

Systems Theory and Management Thinking

PETER CHECKLAND

University of Lancaster, United Kingdom

Two inquiring systems developed since the 1960s—Vickers's concept of the appreciative system and the soft systems methodology, are highly relevant to the problems of the 21st century. Both assume that organizations are more than rational goal-seeking machines and address the relationship-maintaining and Gemeinschaft aspects of organizations, characteristically obscured by functionalist and goal-seeking models of organization and management. Appreciative systems theory and soft systems methodology enrich rather than replace these approaches

Two rich metaphors provide a useful frame within which any consideration of the problems facing us in the late 20th century can, with advantage, be placed. As a result of the first industrial revolution, based on energy, and the current second one, based on information, the world is increasingly Marshall McLuhan's "global village." More and more problems need to be examined in a global rather than a local context and, as we do so, we need to remember that we are all of us, in Buckminster Fuller's great phrase, "the crew of Spaceship Earth."

Thanks to the material successes of the two industrial revolutions we are a crew with rising expectations of high living standards. But we are increasingly aware that the wealth-generating machine may not be able to meet those expectations without doing unacceptable damage to Spaceship Earth, which, together with the free supply of energy from our sun, is the only given resource we have.

This triangle—of expectations, wealth generation, and protection of the planet—will have to be managed with great care at many different levels as we enter the 21st century if major disasters are to be avoided. Unfortunately, our current ideas on *management* are rather primitive and are probably not up to the task. They stem from the technologically oriented thinking of the 1960s, and they now need to be enlarged and enriched. This may well be possible from the systems thinking of the 1970s and 1980s, which has placed that body of thought more firmly within the arena of human affairs.

This article will examine the legacy of thinking about management and organizations that we get from the 1960s and develop a richer view that stems from more recent systems thinking, especially Vickers's work on the theory of *appreciative systems* and work on soft systems methodology, which can be seen as a way of making practical use of Vickers's concepts. This, it is argued, is more relevant than the current conventional wisdom to managing the problems of the new century.

MANAGEMENT AND ORGANIZATION

In spite of a huge literature—some of it serious, much of it at the level of airport paperbacks—and courses in colleges and universities worldwide, the role of the manager and the nature of the process of managing remain problematic, whether we are concerned with trying to manage global, institutional, or personal affairs. Anyone who has been a professional manager in an organization knows that it is a complex role, one that engages the whole person. It requires not only the ability to analyze problems and work out rational responses but also, if the mysterious quality of leadership is to be provided, the ability to respond to situations on the basis of feelings and emotion.

One of the reasons the manager's role remains obstinately problematic stems from our less-than-adequate thinking about the context in which managers perform, namely the organization. Some basic systems thinking indicates that if we adopt a limited view of organization then the conceptualization of the manager's role will inevitably also be rather threadbare. Thus a manager at any level occupies a role within a structure of roles that constitutes an organization. The activity undertaken by managers can be seen as a system of activity that serves and supports and makes its contribution to the overall aims of the organization as a purposeful whole. Now, if one system serves another, it is a basic tenet of systems thinking that the system that serves can be conceptualized only after prior conceptualization of the system served (Checkland, 1981, p. 237). This is so because the form of a serving system, if it is truly to serve, will be dictated by the nature of the system served: That will dictate the necessary form of any system that aspires to serve and support it.

Now there is a conventional wisdom about the nature of organization that persists in spite of the fact that anyone who has worked within an organization knows that this image conveys only part of the story. The conventional model is that an organization is a social collectivity that arranges itself so that it can pursue declared aims and objectives that individuals could not achieve on their own. Given this view of organization, the manager's role is to help achieve the corporate goals, and it follows that the manager's activity is essentially rational decision making in pursuit of declared aims. This is the conventional wisdom even though intuitively we all have a rich sense that organizations in which we have worked are more than rational goal-seeking machines. The experienced

day-to-day reality of organizations is that they have some of the characteristics of the tribe and the family as well as the characteristics necessary if they are to order what they do rationally so as to achieve desired objectives such as, in the case of industrial companies, survival and growth. In spite of this folk knowledge, the orthodoxy has been very strong, and we can see this both in the literature of organization theory and in that of management science.

ORGANIZATION THEORY

This is not the place to discuss the development of organization theory in any detail, but it is useful for present purposes to mark the general shape of this field as it emerges in such wide-ranging studies as Reed's (1985) *Redirections in Organisational Analysis*. The general shape is that of the establishment of an orthodoxy (the systems/contingency model that held sway from the 1930s to the 1960s) and the challenge to that orthodoxy since then, with no single dominant alternative. Nevertheless, the challenging models do, in general, have in common the fact that they see organizations not as reified objects independent of organizational members, as in the orthodox systems model, but as the continually changing product of a human process in which social reality is socially constructed: the title of Berger and Luckmann's (1966) well-known book—*The Social Construction of Reality*—neatly captures this alternative strand of thinking.

