The future prospects of management science will be much enhanced if (a) the diversity of issues confronting managers is accepted, (b) work on developing a rich variety of problem-solving methodologies is undertaken, and (c) we continually ask the question: ‘What kind of issue can be “managed” with which sort of methodology?’.

Flood and Jackson (1991a)

14.1 INTRODUCTION

Early approaches to applied systems thinking, labelled hard systems approaches, were suitable for tackling certain well-defined problems, but were found to have limitations when faced with complex problem situations involving people with a variety of viewpoints and frequently at odds with one another.

Systems thinkers, as we saw in Part II, responded by developing: system dynamics, organizational cybernetics and complexity theory to tackle complexity and change; strategic assumption surfacing and testing, interactive planning and Soft Systems Methodology (SSM) to handle pluralism; Critical Systems Heuristics (CSH) and team syntegrity to empower the disadvantaged in situations involving conflict; and pragmatic pluralism to manage diversity. There has been a corresponding enlargement in the range of problem contexts in which systems practitioners feel competent to intervene.

It was becoming apparent, however, in the 1980s and 1990s, that something more was needed if systems thinking was ever to realize its potential as a guide for managers. It was Critical Systems Thinking (CST) that provided this ‘something more’. CST has supplied the bigger picture, has allowed systems thinking to mature as a transdiscipline and has set out how
the variety of approaches, methodologies, methods and models, now available, can be used in a coherent manner to promote successful intervention in complex organizational and societal problem situations.

Once CST had been formulated as a philosophy and theory, it needed guidelines that would enable it to be applied in practice. These were provided in 1991 with the publication of Flood and Jackson’s (1991a) book Creative Problem Solving: Total Systems Intervention. Total Systems Intervention (TSI) was heralded as a new approach to planning, designing, problem-solving and evaluation based on CST. This chapter outlines the development of CST and highlights the first critical systems methodology: TSI.

14.2 DESCRIPTION OF TOTAL SYSTEMS INTERVENTION (TSI)

14.2.1 Historical development

The development of CST and TSI can be traced to three sources: a growing critical awareness of the strengths and weaknesses of individual systems approaches; an appreciation of the need for pluralism in systems thinking; and the rise of emancipatory systems thinking.

The major steps in the development of critical awareness in systems thinking were the assaults launched, in the 1970s, by soft systems thinkers on hard systems thinking and the critique of soft systems thinking, elaborated in the 1980s, by those of an ‘emancipatory’ persuasion. In the first case, soft systems thinkers sought to demonstrate that hard systems thinking is ineffective in the great majority of problem situations. Checkland, as we saw in Chapter 10, argues that hard systems thinking is a special case of soft systems thinking, applicable only in those rare cases when problem situations present themselves in terms of systems with clearly defined goals and objectives. In the second case, the critics argued that soft systems thinking, too, had a limited domain of application. The kind of open participative debate that is essential for the success of the soft systems approach, and that is used to validate the recommendations that emerge, is impossible to obtain in problem situations involving significant conflict between interest groups that have access to unequal power resources.

As the 1980s progressed the level of informed critique of individual systems approaches grew, culminating in Jackson’s (1991) review of five strands of systems thinking – ‘organizations as systems’, ‘hard’, ‘cybernetic’, ‘soft’ and ‘emancipatory’ – from the point of view of some appropriate
social theory. It had become obvious that all systems methodologies had certain weaknesses as well as certain strengths.

Our second source of CST is ‘pluralism’. There has always been a tendency to pluralism in systems thinking applied to management – presumably on the basis that it assists with being holistic. Sociotechnical systems theory (concerning itself with the social, technical and economic subsystems of organizations) and contingency theory (interested in the goal, human, technical and managerial subsystems) are cases in point. However, while these early systems approaches identified different aspects of the organization to look at, they always looked at them from the same point of view – taking an essentially functionalist perspective (see Jackson, 2000). The sort of pluralism that inspired CST did not emerge until 1984. In that year Linstone released his book *Multiple Perspectives for Decision Making* and Jackson and Keys first published their System Of Systems Methodologies (SOSM). These two events signalled the birth of a more advanced form of pluralism that required systems practitioners both to look at problem situations from a variety of different perspectives and to use different systems methodologies in combination.

Linstone’s form of multiperspective research seeks to use three different viewpoints to gain a rich appreciation of the nature of problem situations. The Traditional or technical (T) perspective, dependent on data and model-based analysis, is augmented by an Organizational (O) or societal perspective, and a Personal (P) or individual perspective. The T, O and P perspectives act as filters through which systems are viewed, and each yields insights that are not attainable with the others. Linstone argues that the different perspectives are most powerfully employed when they are clearly differentiated from one another, in terms of the emphasis they bring to the analysis, yet are used together to interrogate the same complex problem. Nor, he believes, can one expect consistency in findings: two perspectives may reinforce one another, but may equally cancel each other out.

