

KNOWLEDGE AND THE THEORY OF ORGANIZATIONS: ORGANIZATIONS AS ACTIVITY SYSTEMS AND THE REFRAMING OF MANAGEMENT*

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ABSTRACT

Recent developments in the theory of knowing and doing contrast with conventional rational-cognitive assumptions about management and organization. This, and the emphasis that is currently being placed on the importance of esoteric knowledge for business success, suggests that a review of the relationship between knowledge, organization and management is timely. Activity theory offers a way of synthesizing and developing relevant notions. The approach has its origins in Russian psychology which endeavoured to avoid the dichotomies between thought and action and between individuals and society which have characterized Western theory. Activity theory examines the nature of practical activities, their social origins, and the nature of the 'activity systems' within which people collaborate. Modifications to Engestrom's contemporary presentation of the approach are suggested, and a theory of organizations as activity systems is offered. The theory reframes management by modelling the recurrent and embedded nature of human activities, by revealing the tentative nature of knowledge and its action orientation, and by highlighting the opportunities for individual and collective development that engagement and dilemma can provide. The article concludes by reviewing implications for the management of knowledge work, organizational capabilities and organizational learning.

INTRODUCTION: THE THEORY OF KNOWLEDGE AND THE RHETORIC OF MANAGEMENT

Recent Developments in the Theory of Knowledge

In recent years major reviews have occurred of the nature of truth and knowledge, the relationship between rationality and action, and the links between individual thought and collective beliefs. Contributions have been made from a variety of sources, including the sociology of knowledge, discourse analysis, organization behaviour, studies of the social impact of advanced technologies, theories of learning, institutional theory, and philosophy. Using Ryle's (1949) terminology, collectively such work has contrib-

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buted to a series of developments in both the theory of 'knowing that' and the theory of 'knowing how'.

It has been suggested that knowledge is:

- socially constructed (Berger and Luckmann, 1966)
- often tacit (Polanyi, 1967)
- a function of the play of other meanings (Derrida, 1978)
- enacted (Weick, 1979)
- distributed (Hutchins, 1983)
- situated (Suchman, 1987)
- material, as well as mental and social (Latour, 1987)
- resilient, but provisional and developing (Unger, 1987)
- public and rhetorical (Vattimo, 1988), and
- acquired through participation within communities of practice (Lave and Wenger, 1991).

Such approaches variously emphasize the complexity of tacit skills and the significance of 'doing' as well as of 'deciding', the importance of culturally provided categories for individual thought, the social processes through which concepts and actions are negotiated, and the creative ways in which people use even the most abstract plans and representations. The full implications of such points remain to be fully worked out and different writers emphasize different aspects of them. Nonetheless, overall, the implications are clear: the conventional rational-cognitive approach to understanding is breaking down.

This is a highly significant development in a culture where abstract, rational, and analytic thinking has been highly prized. People, it has been commonly assumed, possess objective knowledge and can be expected to act in accordance with their considered judgements. Thought is a personal matter which takes place within individuals' heads; decisions on complicated issues will be well thought through and logical; plans are central to purposive action. Compare this to an approach which blurs the distinctions between the psychological and social, between thought and action and between theory and practice, and which emphasizes the limits of articulation, the cultural basis of knowledge, its indeterminacy, and the active nature of the processes through which knowledge is managed.

Pressures Towards Rational-Cognitivism in Organizations

The social sciences have, of course, been influential in encouraging a general shift away from Cartesian notions of the human being, and organization studies includes a range of work that has been influenced by, or has contributed to, this trend. Work that has exposed the limits of rationality is clearly in this tradition (see, for example, Schon's 1987 discussion of the inadequacies of positivist epistemologies of professional practice, and Starbuck's 1985 review of how people do not necessarily think before acting and of how organizations, too, may 'blunder in the dark'). So also are the many attempts that have been made, following Silverman's pioneering 1970 text, to apply social constructionist and interactionist approaches to organization theory. Yet, despite such work, the rhetoric of traditional rationalism has retained

its attractions. Objectivist images of professional knowledge retain a powerful mystique. In the mid-1980s simplistic suggestions that an organization's culture is a variable that can be manipulated resonated with the public mood (Turner, 1986). More recently, it has become fashionable to describe people as 'resources' and the suggestion that that 'human resource experts' can 'apply' social science knowledge in their management have achieved heroic appeal (Guest, 1990).