At a broad level of generalization, we can see the two major approaches as reflecting the two main categories of thinking about organizations on which a pioneering sociologist, Ferdinand Tönnies, built his account. In his major work *Gemeinschaft und Gesellschaft* (1887) (translated as *Community and Association* by Loomis, 1955), Tönnies constructed models of two types of society or organization. There is the natural living community into which a person is born, the family or the tribe (*Gemeinschaft*), and there are the formally created groupings (*Gesellschaft*) that a person joins in some contractual sense, as when he or she becomes an employee of a company or joins a climbing club.

In general, the orthodox view of organizations emphasizes their *Gesellschaft* nature, that they are created to do things collectively (*achieve goals* is the usual language) that would be beyond the reach of individuals. The alternatives emphasize rather that all social groupings take on some flavor of *Gemeinschaft*: Being in an organization is something like being part of a family. Intuitively, the lived experience of organizations that we all gradually acquire gives us the folk knowledge that organizations exhibit some of the characteristics of both models.

That the orthodox view has been dominant can be seen by perusing college textbooks, which present students with the conventional wisdom. For example, in Khandwalla's (1979) *The Design of Organizations*, the view of organizations as open systems devoted to achieving corporate objectives is described as "the most powerful orientation in organization theory today" (p. 251). Much attention is paid to well-known work aimed at correlating an organization's structure with its core tasks carried out in an environment with which it interacts (Lawrence &

Lorsch, 1967; Pugh & Hickson, 1976; Woodward, 1965; etc.). Reed's (1985) survey argues that "systems theorists . . . had dominated organizational analysis since the 1930s" (p. 35) but that by the 1960s there was no common history or intellectual heritage. By the 1970s, a systems-derived approach was "struggling to retain its grip on organizational studies" (p. 106). This does not mean that the orthodoxy has lost its adherents, however. In the same year that Reed's book was published, Donaldson (1985) brought out his *In Defence of Organization Theory*, the defense being of the "relatively accepted contingency-systems paradigm" (p. ix).

Both Reed and Donaldson make much reference to a book that marks as much as any other the challenge to the orthodox systems view: Silverman's (1970) *The Theory of Organizations*. Silverman contrasts the systems view from the 1950s and 1960s with what he calls "the Action frame of reference" in which action results from the meanings that members of organizations attribute to their own and each other's acts. Organizational life becomes a collective process of meaning attribution; attention is displaced away from the apparently impersonal processes by means of which, in the conventional model, a reified organization as an open system responds to a changing environment. Some of Silverman's subheadings convey the nature of his argument: Action not behaviour, Action arises from meanings, Meanings as social facts, Meanings are socially sustained, Meanings are socially changed.

This important work opens the way to various alternatives to the systems orthodoxy. Donaldson's discussion, for example, includes social action theory, the sociology of organizations, and the strategic choice thesis. Just as the orthodoxy draws on a positivist philosophy and a functionalist sociology, the alternatives are underpinned philosophically by phenomenology, and sociologically by an interpretive approach derived from Weber and Schutz.

It has to be said that the orthodox view provides a much clearer model of organization, and hence the manager's role, than is provided by the alternatives. Concentrating on the *Gesellschaft* aspects of an organization, the conventional view sees it as an open system seeking to achieve corporate objectives in an environment to which it has to adapt. Its tasks are analyzed and assigned to groups within a functionalist structure, and the managers' role is essentially that of decision making in pursuit of corporate aims that also provide the standards against which progress will be judged. No similarly clear picture is provided by the alternatives, beyond the notion that organizations are characterized essentially by discourse that establishes the meanings that will underpin action by individuals and groups.

It is not at all surprising that that section of the management literature most concerned with intervening in, in order to influence and shape, real-world situations, namely management science, should itself focus on the orthodox systems model.

In examining briefly the state of thinking in management science, it is useful to focus on the work of Herbert Simon. There are two reasons for this. First, it has been a dominating contribution in the field; second, in developing an approach based on the work of Vickers, we find that he explicitly contrasted his approach with that of Simon, drawing attention to the reliance of Simon on a goal-seeking model of human action that he himself was deliberately trying to transcend.

In the period after the Second World War, strenuous efforts were made to apply the lessons from wartime operations research to industrial companies and government agencies. In doing this, a powerful strand of systems thinking was developed—it would now be thought of as “hard” systems thinking—concerned broadly with engineering a system to achieve its objectives. Systems were here assumed to exist in the world; it was assumed that they could be defined as goal seeking; and ideas of system control were generalized in cybernetics. These ideas mapped the orthodox stance of organization theory discussed in the previous section, and they conceptualized the manager’s task as being to solve problems and take decisions in pursuit of declared goals. Indeed, this paradigm is succinctly expressed in Ackoff’s (1957) assumption that problems ultimately reduce to the evaluation of the efficiency of alternative means for a designated set of objectives.