Jackson and Keys were motivated to explore the relationships between the different systems methodologies that had arisen as guides to intervening in problem situations and to understand their capacities and limitations. To this end, during 1983/1984, a research programme was established at the University of Hull (UK) that used as its primary research tool the SOSM described in Chapter 2. This research programme was successful enough to open up a new perspective on the development of systems thinking. Previously, it had seemed as if the discipline was undergoing a Kuhnian ‘paradigm crisis’ (Kuhn, 1970) as hard systems thinking encountered increasing anomalies and was challenged by other approaches. The SOSM,
by contrast, demonstrated that alternative systems approaches could be seen as complementary rather than in competition. Each systems approach is useful for certain purposes and in particular types of problem situation. The diversity of approaches, therefore, heralds not a crisis but increased competence in a variety of problem contexts.

The SOSM offered a way forward from the prevailing systems thinking ‘in crisis’ debates. In doing so it established pluralism as a central tenet of CST and encouraged mutual respect between proponents of different approaches who had previously seen themselves as being at war with one another. Furthermore, going beyond Linstone, the SOSM recognized that pluralism could be achieved based on methodologies (hard, cybernetic, soft, etc.) that were developed from more than one paradigm.

The centrality of pluralism was reinforced by Jackson, in 1987, in an article that compared it with ‘isolationism’, ‘imperialism’ and ‘pragmatism’ as a development strategy for systems thinking. Isolationists, who believed in just one systems methodology, divided the discipline and discredited the profession. Imperialists, who sought to incorporate different methodologies within their favoured systems-theoretical orientation, ignored the benefits of other paradigms and ‘denatured’ many of the approaches they used. Pragmatists, who eschewed theoretical distinctions and concentrated on building up a ‘toolkit’ of methods and techniques on the basis of what ‘worked’ in practice, limited the possibilities for learning (e.g., why the method worked) and passing on knowledge to future generations.

Pluralism, however, offered excellent opportunities for future progress. It respected the different strengths of the various strands of systems thinking, encouraged their theoretical development and suggested ways in which they could be appropriately fitted to the diversity of management problems that arise. It was argued that a metamethodology (TSI was still to come) would develop that could guide theoretical endeavour and advise practitioners, confronted with problem situations, which approach or combination of approaches is most suitable.

The third element that was important in the development of CST was the emergence of the ‘emancipatory systems approach’. Indeed, in the early days of both approaches they could hardly be separated. There was a good reason for this, which can be understood using the SOSM. Once the strengths and weaknesses of existing systems methodologies were better understood, it became possible to ask whether there were any ‘ideal-type’ problem contexts for which no currently existing systems approach seemed appropriate. The most obvious candidates were the ‘coercive’ contexts, defined as situations where there is fundamental conflict between stake-
holders and the only consensus that can be achieved arises from the exercise of power. Recognition that such contexts were important for systems thinking led to the first explicit call (Jackson, 1982a, 1985) for a ‘critical approach’ that could take account of them.

This call for (essentially) an emancipatory systems approach, inspired by the SOSM, was met by the arrival of Ulrich’s CSH (see Chapter 11). Although Ulrich’s (1983) approach represented an independently developed strand of CST, deriving from Kantian idealism and Churchman’s reflections on systems design, when the approach became known at Hull it was like the discovery of an element that filled a gap in the periodic table (the SOSM). CSH was capable, where soft systems thinking was not, of providing guidelines for action in certain kinds of coercive situation.

This early involvement of CST with emancipatory systems approaches, led to a concern with ‘emancipation’ becoming one of its defining characteristics.

14.2.2 Philosophy and theory

By the time of the creation of TSI, in 1991, CST could be summarized (Jackson, 1991) as having five main commitments to:

- critical awareness;
- social awareness;
- pluralism at the methodological level;
- pluralism at the theoretical level; and
- ‘emancipation’.

We have dealt with ‘critical awareness’, ‘pluralism at the methodological level’ and ‘emancipation’ in the previous subsection, but we did not detail their philosophical and theoretical underpinnings. We do that now and combine this with a discussion of ‘social awareness’ and ‘pluralism at the theoretical level’, these two commitments having emerged more directly from theoretical considerations.

The philosophy of the social sciences provided the major theoretical prop in developing critical awareness. Of particular importance has been work that allows an overview to be taken of different ways of analysing social systems and intervening in organizations. For example, Burrell and Morgan’s (1979) book on sociological paradigms and organizational analysis was used by Checkland (1981) to demonstrate that hard systems thinking is functionalist in nature and that its shortcomings (in Checkland’s eyes) can be understood in those terms. The same source allowed Jackson (1982b)
and Mingers (1980, 1984) to argue that soft systems thinking is interpretive in nature; embracing both subjectivism and regulation. Jackson’s 1991 book, *Systems Methodology for the Management Sciences*, made use of Burrell and Morgan’s classification, Morgan’s (1986) work on ‘images’ of organization, Habermas’ (1970) theory of three human interests (technical, practical, emancipatory) and the modernism versus postmodernism debate, to critique the assumptions different systems approaches make about social science, social reality and organizations. This kind of critique allows a much richer appreciation of the theoretical assumptions lying behind their strengths and weaknesses.