Part of the explanation for the continuing vitality of rational-cognitivism in management can be sought from an analysis of the pressures within organizations themselves. Staw (1980) notes that while most theories of individual and organizational behaviour assume that behaviour is logical, goal seeking and self-interested it is not difficult to show that neither individuals or organizations are likely to act in such a way very often. Yet most organizations, he points out, are *intendedly* rational and pressures to act in a prospectively rational manner are strong in areas where performance is visible and easily monitored. Moreover, people are expected also to be able to justify their *past* actions in acceptable terms; indeed, goal-seeking prospective rationality at a senior level is likely to be translated into self-protective, retrospective rationality elsewhere. According to Staw, pressures for rational explanations of behaviour pervade organizations.

At a broader level, pressures towards rationalism in organizations have been analysed from a post-modern perspective by Cooper and Burrell (1988) and by Gergen (1992). Vattimo's (1988) distinction between 'strong' and 'weak' thought encapsulates a number of the points they make. Vattimo argues that the Western intellectual tradition has been preoccupied with the problem of truth rather than with the problem of being. Science (he suggests) and modernist approaches to management (his arguments imply) can be understood as having achieved one of the deepest desires of such metaphysics, namely, the rational domination of the world of objects. Like other post-modernist thinkers however, Vattimo argues that this is an illusion. People can only know the world of objects indirectly from within a linguistic tradition; knowledge of the world can, therefore, be no more and no less than interpretation. Vattimo points out, however, that systems of reason simultaneously act as systems of persuasion seeking, as they do, to exclude alternative perspectives. Vattimo's intention is to collapse distinctions sustained within modernism between, for example, rationalism versus irrationalism, technology versus aesthetics, or information versus fiction. He contrasts the 'strong' thought of conventional objectivism, and its claims to truth, with the 'weak' thought he favours, with its emphasis on imagery and interpretation.

Vattimo's project for a hermeneutic ontology in philosophy resonates with recent developments in social theory. Unger (1987) has developed a theory which describes the 'false necessity' of social life. Unger points out that the social arrangements that people know become deeply entrenched in their imaginations. Familiar bases of authority, legal dogmas, role systems, technologies and styles of organizing become accepted as normal and inevitable; the pragmatism of prevailing institutional and imaginative structures obscures the political nature of their origins and, through the roles they enact, people come to think and behave as if their social worlds have coherence and

inevitability. In Vattimo's terminology, Unger's analysis of false necessity suggests that people have learned to interpret their societies through the use of 'strong' thought. Like Vattimo, Unger believes that this is both misleading and constraining. Social theory can serve an emancipatory function by demonstrating the arbitrary origins of social systems and by helping people rethink and rework their behavioural routines and normative attributions.

In this article an endeavour is made to synthesise such outlooks with developments in the theory of knowledge such as those sketched in at the start of the article. The aim is to provide an account of the *hermeneutic foundations of organizations*. Notions of collective knowing and individual action are combined in a model of organizations as activity systems.

Organizational Hermeneutics and Practical Management

Recent developments have highlighted the need to articulate alternatives to rational-cognitivism in management; the task is not simply an intellectual challenge but a practical one. This has been starkly revealed, indeed, by the difficulties that have emerged from managing the new generation of information and communication technologies using conventional approaches. Suchman (1987) discussed the inadequacy of rational-cognitivism in interface design exploring the importance of the nature of human communication and improvisation processes; Zuboff (1988) showed how the abstract, 'intellective' skills that are needed to operate advanced machinery can displace embodied, action-centred and interactive skills with unexpected consequences for the individual and the organization; and Thomas (1992) has analysed the relative merits of rational, garbage can and political models for guiding the design of new technological systems. In a similar vein, analyses of industrial catastrophes have revealed the inherent flaws of 'tightly coupled' technological systems (Perrow, 1984, Weick, 1988) and have highlighted the advantages of building systems which recognize the need for skilful human interventions. Such systems are unlikely to be built, however, unless the nature of and conditions for skilful human interventions becomes better understood. A key conclusion to be drawn from analysis of the continuing pressures towards rational-cognitivism in organizations is that managers may find the emerging alternative sketched in at the start of this article to be both unfamiliar and perplexing. The approach developed below is intended to help with such difficulties and to facilitate an orientation to management that is based on contemporary theories of knowing and doing.