This is the field to which Simon has made such a significant and influential contribution, the flavor of which is captured in the title of his 1960 book: *The New Science of Management Decision*.

At a round table devoted to his work, Zannetos (1984) summarized Simon’s legacy as “a theory of problem solving, programs and processes for developing intelligent machines, and approaches to the design of organizational structures for managing complex systems” (p. 75).

Overall, Simon sought a science of administrative behavior and executive decision making. In an intellectually shrewd move that has no doubt helped to make this body of work so influential, Simon wisely abandoned the notion that managers and administrators seek to *optimize*, replacing it with the idea of *satisficing*: the idea that the search is for solutions that are *good enough* in the perceived circumstances, rather than optimal (March & Simon, 1958). Nevertheless, the flavor of hard systems thinking is retained in the claim that the search is “motivated by the existence of problems as indicated by gaps between performance and goals” (p. 73).

Similarly in another of Simon’s major contributions, the development with Newall of GPS (general problem solver), a heuristic computer program that seeks to simulate human problem solving, the whole work is built on the concept of problem solving as a search for a means to an end that is already declared to be desirable (Newall & Simon, 1972). Simon (1960) stated,

Problem solving proceeds by erecting goals, detecting differences between present situation and goal, finding in memory or by search tools or processes that are relevant to reducing differences of these particular kinds, and applying these tools or processes. Each problem generates subproblems until we find a subproblem we can solve—for which we have a program stored in memory. We proceed until, by successive solution of such subproblems, we eventually achieve our overall goal—or give up. (p. 27)

This is an especially clear statement of the thinking, derived from the systems theory of the 1950s, that has dominated management science and that underlies organization theory's orthodox model of what an organization is.

It is the argument here that this goal-seeking model, largely adequate though it was in the management science that contributed to post-Second World War industrial development, is not rich enough to support and sustain the management thinking now needed by the crew of Spaceship Earth, that spaceship having become akin to a global village.

An alternative, richer perspective is provided by the systems thinking of the 1970s and 1980s, and in particular by Vickers's development of appreciative systems theory and by an approach to intervention in human affairs that can be seen as making practical use of that theory, namely, soft systems methodology.

These are discussed in the next section, but it may be useful to point out at once that these are developments in what is now known as "soft" systems thinking, as opposed to the hard systems thinking of the 1950s and 1960s that permeates both orthodox organization theory and Simonian management science. The usual distinction made between the two is that the hard systems thinking tackles well-defined problems (such as optimizing the output of a chemical plant), whereas the soft approach is more suitable for ill-defined, messy, or wicked problems (such as deciding on health care policy in a resource-constrained situation). This is not untrue, but it fails to make an intellectual distinction between the two. The real distinction lies in the attribution of systemicity (having the property of system-like characteristics). Hard systems thinking assumes that the world is a set of systems (i.e., is *systemic*) and that these can be *systematically* engineered to achieve objectives. In the soft tradition, the world is assumed to be problematic, but it is also assumed that *the process of inquiry* into the problematic situations that make up the world can be organized as a system. In other words, assumed systemicity is shifted: from taking the world to be systemic to taking the process of inquiry to be systemic (Checkland, 1983, 1985b).

Thus in the following section both appreciative systems theory and soft systems methodology describe inquiring processes—the former with a view to understanding, the latter with a view to taking action to improve real-world problem situations.

Finally, we may note that soft systems thinking can be seen as representing the introduction of systems thinking into Silverman's action frame of reference, although the organization theory literature is apparently at present innocent of any knowledge of post-1960s developments in systems thinking (Checkland, 1994).

THE NATURE OF AN APPRECIATIVE SYSTEM

The task that Vickers set himself in his "retirement" after 40 years in the world of affairs was to make sense of that experience. In the books and articles that he then wrote he constructed

an epistemology which will account for what we manifestly do when we sit round board tables or in committee rooms (and equally though less explicitly when we try, personally, for example, to decide whether or not to accept the offer of a new job). (G. Vickers, personal communication, July 1974)

In his thinking as this project developed, Vickers first rejected the ubiquitous goal-seeking model of human activity; then he found systems thinking relevant to his task; but he also rejected the cybernetic model of the steersman (whose course is defined from outside the system), replacing it by his more subtle notion of "appreciation" (Vickers, 1965, is the basic reference). He expressed his intellectual history in the following terms in a letter to the present writer in 1974:

It seems to me in retrospect that for the last twenty years I have been contributing to the general debate the following neglected ideas:

(1) In describing human activity, institutional or personal, the goal-seeking paradigm is inadequate. Regulatory activity, in government, management or private life consists in attaining or maintaining desired relationships through time or in changing and eluding undesired ones

(2) But the cybernetic paradigm is equally inadequate, because the helmsman has a single course given from outside the system, whilst the human regulator, personal or collective, controls a system which generates multiple and mutually inconsistent courses. The function of the regulator is to choose and realise one of many possible mixes, none fully attainable. In doing so it also becomes a major influence in the process of generating courses.