As well as facilitating critical awareness, the social sciences drew the attention of critics to the importance of the social context in which systems approaches are used – and so to the need for ‘social awareness’. Social awareness considers two things. First, it looks at the organizational and societal circumstances that lead to certain systems theories and methodologies being popular for guiding interventions at particular times. For example, hard systems thinking and management cybernetics were widely used in the old Soviet Union, and the communist states of Eastern Europe, because of their fit with hierarchy and bureaucracy. Second, social awareness makes users of systems methodologies contemplate the consequences of use of the approaches they employ. For example, using soft systems approaches in circumstances where open and free debate are not possible may simply reinforce the status quo.

The desirability of pluralism at the methodological level was established, as we saw, by the work of Linstone (1984), Jackson and Keys (1984) and Jackson (1987). Following Jackson’s (1987) paper, debate about pluralism in systems thinking began to focus at the theoretical level. This was because of philosophical difficulties posed for the pluralist position by arguments in favour of ‘paradigm incommensurability’ derived from Kuhn (1970) and Burrell and Morgan (1979). It seemed inconceivable to proponents of paradigm incommensurability that different systems methodologies, based on what were (to them) irreconcilable theoretical assumptions, could ever be employed together in any kind of complementarist way. This would require standing ‘above’ the paradigms. How could such a privileged position be attained?

To find an answer to this problem, and therefore to give coherence to pluralism at the methodological level, critical systems thinkers turned to Habermas’ theory of human interests.

Habermas (1970, 1975, 1984) has argued that there are two fundamental conditions underpinning the sociocultural life of the human species. These
he calls ‘work’ and ‘interaction’. Work enables us to achieve goals and to bring about material well-being through social labour. Its success depends on achieving technical mastery over natural and social processes. Human beings, therefore, have a ‘technical interest’ in the prediction and control of natural and social systems. The other anthropologically based cognitive interest is linked to interaction and is labelled the ‘practical interest’. Its concern is with securing and expanding the possibilities for mutual understanding among all those involved in social systems. Disagreements between individuals and groups are just as much a threat to the sociocultural form of life as a failure to predict and control.

While work and interaction have pre-eminent anthropological status, the analysis of ‘power’ and the way it is exercised is equally important, Habermas argues, if we are to understand past and present social arrangements. The exercise of power can prevent the open and free discussion necessary for the success of work and interaction. Human beings have, therefore, an ‘emancipatory interest’ in freeing themselves from constraints imposed by power relations and in learning, through a process of genuine participatory democracy conducted in ‘ideal speech situations’, to control their own destiny.

Now, if we all have a technical, a practical and an emancipatory interest in the functioning of organizations and society, then an enhanced systems thinking that can support all of these various interests must have an extremely important role to play in securing human well-being. But this is exactly what CST, with its commitment to pluralism, offers. It seems clear that hard, system dynamic, organizational cybernetic and complexity theory approaches can support the technical interest, soft systems thinking the practical interest, and CSH and team syntegrity can assist the emancipatory interest.

By 1991, based on Habermas’ thinking, it was possible for Flood and Jackson (1991a) to suggest that the concern about paradigm incommensurability could be resolved at the level of human interests. As a result the SOSM could be rescued as a vehicle for promoting methodological pluralism. Complementarism at the theoretical level provided the basis and justification for complementarism at the methodological level. The SOSM could point to the strengths and weaknesses of different strands of systems thinking and put them to work in a way that respects and takes advantage of their own particular theoretical predispositions in the service of appropriate human interests.

As we saw in the previous subsection, the SOSM benefited CST by providing a warm embrace to emancipatory approaches. By 1991,
however, it was possible to see that it was necessary to keep emancipatory systems thinking at arm’s length as far as becoming a permanent partner was concerned. The appropriate relationship became clear once CST had attached itself to Habermas’ theory of three human interests: the technical, practical and emancipatory. It then became possible to define CST’s ‘emancipatory commitment’ in terms of a much broader dedication to ‘human improvement’. Flood and Jackson (1991a) saw this as meaning bringing about those circumstances in which all individuals could achieve the maximum development of their potential. This, in turn, means raising the quality of work and life in the organizations and societies in which they participate. Habermas had shown that human improvement required that each of his three interests needed serving by systems methodologies. Critical systems thinkers made the point that this was exactly what their approach wanted to achieve.

Emancipatory systems thinking is, therefore, narrower than CST. Its role is to provide methodologies that, through critique, enable the open and free discussion necessary for the success of work and interaction. The domain of effective application of emancipatory approaches is ‘coercive’ problem contexts, or organizations as psychic prisons and/or instruments of domination. But not all problem situations are usefully regarded as coercive; some are better seen as unitary or pluralist. Emancipatory systems thinking, therefore, just like hard and soft approaches, possesses a limited domain of application. CST, by contrast, is about putting all the different system approaches to work, according to their strengths and weaknesses, and the social conditions prevailing, in the service of a more general project of improvement.

14.2.3 Metamethodology

TSI aims to put into practice the commitments adhered to by CST. Briefly, it regards problem situations as messes that cannot be understood and analysed on the basis of only one perspective. For this reason, it advocates viewing them from a variety of perspectives, perhaps as encapsulated in different metaphors. Once agreement is reached among the facilitators and participants about the major issues and problems they are confronting, an appropriate choice needs to be made of systems methodology, or set of systems methodologies, for managing the mess and tackling the issues and problems. This choice should be made in the full knowledge of the strengths and weaknesses of available systems approaches as revealed, for example, by the SOSM. When selecting methodologies it is important that the idea
of pluralism is kept in mind. Different methodologies can be used to address different aspects of problem situations and to ensure that the technical, practical and emancipatory interests are all given proper consideration. Furthermore, the initial choice of methodology or methodologies must be kept constantly under review and may need to change as the nature of the mess itself changes. In this way TSI guides intervention in such a way that it continually addresses the major issues and problems faced in an organization or multiagency situation.

