques, including paradigm analysis, previous experience, etc.
Outcome	—	dominant and dependent generic systems methodologies and appropriate methods, etc, chosen for use
IMPLEMENTATION		
Task	—	to arrive at and implement specific positive change proposals
Tools	—	generic systems methodologies and appropriate methods, etc., employed according to the logic of creative holism
Outcome	—	highly relevant and co-ordinated change which secures significant improvement in the problem situation according to the concerns of the different paradigms
REFLECTION		
Task	—	to evaluate the intervention and to produce learning about the problem situation, the meta-methodology itself, the generic systems methodologies, and the methods, etc., used
Tools	—	clear understanding of the current state of knowledge about these
Outcome	—	research findings which, for example, feedback into improving earlier stages of the meta-methodology

for the systems practitioner, in pursuing 'creativity', to bring to bear radically different views of the world derived from alternative paradigms. Creative holism suggests that the perspectives of four paradigms—functionalist, interpretive, emancipatory and postmodern—must be considered. In order to achieve this, managers and analysts might explore the paradigms through the use of appropriate metaphors, or employ other creativity enhancing devices. The aim is to take the broadest possible critical look at the problem situation but gradually to focus down on those aspects most crucial to the organisation at this point in its evolution.

Having identified the crucial problems for the organisation, a 'choice' has to be made of suitable systems methodologies and methods to address the problem situation. This is done on the basis of a review of the strengths and weaknesses of the different methodologies and methods, conducted using paradigm analysis, metaphor analysis, past experience, etc. To ensure the

broadest possible choice of methodologies, creative holism provides 'generic methodologies', representing each of the four paradigms mentioned above. One advantage is that the theoretical link back to paradigms is made explicit so allowing us to operationalise better, and more obviously, the hypotheses of particular paradigms and to test these in real-world interventions. In practice, the difficulties associated with multi-methodology practice can be managed if an initial choice of 'dominant methodology' is made to run the intervention, with a 'dependant' methodology (or methodologies), reflecting alternative paradigms, in the background. With regard to the methods, models, etc. chosen, creative holism encourages the maximum possible flexibility. It is happy to see existing methodologies 'decomposed' (Midgley, 1997), giving the systems practitioner access to the full range of methods to use in combination, as he or she feels appropriate, in support of the generic systems methodologies

that are to be employed in the intervention. The existence of the generic methodologies ensures that the methods are not simply 'cut-free'—they can be evaluated as to their usefulness in support of methodology and related theory.

'Implementation' can then proceed by employing the chosen dominant methodology and methods. As intervention progresses, the problems that earlier seemed to be crucial may fade into the background and new ones emerge. This can be catered for by continually cycling round the phases of creative holism, with different systems methodologies (and chosen methods) assuming the role of 'dominant' and 'dependant' in leading the intervention at particular times. Whichever methodology is initially chosen as dominant, the way 'implementation' proceeds will be continually critiqued through the lenses offered by alternative paradigms. Implementation should see highly relevant and co-ordinated change effected, which secures improvement in the problem situation according to the concerns of the different paradigms. Switches in dominant methodology should be common.

'Reflection' seeks to judge how successful the intervention has been in bringing about improvement. It does this by taking into account what each paradigm rates as most significant. The functionalist paradigm prioritises goal-seeking and viability, judging in terms of efficiency and efficacy. The interpretive paradigm prioritises exploring purposes by enhancing mutual understanding, judging in terms of effectiveness and elegance. The emancipatory paradigm seeks to ensure fairness, judging in terms of empowerment and emancipation. The postmodern paradigm values the promotion of diversity, judging in terms of exception and emotion. A highly successful intervention should be able to demonstrate progress on all these fronts. Reflection also seeks to ensure that research, and the generation of new learning, receives the attention it deserves. Any use of creative holism is capable of yielding research findings about: how to manage the relationships between different paradigms; the philosophy and theory that constitutes a paradigm underpinning any generic methodology used; the generic systems

methodologies employed; the methods, models, techniques, etc. used; and about the real-world problem situation investigated.

I have, elsewhere (Jackson, 2000), compared the critical systems practitioner with a holistic doctor. Confronted by a patient with pains in her stomach, the doctor might initially consider standard explanations, such as over-indulgence, period pains or irritable bowel syndrome. If the patient failed to respond to the usual treatment prescribed on the basis of an initial diagnosis you would expect the doctor to entertain the possibility of some more deep-seated and dangerous malady. The patient might be sent for X-ray, body scan or other tests designed to search for such structural problems. If nothing was found, a thoughtful conversation with the patient might suggest that the pains were a symptom of anxiety and depression. Various forms of counselling or psychological support could be offered. Or, perhaps, a knowledge of the patient's domestic circumstances, and bruises elsewhere on the body, might reveal that the patient was suffering at the hands of a violent partner. What should the doctor do in these circumstances? Finally, perhaps the patient just needs another interest—such as painting or golf—to take her mind off worries at work.

We would expect a 'holistic' doctor to be open to all these possibilities and to have appropriate responses and 'treatments' available. To my mind, the critical systems practitioner, probing with his or her functionalist (positivist and structuralist), interpretive, emancipatory and postmodern perspectives, is similarly taking a holistic approach to organisational and societal problems.