(3) From 1 and 2 flows a body of analysis which examines the "course-generating" function, distinguishes between "metabolic" and functional relations, the first being those which serve the stability of the system (e.g. budgeting to preserve solvency and liquidity), the second being those which serve to bring the achievements of the system into line with its multiple and changing standards of success. This leads me to explore the nature and origin of these standards of success and thus to distinguish between norms or standards, usually tacit and known by the mismatch signals which they generate in specific situations, and values, those explicit general concepts of what is humanly good and bad which we invoke in the debate about standards, a debate which changes both. (G. Vickers, personal communication, 1974)

In developing the theory of appreciative systems and relating it to real-world experience, Vickers never expressed the ideas pictorially, in the form of a model, although this seems a desirable form in which to express a system. (His explanation for this lack was disarming: "You must remember," he said, "that I am the product of an English classical education" [G. Vickers, personal communication, 1979]). What follows is an account of the model of an appreciative

system developed by Checkland and Casar (1986) from the whole corpus of Vickers's writings.

From those writings we may highlight some major themes that recur:

- A rich concept of day-to-day experienced life (compare Schutz's [1967] *Lebenswelt*)
- A separation of judgments about what is the case, *reality judgments*, and judgments about what is humanly good or bad, *value judgments*
- An insistence on *relationship maintaining* as a richer concept of human action than the popular but poverty-stricken notion of goal seeking
- A concept of action judgments stemming from reality and value judgments
- A notion that the cycle of judgments and actions is organized as a system

The starting point for the model is the *Lebenswelt*, the interacting flux of events and ideas unfolding through time. This is Vickers's "two-stranded rope," the strands inseparable and continuously affecting each other. Appreciation is occasioned by our ability to select, to choose. Appreciation perceives (some of) reality, makes judgments about it, contributes to the ideas stream, and leads to actions that become part of the events stream. Thus the basic form of the model is that shown in Figure 1. There is a recursive loop in which the flux of events and ideas generates appreciation, and appreciation itself contributes to the flux. Appreciation also leads to action that itself contributes to the flux.

It is now necessary to unpack the process of appreciation. From Vickers's writings we take the notion of perceiving reality selectively and making judgments about it. The epistemology of the judgment making will be one of relationship managing rather than goal seeking, the latter being an occasional special case of the former. And both reality and value judgments stem from standards of both fact and value: standards of what *is*, and standards of what is good or bad, acceptable or unacceptable. The very act of using the standards may itself modify them.

These activities lead to a view on how to act to maintain, to modify, or to elude certain forms of relevant relationships. Action follows from this, as in Figure 2.

The model also tries to capture Vickers's most important point and greatest insight, namely, that there is normally no ultimate source for the standards by means of which what is noticed is deemed good or bad, important or unimportant, relevant or irrelevant, and so on. The source of the standards is *the previous history of the system itself*. In addition, the present operation of the system may modify its present and future operation through its effect on the standards. These considerations, together with those already discussed, yield Figure 2 as a model of an appreciative system. The most difficult aspect to model is the dynamic one, but it should be clear from Figure 2 that the dynamics of the system will be as shown in Figure 3. The form of the appreciative system remains the same, whereas its contents (its *setting*) continually (but not necessarily continuously) change. An appreciative *system* is a process whose products—cultural manifes-

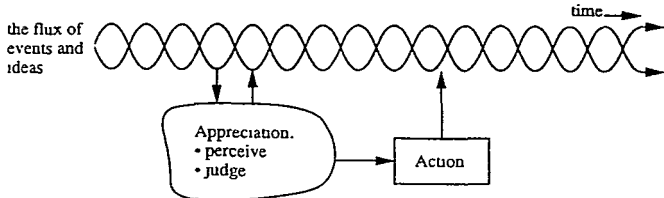


Figure 1: The Structure of an Appreciative System

SOURCE: Checkland and Casar (1986).

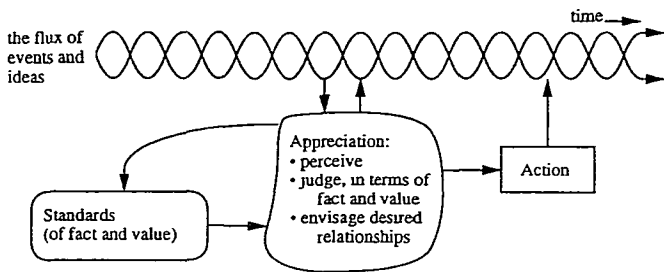


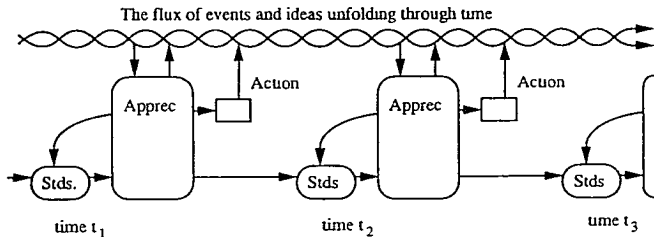
Figure 2: The Structure of an Appreciative System Expanded