From this brief account it will be clear that, because it organizes and employs other systems methodologies, TSI should strictly be described as a metamethodology. Flood and Jackson (1991a) see seven principles as underpinning this metamethodology:

- problem situations are too complicated to understand from one perspective and the issues they throw up too complex to tackle with quick fixes;
- problem situations, and the concerns, issues and problems they embody, should therefore be investigated from a variety of perspectives;
- once the major issues and problems have been highlighted it is necessary to make a suitable choice of systems methodology or methodologies to guide intervention;
- it is necessary to appreciate the relative strengths and weaknesses of different systems methodologies and to use this knowledge, together with an understanding of the main issues and concerns, to guide choice of appropriate methodologies;
- different perspectives and systems methodologies should be used in a complementary way to highlight and address different aspects of organizations, their issues and problems;
- TSI sets out a systemic cycle of inquiry with interaction back and forth between its three phases;
- facilitators and participants are engaged at all stages of the TSI process.

The sixth principle refers to the three phases of the TSI metamethodology, which are labelled creativity, choice, and implementation.

The task during the creativity phase is to highlight the major concerns, issues and problems that exist in the problem context that is being addressed. Various creativity-enhancing devices can be employed to help managers and other stakeholders during this phase. It is mandatory, however, that a wide range of different perspectives is brought to bear so that the picture built up of the problem situation is derived from viewing it from different
paradigms. TSI uses ‘systems metaphors’ as its favoured method for ensuring this happens.

The key aspects of the problem situation revealed, by whatever creativity-enhancing devices are employed, are subject to discussion and debate among the facilitators, managers and other stakeholders. The outcome (what is expected to emerge) from the creativity phase is a set of significant issues and concerns. There may be other important but less immediately crucial problems that it is also sensible to record and pursue into the next phase. These ‘dominant’ and ‘dependent’ concerns, issues and problems then become the basis for designing an appropriate systems intervention approach.

The second phase is known as the choice phase. The task during this phase is to construct a suitable intervention strategy around a choice of systems methodology or combination of systems methodologies. Choice will be guided by the characteristics of the problem situation, as discovered during the examination conducted in the creativity phase, and knowledge of the particular strengths and weaknesses of different systems methodologies. A method is therefore needed that is capable of interrogating these methodologies to show what they do well and what they are less good at. Traditionally, TSI has used the SOSM, but any of the devices employed by Jackson (1991) could be adopted for this purpose (i.e., metaphors, sociological paradigms, Habermas’ three ‘interests’, positioning in the modernism versus modernism debate). The most probable outcome of the choice phase is that there will be a dominant methodology chosen, to be supported if necessary by dependent methodologies to help with secondary problem areas.

The third phase of TSI is the implementation phase. The task is to employ the selected systems methodology or methodologies with a view to bringing about positive change. If, as is usual, one methodology has been deemed dominant, it will be the primary tool used to address the problem situation. TSI stipulates, however, the need always to be open to the possibilities offered by other systems methodologies. For example, the key problems in an organization suffering from an inability to learn and adapt may be structural, as revealed by the organism and brain metaphors. But the cultural metaphor might also appear illuminating albeit in a subordinate way given the immediate crisis. In these circumstances, organizational cybernetics could be chosen to guide the intervention, but with a soft systems methodology taking on other issues in the background. Of course, as the problem situation changes, it may be necessary to reassess the state of the organization, by re-entering the creativity phase, and then select an alternative methodology as dominant. The outcome of the implementation phase should be
co-ordinated change brought about in those aspects of the problem situation currently most in need of improvement.

The three-phase TSI approach is summarized in Table 14.1.

It is important to stress, as a final point, that TSI is a systemic and interactive process. Attention needs to be given during each phase to the likely outcomes of other phases. As the problem situation changes in the eyes of the participants, a new intervention strategy will have to be devised. The only way to attend to these matters is to continually cycle around creativity, choice and implementation, ready to change those methodologies that are dominant and dependent. TSI is a dynamic metamethodology.

### 14.2.4 Methods

In the previous subsection we hinted at some of the methods that can be used by TSI in support of its three phases. Here we add a little more detail about some of them.