CONCLUSION

Creative holism, a new development in systems thinking, wants to provide managers with the joint benefits of holism and creativity so that they can do their jobs better. Holism by itself confers many advantages over traditional, reductionist approaches in dealing with complexity, change and diversity. As systems thinking has developed it has discovered a variety of different ways

of being holistic, based upon different paradigms and metaphors. We are now able, therefore, to be creative in the way we approach being holistic. Creative holism enables us to use different systems approaches, reflecting alternative holistic perspectives, in combination. Perhaps we cannot use all the various systems approach at once, but they can be employed creatively, over time, to promote together overall improvement in the problem situations managers face. This is the essence of creative holism.

No doubt creative holism will seem 'difficult'. But then, managerial work is becoming more complex, turbulent and diverse. Most managers are likely to find themselves, on a regular basis, confronted by 'messes' made up of interacting issues such as the need to increase productivity, become more market-centred, improve communications, adopt fairer recruitment and promotion strategies, and motivate a diverse workforce. They will also find themselves having to prioritise between the demands made upon them because of lack of time and resources. They cannot tackle them all at once. This all seems like commonsense. Creative holism is in tune with this commonsense. It recognises that excellent organisational performance depends on managers paying attention to improving goal-seeking and viability, exploring purposes, ensuring fairness and promoting diversity. And it offers critical systems practice, which provides guidelines on how to tackle in an holistic and balanced way, using various systems approaches, the 'messes' that managers so often confront. Creative holism responds to the everyday problem situations that managers have to deal with.

It is one of the satisfactions of systems thinking that its insights translate between levels. If we move beyond the organisational to the societal and world levels, we find that the same imperatives for improvement, highlighted by creative holism, continue to be crucial. We are unlikely to improve things unless we pay attention to efficiency and effectiveness, mutual understanding, fairness and diversity. And we need to understand the interactions between these and treat them holistically. Few

of us will get the opportunity to practice our systems thinking on the world stage. Perhaps, though, if we pay attention to each and all of these things, as managers in organisations, our actions will have a resonance beyond our immediate environments and, in some way, contribute to global improvement. This is a nice thought. Most managers, as well as doing a good job, would like to make things better rather than worse for future generations.

REFERENCES

- Ackoff RL. 1981. *Creating the Corporate Future*. Wiley: New York.
- Ackoff RL. 1999. *Ackoff's Best: His Classic Writings on Management*. Wiley: New York.
- Beer S. 1979. *The Heart of Enterprise*. Wiley: Chichester.
- Beer S. 1994. *Beyond Dispute: the Invention of Team Syntegrity*. Wiley: Chichester.
- Checkland PB. 1981. *Systems Thinking, Systems Practice*. Wiley: Chichester.
- Checkland PB, Holwell S. 1998. *Information, Systems and Information Systems*. Wiley: Chichester.
- Churchman CW. 1968. *The Systems Approach*. Dell: New York.
- Churchman CW. 1979. *The Systems Approach and Its Enemies*. Basic Books: New York.
- Flood RL. 1993. *Beyond Total Quality Management*. Wiley: Chichester.
- Flood RL, Jackson MC. 1991. *Creative Problem Solving: Total Systems Intervention*. Wiley: Chichester.
- Forrester JW. 1969. *Principles of Systems*. Wright-Allan Press: Cambridge, MA.
- Jackson MC. 1995. Beyond the fads: systems thinking for managers. *Systems Research* 12: 25–42.
- Jackson MC. 2000. *Systems Approaches to Management*. Kluwer/Plenum: New York.
- Jackson MC. 2003. *Systems Thinking: Creative Holism for Managers*. Wiley: Chichester.
- Jackson MC. 2005. Reflections on knowledge management from a critical systems perspective. *Knowledge Management Research and Practice* 3: 187–196.
- Jackson MC, Keys P. 1984. Towards a system of systems methodologies. *JORS* 35: 473–486.
- Kaplan RS, Norton DP. 1996. *The Balanced Scorecard: Translating Strategy into Action*. Harvard Business School Press: Boston.
- Katz D, Kahn RL. 1966. *The Social Psychology of Organizations*. Wiley: New York.
- Maturana HR. 1986. The biological foundations of self-consciousness and the physical domain of existence. In *Physics of Cognitive Processes: Amalfi 1986*, Caianiello ER (ed.). World Scientific: Singapore.

- Midgley G. 1997. Mixing methods: Developing systemic intervention. In *Multimethodology: The Theory and Practice of Combining Management Science Methodologies*, Mingers J, Gill J (eds). Wiley: Chichester; 291–332.
- Mingers JC. 1995. *Self-Producing Systems: Implications and Applications of Autopoiesis*. Plenum: New York.
- Senge PM. 1990. *The Fifth Discipline: the Art and Practice of the Learning Organization*. Random House: London.
- Stacey RD. 1996. *Complexity and Creativity in Organizations*. Berret-Kohler: San Francisco.
- Taket AR, White LA. 2000. *Partnership and Participation*. Wiley: Chichester.
- Ulrich W. 1983. *Critical Heuristics of Social Planning*. Haupt: Bern.
- von Bertalanffy L. 1950. The theory of open systems in physics and biology. In *Systems Thinking*, Emery FE (ed.). Penguin: Harmondsworth; 70–85.
- von Bertalanffy L. 1968. *General System Theory*. Penguin: Harmondsworth.
- Wiener N. 1948. *Cybernetics*. Wiley: New York.

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