SOURCE: Checkland and Casar (1986)

tations—condition the process itself. But the system is not operationally closed in a conventional sense. It is operationally closed via a structural component (the flux of events and ideas) that ensures that it does not, through its actions, reproduce exactly itself. It reproduces a continually changed self, by a process that Varela (1984) called the “natural drift” of “autopoietic systems” (Maturana & Varela, 1980), systems whose component elements create the system itself. Through its (changing) filters the appreciative system is always open to new inputs from the flux of events and ideas, a characteristic that seems essential if the model is to map our everyday experience of the shifting perceptions, judgments, and structures of the world of culture.

Vickers’s claim was that he had constructed an epistemology that can provide convincing accounts of the process by which human beings and human groups deliberate and act. The model in Figures 2 and 3 is a systemic version of the epistemology.

Checkland and Casar (1986) used it to give an account of the learning in a systems study of the Information and Library Services Department of what was



The system content is the product of the previous history of the system itself

Figure 3: The Dynamics of an Appreciative System

SOURCE: Checkland and Casar (1986)

then ICI Organics (a manufacturer of fine chemicals within the ICI Group), a study that has been described in detail elsewhere (Checkland, 1985a; Checkland & Scholes, 1990). This study was carried out by a group of managers in the function with some outside help in the use of soft systems methodology (SSM), which was the methodology used. It is a way of making practical use of the notion of an appreciative system, and it will be discussed briefly in the next section. It entails structuring a debate about change by building models of purposeful activity systems and comparing them against perceptions of the real world as a means of examining what the appreciative settings are in the situation in question and how they and the norms or standards are changing. In the study in question, there were three cycles of this learning process.

In the first cycle, the study team's interest and concern was to rethink the role of their function in a changing situation. They perceived many facts relevant to this, which resulted in 26 relevant systems. They selected and judged these facts in terms of a conception of a particular relationship and standards relevant to it: They accepted the relevance of a simple model that took as given that their function was a support to the wealth-generating operations of their company, and they implicitly made use of standards according to which a good version of this relationship would be to make efficient, effective, and timely provision of information to other parts of the company.

These considerations contributed to the ideas stream of the Lebenswelt and led to the action of exploring several perceptions of the relationship between the function and the rest of the company in greater depth. In this second methodological cycle, the focus was still on the relationship between function and company but the appreciative settings began to change. This can be expressed as a change in standards resulting from the first cycle of appreciation. The shift was in the concept of what would constitute a good relationship:

The focus shifted from ILSD (Information and Library Services Department) as a reactive function responding quickly and competently to user requests and

having the expertise to do it, to ILSD as a proactive function, one which could on occasion tell actual and potential users what they *ought* to know. (Checkland, 1985a, p. 826)

In the third cycle, the new concept of ILSD was developed and, in the language of Figure 2, several hypothetical forms of relevant relationships were considered. This led to attention being given both to internal relationships within the function (How different would they have to be to sustain a proactive role?) and to the relationship between the function and the company. These considerations led to decisions on actions necessary to broaden the appreciative process. The actions taken were to make both internal (within ILSD) and external presentations of the results of the study. These events entered the company's *Lebenswelt* and had the effect of starting to bring about the change in the company's appreciative system, as evidenced by the remark made by the research manager at the external presentation, namely, that "I have known and worked with ILSD for 20 years and I came along this morning out of a sense of duty. To my amazement I find I now have a new perception of ILSD" (Checkland, 1985a, p. 830).

Finally, the company's subsequent allocation of significant new resources to ILSD can be described as illustrating its implicit adoption of new standards with respect to the Information and Library Services function, standards whose change stems from the recent history of the company's appreciative system, involving input of ideas and events from the systems study itself.

THE APPRECIATIVE PROCESS IN ACTION: SOFT SYSTEMS METHODOLOGY

It is not appropriate here to give a detailed account of SSM, which is described in numerous books and articles since the early 1970s. (The basic books describing its development are Checkland, 1981; Checkland & Scholes, 1990; and Wilson, 1984; a burgeoning secondary literature may be sampled via, for example, Avison & Wood-Harper, 1990; Davies & Ledington, 1991; Hicks, 1991; Patching, 1990; and Waring, 1989.)

SSM was not an attempt to operationalize the concept of an appreciative system; rather, after SSM had emerged in an action research program at Lancaster University, it was discovered that its process mapped to a remarkable degree the ideas Vickers had been developing in his books and articles (Checkland, 1981, chap. 8).