To encourage managers and other participants to think creatively about the problem situation they face, TSI will often ask them to view it through the lenses of various systems metaphors. Different metaphors focus attention on different aspects of the problem context. Some concentrate on structure, while others highlight human and political aspects. By using a varied set

<table>
<thead>
<tr>
<th>Table 14.1</th>
<th>The TSI metamethodology.</th>
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<tr>
<td><strong>Creativity</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Task</strong></td>
<td>To highlight significant concerns, issues and problems</td>
</tr>
<tr>
<td><strong>Tools</strong></td>
<td>Creativity-enhancing devices including systems metaphors</td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td>Dominant and dependent concerns, issues and problems identified</td>
</tr>
<tr>
<td><strong>Choice</strong></td>
<td></td>
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<tr>
<td><strong>Task</strong></td>
<td>To choose an appropriate systems intervention methodology or methodologies</td>
</tr>
<tr>
<td><strong>Tools</strong></td>
<td>Methods for revealing the strengths and weaknesses of different systems methodologies (e.g., the SOSM)</td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td>Dominant and dependent methodologies chosen for use</td>
</tr>
<tr>
<td><strong>Implementation</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Task</strong></td>
<td>To arrive at and implement specific positive change proposals</td>
</tr>
<tr>
<td><strong>Tools</strong></td>
<td>Systems methodologies employed according to the logic of TSI</td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td>Highly relevant and co-ordinated change that secures significant improvement in the problem situation</td>
</tr>
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</table>
of Morgan’s (1986) ‘images’ of organization, TSI ensures that it is gaining a holistic appreciation of the problem situation and taking on board perspectives that draw their meaning from different paradigms. Some of the common metaphors used by TSI are:

- machine;
- organism;
- brain;
- culture;
- coalition;
- coercive system.

The sorts of question it is useful to ask during metaphor analysis are:

- What metaphors throw light onto this problem situation?
- What are the main concerns, issues and problems revealed by each metaphor?
- In the light of the metaphor analysis, what concerns, issues and problems are currently crucial for improving the problem situation?

If all the metaphors reveal serious problems, then obviously the organization is in a crisis state!

Flood (1995) has suggested supplementing metaphor analysis: by allowing participants to create their own metaphors (‘divergent’ metaphorical analysis); by using techniques such as brainstorming and ‘idea writing’ to enhance creativity; and by paying attention to the ‘ergonomics’ of reflection – providing participants with the time and space to be creative. These are useful additions as long as they are not seen as a replacement for the discipline of metaphor analysis, which as has been emphasized is necessary to achieve a genuinely pluralistic appreciation of the problem situation.

The SOSM is the traditional tool employed by TSI in the choice phase. As we know from Chapter 2, it unearths the assumptions underlying different systems approaches by asking what each assumes about the system(s) in which it hopes to intervene and about the relationship between the participants associated with that system. Combining the information gained about the problem context during the creativity phase and the knowledge provided by the SOSM about the strengths and weaknesses of different systems approaches, it is possible to move toward an informed choice of systems intervention strategy. For example, if the problem context can reasonably be characterized as exhibiting clear and agreed objectives
(unitary) and as being transparent enough so that it can be captured in a mathematical model (simple), then a methodology based on simple–unitary assumptions can be used with every hope of success.

One of the main methods associated with the implementation phase is the use of dominant and dependent methodologies together and in a potentially changing relationship. More details will be given about this technique in Chapter 15.

14.2.5 Recent developments

Since its formulation TSI has been taken in rather different directions by its two originators, Flood and Jackson. In a 1995 book, Flood suggests additions to the methods that can be used in each of the three phases of the metamethodology and specifies three ‘modes’ in which TSI can be used. The three modes are the traditional ‘problem-solving’ mode, the ‘critical review’ mode and the ‘critical reflection’ mode. The critical review mode applies TSI to the assessment of candidate methodologies that might be incorporated in the metamethodology. It is an elaboration of critical awareness. The critical reflection mode sees TSI used to evaluate its own interventions after the event in order to improve TSI itself. This seems to me to be essential, if properly specified, for ensuring that TSI fulfils its obligation to pursue research as well as practice. In further books (1996, with Romm, and 1999), Flood has explained the relationships between TSI and postmodernism, and TSI, chaos and complexity theory, respectively.

Jackson’s more recent work has focused on developing ‘critical systems practice’, which is the topic covered in the final chapter of this book.

14.3 TOTAL SYSTEMS INTERVENTION (TSI) IN ACTION

The intervention described here was one of a series that took place, using TSI, within North Yorkshire Police (NYP) in the mid-1990s. NYP is the largest police force in England in terms of geographical area, covering some 3,200 square miles. It serves a population of over 750,000, some living in towns and cities, such as York, and others in low population areas such as the North Yorkshire Moors. NYP, in 1993, had a budget of over £70 million per annum and employed over 2,750 police officers and civilian support staff.

NYP was commanded, from the Force Headquarters, by a chief constable and two assistant chief constables. A civilian finance director oversaw all
the finance and administrative activities. This group of senior staff constituted the Chief Officer Team of NYP. There were seven divisions, each headed by an officer of superintendent rank, which were responsible for operational policing.

The intervention was conducted by Keith Ellis, an academic and consultant with experience of TSI, and Andrew Humphreys, a divisional commander in NYP who was on secondment, learning about systems thinking. I am grateful to Keith Ellis for allowing me to draw heavily on, and take extracts from, his account of the project (Ellis, 2002).

The Chief Constable had determined that NYP should develop a long-term organizational strategy that would enable it to realize its mission. First, however, it was necessary to create a strategic planning process that could produce such a strategy. That was the aim of this particular intervention, which according to the brief should develop ‘a top level corporate strategic planning process . . . together with the approach to be used.’

The consultants (Ellis and Humphreys) were under no illusions about the scale of the task given the complexity of the organization and its environment, and the current propensity in NYP toward reactive planning. They also recognized the major importance of the project for the Chief Officer Team, who were the clients and who were expecting major changes to the management of the organization to result from it. It was agreed that the intervention would last about a year with regular reports back to the Chief Officer Team. The consultants also secured a free hand to utilize any methodology they considered appropriate. They chose TSI and used it in a pure form so that they could learn as much as possible about the metamethodology itself as well as improve the situation in NYP. This allows the three phases to be described very precisely.

The creativity phase had two interrelated aspects: an interview programme and a metaphor analysis.

In order to gain a holistic understanding of the problem situation surrounding the strategic planning process in NYP, it was essential to gather opinion from the widest possible range of stakeholder groups. The following stakeholder groups were identified:

- NYP chief officers;
- divisional commanders and police officer departmental heads;
- police staff associations;
- special constabulary;
- police authority chairpersons;
- North Yorkshire County Council senior officials;
Forty-two representatives of these groups were interviewed. The interviews were semistructured, based around a set of ‘trigger questions’, and were tape-recorded, but with contributions to remain anonymous to all but the consultants.

A metaphor analysis was conducted immediately after each interview and the results combined to build up a ‘metaphoric picture’ of the organization. The metaphors used for this were of the organization as a:

- machine;
- organism;
- brain;
- culture;
- coercive (political) system.

The majority of stakeholder representatives saw NYP as a goal-seeking machine dominated by hierarchy, engaged in repetitive functions and controlled through financial constraints. It was hindered as a ‘machine’ by a lack of clear direction from the top. Moreover, because NYP operated like a machine, current top-level planning ignored environmental influences.

Despite its machine-like character, NYP simply had to recognize environmental disturbances and react accordingly in some areas of its activity. Use of the organism metaphor revealed that this had gone furthest at the divisional and local service levels, where stakeholders were becoming involved in planning. This was not, however, mirrored at the top level of the organization.

The Viable System Model (VSM) (see Chapter 6) was used to help interpret the interview results from a brain perspective. It revealed that NYP was weak in terms of its capacity to learn and adapt. It possessed only a limited development function, connecting it to the outside world, and lacked an audit function that would enable senior managers to get feedback about the performance of the operational elements. As a result the Chief Officer Team tended to forget about their environment and to spend their time trying to find out what was going on lower down. This was inevitably
perceived as interference by the divisional commanders who retaliated by actively withholding information. NYP, it seemed, was very far from the ideal of a learning organization.

The culture metaphor, applied to the results of the interviews, showed that NYP was a complex mix of cultures, with different camps distinguished by phrases such as ‘shapers’ and ‘doers’, ‘dreamers’ and ‘implementers’, ‘innovators’ and ‘applicators’. Many interviewees identified separate ‘language zones’ and pleaded for a ‘common language’, ‘management speak-free documents’, ‘clarified value statements’ and ‘targeted documents’. In general there seemed to be a divide between those whose thinking was dominated by the ‘single issue of policing with ever-diminishing resources’ and those most concerned about ‘socially demanded 24-hour policing in a multifaceted community’. NYP seemed to be in the process of shifting from unitary to pluralist internal relations, but with no means of managing pluralism.

Externally, NYP was entwined in a complex web of political engagements involving itself, central government and local government. Internally, there were also a number of political agendas. Nevertheless, the ‘coercive’ exercise of power did not seem to be a problem. It existed in terms of top-down planning and decision-making, but this was seen as normal for a goal-driven organization.

On the basis of the interviews and the metaphor analysis, the consultants concluded that the dominant concerns and issues for NYP revolved around the need for viable organizational structures that would enable the shift from a ‘closed mechanistic entity’, through an ‘open organismic body’ into a ‘learning brain organization’. Also important was the need for a strategic planning process, owned by the Chief Officer Team, that would assist this shift at the same time as introducing a more pluralistic approach to planning. Rapid change meant that pluralism and politics were inevitable facts of life that had to be embraced.

Using the SOSM as the main vehicle for the ‘choice’ phase, it seemed clear to the consultants that the NYP strategic planning problem situation could be described as systemic–pluralist.

NYP was a complex system containing many sub-subsystems, which themselves contained components that were made up of elements. There was no doubt that the wider system, of which NYP was a part, was becoming more turbulent.

One aspect of that environmental turbulence was a growing diversity of opinion about the role of police in a modern society. The debates taking
place were reflected internally in NYP itself. There was increasing divergence of values and beliefs, not least between the chief officers and lower ranks.

The SOSM analysis pointed at Ackoff’s interactive planning (see Chapter 9) as a suitable systems methodology to help develop the strategic planning process. Its strengths were its ability to marshal pluralism to productive ends together with its willingness to entertain models that could help design complex systems. At the same time, it had to be borne in mind that the metaphor analysis had pointed strongly to the need to develop viable organizational structures capable of supporting an effective strategic planning process. And the brain perspective, based on the VSM, had seemed particularly insightful in revealing what problems existed in this respect.

In the event the consultants decided to proceed with the VSM as the dominant approach, to tackle structural weaknesses in the organization, closely coupled with Interactive Planning (IP), in a dependent role, to move forward with actually developing the strategic planning process.