The Lancaster program began by setting out to explore whether or not, in real-world managerial rather than technical problem situations, it was possible to use the approach of systems engineering. It was found to be too naive in its questions (What is the system? What are its objectives? etc.) to cope with managerial complexity, which, we could now say, was always characterized by conflicting appreciative settings and norms. Systems engineering as developed for technical (well-defined) problem situations had to be abandoned, and SSM emerged in its place.

The development of SSM has been characterized by four points in time at which what can now be seen, with hindsight, as crucial ideas moved the project forward (Checkland & Haynes, 1994). The first was the realization that all real-world problem situations are characterized by the fact that they reveal human beings seeking or wishing to take *purposeful action*. This led to purposeful action being treated seriously as a systems concept. Ways of building models of human activity systems were developed. Then it was realized that there can never be a single account of purposeful activity, because one observer's terrorism is another's freedom fighting. Models of purposeful activity could only be built on the basis of a declared *Weltanschauung*. This meant that such models were never models of real-world action; they were models *relevant to* discourse and argument about real-world action; they were epistemological devices that could be used in such discourse and debate; they were best thought of as *holons*, using Koestler's (1967) useful neologism, which could structure debate about different ways of seeing the situation. This led to the third crucial idea, that the problem-solving process that was emerging would inevitably consist of a learning cycle in which models of human activity systems could be used to structure a debate about change. The structure was provided by carrying out an organized comparison between models and perceived real situations in which accommodations between conflicting perspectives could be sought, enabling action to be taken that was both arguably desirable—in terms of the comparisons between models and perceived situation—and culturally feasible for a particular group of people in a particular situation with its own particular history. (The fourth crucial idea, not relevant here, was the realization that models of human activity systems could be used to explore issues concerning what information systems would best be created to support real-world action—which took SSM into the field of information systems and information strategy.)

Given these considerations, SSM emerged as the process summarized in Figure 4. This is a picture of a *learning system* in which the appreciative settings of people in a problem situation—and the standards according to which they make judgments—are teased out and debated. Finally, the influence of Vickers on those who developed SSM means that the action to improve the problem situation is always thought about in terms of managing relationships—of which the simple case of seeking a defined goal is the occasional special case.

CONCLUSION: THE RELEVANCE OF APPRECIATIVE SYSTEMS THEORY AND SSM TO MODERN MANAGEMENT

It is not difficult to envisage the situations in both industry and the public sector in which the thinking about problems and problem solving would be significantly helped by the models underpinned by hard systems thinking, namely the models that see organizations as coordinated functional task systems seeking to achieve declared goals and that see the task of management as decision making in support of goal seeking. These models would be useful in

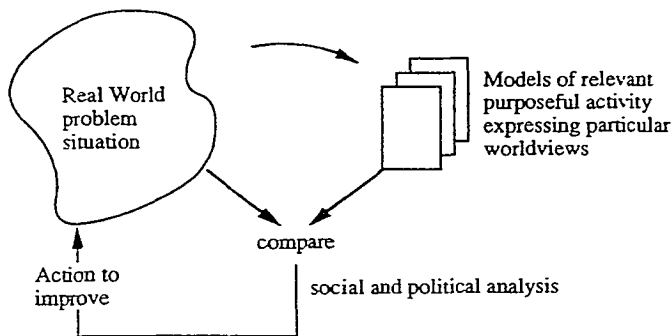


Figure 4: Soft Systems Methodology as a Learning System
 SOURCE: Checkland and Scholes (1990).

situations in which goals and measures of performance were clear-cut, communications between people were limited and prescribed, and in which the people in question were deferential toward the authority that laid down the goals and the ways in which they were to be achieved. But this image has never accurately described life in most organizations as most people experience it, and it has become less and less true since the end of the Second World War. Since that time the trends have been toward much increased capacity for communication, greater complexity of goals as economic interdependence has increased, much reduced deference toward authority of any kind, and the dismantling of monolithic institutionalized power structures. The dethronement of the mainframe computer by the now ubiquitous personal computer is at once both a metaphor for these changes and one of the catalysts for their occurrence.

In such a situation richer models of organization and management will be helpful, and it has been argued that those based on Vickers's appreciative systems theory and SSM have a role to play here. More important, they do not replace the older models but rather subsume and enhance them. In SSM, focusing on a unitary goal is the occasional special case of debating multiple perceptions and proceeding on the basis of *accommodations* between different interests. For Vickers, managing relationships is the general case of human action, the pursuit of a goal the occasional special case.

Vickers himself has usefully differentiated his stance from that of Simon in remarks that relate to the latter's *Administrative Behaviour* (Simon, 1957):

The most interesting differences between the classic analyses of this book and my own seem to be the following:

(1) I adopt a more explicitly dynamic conceptual model of an organisation and of the relations, internal and external, of which it consists, a model which applies equally to all its constituent sub-systems and to the larger systems of which it is itself a part.