Implementation therefore proceeded using the VSM and IP in combination. The VSM diagnosis brought to the fore a variety of structural issues that needed addressing:

- **System 5** –
  - identity weak and fragmented;
  - chief officers did not act as a team;
  - lack of strategy-making process left NYP without corporate direction;
  - chief officer-thinking dominated by lower level tactical and operational issues;
  - chief officer interference in operational activities.
- **System 4** – almost non-existent development function.
- **System 3** – poor operational control by the managerial team.
- **System 3*** – limited and ineffective audit of operational unit activities.
- **System 2** – lack of co-ordination of operational units.

The initial, mess formulation, stage of IP could draw from the outcomes of the creativity phase of TSI. A reference scenario was constructed that revealed the absence of a strategic planning process in NYP and lack of clarity about how to get one. It also highlighted the need for: improvements in clarifying organizational values; involving stakeholders in planning; agreeing a planning terminology; and communicating, disseminating and co-ordinating plans.
Working with a number of the stakeholders, the consultants then produced an idealized design for a strategic planning process. This had as key attributes:

- involving all those who might affect, or be affected by, strategies relating to policing in North Yorkshire;
- informing and communicating through involvement, thus avoiding the pitfalls associated with ‘retelling the strategy’;
- enhancing the relevance of strategic planning to operational policing by concentrating on core service areas;
- ensuring continuity in the planning process;
- providing a clarity of purpose within community consultative bodies;
- providing a basis for innovation within a dynamic and unstable environment.

Having decided on the ends, it was now necessary to agree means (as informed by the VSM diagnosis), secure resources and begin implementation. To this end, the draft, idealized design, strategic planning process was presented at a two-day workshop attended by the chief officers, as clients, and representatives of the wider set of stakeholder groups.

Initially, there were severe problems. The chief officers had become aware of findings critical of them that had emerged during the interview programme. The Chief Constable, particularly unwilling to see his authority challenged in the presence of influential outsiders, reacted against this information in an autocratic and coercive manner. In turn this led to other stakeholders modifying their ‘messages’. Some persuasion had to be used to overcome the Chief Constable’s defensive mindset of ‘I’m in charge’ and replace it with one that recognized that involving others assists with creativity and ‘spreads the risk’. Eventually, this worked, the situation was recovered and the workshop achieved its aims. In particular, a NYP five-year strategic planning process was agreed and fully operationalized in 1995.

Ellis argues that TSI provided a powerful guiding metamethodology for this intervention, which produced useful output for NYP. The following list of successful outcomes reflects both the VSM and IP inputs:

- a strategic planning process that replaced ad hoc tactical planning;
- an acceptance by the Chief Constable that wider stakeholder input to strategic planning is useful;
- Police Authority input to strategic planning;
- a generalized, systemic understanding of the nature of NYP as a complex organization undergoing radical change;
a recognition by the Chief Officer Team of the strategic nature of their roles in terms of boundary scanning and the relationship between NYP and the wider system at local and national levels;

- an understanding that NYP needed to become a learning organization and of the need to overcome organizational defensive routines.

As a result of the intervention Ellis was able to: suggest improvements to TSI, particularly with regard to its ability to recognize and respond to coercion; learn much about using TSI to bring about change, which he was able to incorporate into his own ‘systemic theory of organisational change’ (Ellis, 2002); and use the considerable knowledge he gained of NYP to secure further consultancy contracts.

14.4 CRITIQUE OF TOTAL SYSTEMS INTERVENTION (TSI)

It can reasonably be argued that CST rescued systems theory from a crisis produced by warring paradigms and offered it a coherent developmental strategy, as a transdiscipline, based on firmer foundations. A similar claim can be made for TSI in relation to systems practice. By setting out a meta-methodology for using methodologies adhering to different paradigms in the same intervention and on the same problem situation, TSI suggested that the approaches and skills developed by different systems practitioners could be brought together and co-ordinated to achieve a more successful form of systems intervention.

TSI rejects isolationism and moves beyond imperialism. Imperialism, it will be recalled, is prepared to use different tools and techniques, but only in the service of its favoured theoretical assumptions and methodology. TSI suggests a way of managing, in a coherent way, very different methodologies built on the foundations of alternative paradigms. This puts it a step ahead of other systems approaches in dealing with the complexity, heterogeneity and turbulence of the problem situations we face today. At the same time TSI rejects pragmatism, insisting that the use of a variety of methodologies and methods must remain theoretically informed to ensure that learning can take place and be passed on to others.

TSI does not try to disguise the difficulties inherent in using different methodologies alongside one another in highly complex situations. Indeed, it argues that, although this is desirable, if it proves practically impossible, then the best way to handle methodological pluralism is to clearly state that one methodology is being taken as dominant (and others as dependent) for
some period of time. One methodology, encapsulating the presuppositions of a particular paradigm, is granted imperialistic status — but only temporarily; its dominance is kept under continuous review.

Another strength of TSI has been to bring together pluralism in the creativity phase (looking at the problem situation from different perspectives) with pluralism in terms of the management of different methodologies in combination (in the choice and implementation phases).

If TSI’s great strength is operating at the metamethodological level, this also leads to some weaknesses. As Mingers and Brocklesby (1996) point out, TSI requires the use of ‘whole’ methodologies. This has two consequences. First, TSI is dependent on the set of systems methodologies it has inherited, such as system dynamics, organizational cybernetics, interactive planning, CSH, etc. These were not always carefully formulated with explicit reference to their theoretical foundations. It can be argued that TSI would be better developing its own ‘pure’ methodologies that are clearly related to the theoretical paradigms it recognizes. Second, it seems that, once you have chosen a particular methodology as dominant, you must employ only the methods and techniques closely associated with it and in exactly the manner prescribed by that methodology. For example, having chosen Checkland’s SSM you get rich pictures, root definitions and conceptual models, but are prevented from using causal loop diagrams or idealized design. There is an unnecessary lack of flexibility here that needs addressing.

There is nothing philosophically wrong with using a selection of methods and techniques, as long as they are employed according to an explicit logic. Indeed, it allows a much greater responsiveness to the peculiarities of each problem situation as it evolves during an intervention.

Another criticism centres on the lack of attention given to the process of using TSI. For example, Taket and White (2000) find little guidance on the roles and styles that facilitators might adopt. Most detail is provided on the implementation phase, whereas they suspect users of TSI have greatest difficulty with the creativity and choice phases.

A further gap in the TSI armoury is highlighted by those management scientists who give attention to the users of methodologies. TSI, which demands multimethodological competence and adherence to a variety of ‘commitments’, clearly asks a great deal from would-be users. Brocklesby (1997), for example, identifies severe cognitive difficulties for individuals trying to work across paradigms. TSI does not detail whether or how the relevant competences can be obtained.

Again, there are those who accuse TSI of partiality in seeking improvement. TSI suggests it is in favour of human emancipation, but tends to
ignore environmental concerns. For Midgley (1996), the two are inextricably linked.

TSI receives support from CST, which has spent a considerable amount of time and effort establishing, developing and promoting its theoretical tenets. Inevitably, this openness has drawn the attention of critics. The two main lines of criticism come from those who take a strong paradigm incommensurability stance and from postmodernists.

TSI grounds its pluralism, or complementarism, on Habermas’ early theory of human interests – a theory that he has himself subsequently abandoned. This theory suggests that TSI can, on the basis of the three human interests, stand ‘above the paradigms’ and pick out appropriate methodologies according to the particular human interest to be served. Tsoukas (1993), however, notes that different paradigms constitute different realities and, therefore, seek to provide answers to all three human interests. If TSI claims to stand above the paradigms, adjudicating between them, how can this claim be grounded? If it has to abandon this claim, does it mean that CST constitutes a paradigm in its own right? If this is the case what has happened to pluralism?

From their postmodern perspective, Taket and White (2000) see TSI as an approach that seeks to tame pluralism and diversity rather than embracing them. The emphasis on rigour and formalized thinking in TSI sets up a tension, they believe, with the espoused purpose of employing a plurality of methodologies and methods. A deconstruction of the language of TSI reveals a contradiction between statements that imply closure and those encouraging an openness to other approaches and ways of proceeding. Taket and White also worry that the emphasis on rationality and abstraction in TSI leads to the privileging of methods that are verbally based and that this can hinder the participation of some groups. Another problem with giving primacy to rationality is that the feelings and emotions of participants in decision processes get ignored.

14.5 THE VALUE OF TOTAL SYSTEMS INTERVENTION (TSI) TO MANAGERS

Proponents of TSI have always warned managers not to be fooled by those who peddle fads and quick fixes. The problems they face are too complicated and diverse to be handled by anything other than considered, and often prolonged, holistic endeavour. TSI seeks to guide and structure this holistic endeavour, in particular by:
Advocating and enabling the maximum creativity when the problem situation is being analysed.

Helping managers to evaluate the usefulness to them, in their situation, of different management solutions and, particularly, different systems approaches.

Opposing a ‘one best way in all circumstances’ mentality and ensuring that managers have available to them a variety of systemic problem-resolving strategies that can be used in combination if necessary.

Asking managers to take into account a number of considerations – technical (prediction and control), practical (mutual understanding) and emancipatory (fairness) – when planning and evaluating interventions.

Providing a learning system that, through critical selfreflection, managers can tap into to improve their own practice.

14.6 CONCLUSION

The early years of CST were ones of huge intellectual excitement, providing for very rapid theoretical and practical development of the approach. These years culminated in the publication, in 1991, of three books that took their inspiration from CST and tried to present the main findings as they stood at that date. Flood and Jackson’s (1991b) Critical Systems Thinking: Directed Readings was a collection of papers, accompanied by a commentary, that traced the origins and development of CST. Jackson’s Systems Methodology for the Management Sciences sought to provide a comprehensive critique of the different systems approaches, drawing on the social sciences as the basis for that critique. Flood and Jackson’s (1991a) Creative Problem Solving: Total Systems Intervention introduced the TSI metamethodology as a means of operationalizing CST in practice. This latter volume, in particular, spawned a myriad of applications of CST using TSI. By 1991, therefore, a position had been established from which creative holism could be further developed.

REFERENCES