(2) This model enables me to represent its "policy makers" as regulators, setting and resetting courses or standards, rather than objectives, and thus in my view to simplify some of the difficulties inherent in descriptions in terms of "means" and "ends."

(3) I lay more emphasis on the necessary mutual inconsistency of the norms seeking realisation in *every* deliberation and at *every* level of organisation and hence on the ubiquitous interaction of priority, value and cost.

(4) In my psychological analysis linking judgments of fact and value by the concept of appreciation, I stress the importance of the underlying appreciative *system* in determining how situations will be seen and valued. I therefore reject "weighing" (an energy concept) as an adequate description of the way criteria are compared and insist on the reality of a prior and equally important process of "matching" (an information concept).

(5) I am particularly concerned with the reciprocal process by which the setting of the appreciative system is itself changed by every exercise of appreciative judgment. (Vickers, 1965, p. 22)

As an example of the relevance of SSM to current problems of managing complexity, we offer recent work done within the National Health Service (NHS) in the United Kingdom. (Some of this is described in Checkland & Holwell, 1993; Checkland & Poulter, 1994; and Checkland & Scholes, 1990, chap. 4.)

In recent years the NHS has been subjected to several waves of government-imposed change. First there was the imposition of a system of accountable management, replacing the previous consensus management of teams of professionals. This had hardly settled down before it was replaced by an internal quasi-market. In this development the old district health authorities (into which the previous change had introduced district general managers) became purchasers of health care for a defined population, whereas hospitals and some general practitioners became providers of health care, the two being linked by contracts (although not legally binding ones) for particular services at a negotiated price. All these changes have entailed a considerable shift in appreciative settings for health professionals, and the NHS has been experiencing a period of considerable turmoil.

In the study described in Checkland and Scholes (1990), the problem was addressed of how a Department of Community Medicine in what was then a district health authority could evaluate its performance. Clearly the evaluation standards would depend completely on this department's image of itself and its role within the district. This is not a casual consideration, because concepts of community medicine range from *providing epidemiological data* to *managing the delivery of health care*. In this work, SSM-type models of purposeful activity relating to concepts of community medicine were built, with participation of members of the department, and eventually an evaluation methodology was developed. This was based on a structured set of questions derived from models that members of the department felt expressed their shared appreciative settings with regard to their image of the role of community medicine, which in their case was a very proactive interventionist one.

More recently, much work has been done in NHS hospitals and purchasing authorities as they assimilate and adapt to the purchaser-provider split (Checkland & Holwell, 1993). The new appreciative settings have been explored with participants via models of notional systems to enact the purchaser and provider roles. These have served to structure coherent debate concerning the requirements of the new roles.

In a recent study in a large teaching hospital, the work was part of a project to re-create an information strategy for the hospital suitable to cope with the new arrangements (Checkland & Poulter, 1994). In this work half a dozen teams of hospital workers representing the different professions were set up; members included clinicians, nurses, professionals from the finance and estates offices, and so on. Over a period of about 6 months, with a plenary meeting of team leaders every month, the teams discussed their activity and its contribution to meeting the requirements of the contracts for providing particular health care services that the hospital would in future negotiate with purchasers. Activity models were built and then used to structure analysis of required information support. This was related to existing information systems, and the information gaps identified helped in the formulation of the new information strategy.

One incident that occurred during this process may be recounted. It illustrates, in microcosm, the change of appreciative settings that can occur in the process of using SSM. It concerns a working group made up of nurses in the teaching hospital, led by a senior nurse. The group was building activity models relevant to providing nursing care, before using them to examine required information support.

Within SSM, when would-be relevant activity models are built, careful concise accounts of them as transformation processes are formulated (so-called Root Definitions). Various questions are asked in clarifying these definitions, one of which is "If this notional system were to exist, who would be its victims or beneficiaries?" Nurses asking this question naturally wish to answer, "The patients." That is what their whole ethos, education, and professionalism tell them. That illustrates why they are in the profession. It was therefore something of a shock to this group—brought to their attention by the structured requirements of the SSM process—to realize in discussion that under the new arrangements the *technically* correct answer is nearer to being "The hospital contracts manager." This is because, under the so-called internal market, each contract for a health care service that involves nursing care ought technically to include the cost of providing a certain level (and quality) of nursing care. The nurses' task is then to provide what the contract calls for. Beyond this, of course, there is a theory according to which the interests of patients will, in fact, best be met by the new purchaser-provider contracts.

But it is not easy for nurses to accept this. The senior nurse who described this incident at one of the plenary discussions said that this question, and the issue it exposed, occupied the team for much of one of their meetings. It gave her insight into the NHS changes and helped her to understand her own

misgivings about a supposed internal market in health care. Geoffrey Vickers would have appreciated this story.

Given our self-consciousness and the degree of mental autonomy that we seem to possess as human beings, that part of our thinking that is beyond the unreflecting stream-of-consciousness involvement in everyday life can itself be thought about. This can be done by examining the mental models that we use to make sense of our worlds. It is entirely plausible that our perceptions will be colored by those mental models. And it follows that they need both to be better than primitive and to change as our human and social world changes.

It has been argued here that the models of organization and management that have been useful since the 1950s need to be enriched. It has then been argued that appreciative systems theory and SSM can help to provide such enrichment. They do not replace the earlier functionalist and goal-seeking models: They enclose and enhance them in ways more appropriate to institutional life at the end of the century.

REFERENCES

- Ackoff, R. L. (1957) Towards a behavioural theory of communication. In W. Buckley (Ed.), *Modern systems research for the behavioural scientist* (pp. 209-218). Chicago, IL: Aldine.
- Avison, D. E., & Wood-Harper, A. T. (1990) *Multiview: An exploration in information systems development*. Oxford: Blackwell.
- Berger, P., & Luckmann, T. (1966). *The social construction of reality*. Harmondsworth: Penguin.
- Checkland, P. (1981). *Systems thinking, systems practice*. Chichester: Wiley.
- Checkland, P. (1983). OR and the systems movement. *Journal of the Operational Research Society*, 34, 661-675.
- Checkland, P. (1985a) Achieving desirable and feasible change. An application of soft systems methodology. *Journal of the Operational Research Society*, 36, 821-831.
- Checkland, P. (1985b). From optimizing to learning: A development of systems thinking for the 1990s. *Journal of the Operational Research Society*, 36, 757-767.
- Checkland, P. (1994) Conventional wisdom and conventional ignorance. The revolution organization theory missed. *Organization*, 1(1), 29-34.
- Checkland, P., & Casar, A. (1986). Vickers' concept of an appreciative system: A systemic account. *Journal of Applied Systems Analysis*, 13, 3-17.
- Checkland, P., & Haynes, M. G. (1994). Varieties of systems thinking: The case of soft systems methodology. *System Dynamics Review*, 10, 189-197.
- Checkland, P., & Holwell, S. (1993). Information management and organizational processes: An approach through soft systems methodology. *Journal of Information Systems*, 3, 3-16.
- Checkland, P., & Poulter, J. (1994). *Application of soft systems methodology to the production of a hospital information and systems strategy*. United Kingdom: HISS Central Team of the NHS Management Executive.
- Checkland, P., & Scholes, J. (1990). *Soft systems methodology in action*. Chichester: Wiley.
- Davies, L., & Ledington, P. (1991). *Information in action: Soft systems methodology*. London: Macmillan.
- Donaldson, L. (1985). *In defence of organization theory*. Cambridge: Cambridge University Press.
- Hicks, M. J. (1991). *Problem solving in business and management*. London: Chapman & Hall.
- Khandwalla, P. N. (1979). *The design of organizations*. New York: Harcourt Brace.
- Koestler, A. (1967). *The ghost in the machine*. London: Hutchinson.

- Lawrence, P. R., & Lorsch, J. W (1967). *Organization and environment* Cambridge, MA Harvard University Press.
- March, J. G , & Simon, H. A. (1958) *Organizations* New York. Wiley
- Maturana, H R , & Varela, F J. (1980). *Autopoiesis and cognition* Dordrecht Reidel
- Newall, A , & Simon, H. A (1972) *Human problem solving*. Englewood Cliffs, NJ. Prentice-Hall
- Patching, D. (1990) *Practical soft systems analysis* London Pitman
- Pugh, D. S , & Hickson, D. J (1976) *Organization structure in its context* Farnborough Saxon House.
- Reed, M I. (1985) *Redirections in organisational analysis* London: Tavistock
- Schutz, A. (1967). *The phenomenology of the social world* Evanston, IL Northwestern University.
- Silverman, D. (1970). *The theory of organizations* London: Heinemann
- Simon, H A (1957). *Administrative behaviour* (2nd ed). New York Macmillan
- Simon, H. A. (1960). *The new science of management decision* New York Harper & Row.
- Tonnies, F. (1955). *Community and association* [*Gemeinschaft und Gesellschaft*] (C P. Loomis, Trans). London: Routledge & Kegan Paul (Original work published 1887)
- Varela, F J (1984) Two principles of self-organization. In H Ulrich & G J. Probst (Eds), *Self-organisation and management of social systems* (pp 25-32) Berlin. Springer-Verlag
- Vickers, G. (1965) *The art of judgment*. London Chapman & Hall.
- Waring, A (1989) *Systems methods for managers* Oxford Blackwell.
- Wilson, B. (1984) *Systems Concepts, methodologies and applications* Chuchester. Wiley
- Woodward, J (1965) *Industrial organization Theory and practice*. London Oxford University Press.
- Zannetos, Z S. (1984) Decision sciences and management expectations. In J P. Brans (Ed), *Operational research '84* (pp 69-76) Amsterdam North Holland