Indeed, the current interest that is being shown in the relationship between knowledge and economic success underlines the importance of this project. Suggestions that specialized knowledge has become an essential ingredient for business success are becoming commonplace. Reich (1991) has presented such a thesis: the distinction between goods and services is breaking down in the global economy, he argues, large profits can only be made when organizations are able to provide services specialized for their customers' needs. Reich emphasizes the importance of knowledge workers ('symbolic analysts') to this process and points to the economic value of high levels of education. Others have approached such matters in a different way, however. Within the literature on business strategy emphasis is being placed on *organizational*

competency (see Prahalad and Hamel, 1990), or the capacities *organizations* have to learn (Cohen and Levinthal, 1990). Badaracco (1991) has added a new dimension to such perspectives in his account of how organizations in fast-moving world markets have linked in partnerships specifically to enhance their 'embedded' competencies.

The following discussion provides a framework which integrates such approaches. It defines activity as a social phenomenon, and reinterprets the concepts of individual knowledge, action and skill within a broader theory of organizational knowledge, competency, and collective development. The theory reframes matters of central concern to management, such as expertise, co-operation, technology, planning and learning.

ACTIVITY THEORY

The Origins of Activity Theory

The analysis presented here is derived from activity theory, an approach developed in Russian psychology which, quite deliberately, set out to develop an orientation independent from Western thought. The central concerns of activity theory are the relationships between material action, mind and society; the approach explores links between thought, behaviour, individual actions and collective practices. The alternative to rational-cognitivism that Soviet activity theory represents cannot, it will be suggested, be accepted in its entirety. However, the insights it provides into activity, the role it ascribes to active participation, and the significance it attributes to incoherency and dilemma provide the basis for a framework which synthesizes recent developments in social constructionism.

The foundations of the activity theory approach were laid by the Russian Lev Vygotsky, who worked in the years immediately following the Bolshevik revolution. Vygotsky's writings span a remarkable range, including art, literature and semiotics, yet by the time of his death in 1934 at the age of 37 he had, almost single-handedly, laid the foundations for a psychology of culture and consciousness. Initially Vygotsky was an enthusiastic supporter of the revolution; later, however, his work was to be banned and only now is it becoming possible to assess his full stature (see Kozulin, 1990). What is clear is that Vygotsky recognized the importance of concepts which were only to begin appearing in Western social science some 40 years later. (Writing in 1978 about how systems can acquire mental process, Gregory Bateson emphasized the need to distinguish classes of actions in terms of the contexts people consider appropriate for them; this is a key feature of the notion of activity as developed in Russian psychology. Also, in the 1970s a number of similar notions to 'activity' began to appear in the social science literature, especially in social interactionism and anthropology: these included Goffman's 'frames', Schank and Abelson's 'scripts', Strauss's 'social worlds' and Bourdieu's 'habitus').

Marx's conception of human nature had provided Vygotsky with his starting point. Marx believed it makes no sense to say that human nature is fixed. Rather, he suggested, people continually make themselves through

their productive activity. 'As individuals express their life, so they are'. Marx's notion of productive activity was, of course, very wide; it included both material products and mental ideas. His emphasis was that different societies in different epochs provide varying opportunities and resources for the activities of their members, this is how human nature comes to be expressed differently. According to this, behaviour can best be understood as the history of behaviour: as Marx would have it, productive activity and the human nature it expresses is an historically developing process.

Vygotsky and his followers (including Luria, Leont'ev, Davydov and Zinchenko) developed this approach, exploring the emergence of psychological processes, and developing the suggestion that higher mental processes have their origin in social processes. Of particular interest are the opportunities that the Russians recognized in the concept of *activity*. As developed in activity theory, 'activity' is a more general concept than either 'operation' or 'action' and is more specific than either 'society' or 'culture', yet it implies all of these. For the Russian theorists, interested as they were in the relationship between mind and culture, activity promised the smallest unit of analysis possible which preserves both the link between mind and society and the coherence of different actions and movements. The concept draws attention to relationships between motives and the contexts of action, and invites enquiry into the processes through which people enact the activities in which they participate. The link this general approach promises with contemporary social constructionism is clear: the settings for different activities are not determined by objective, physical features but are provided by those who engage in them. 'Work', 'play', 'war', 'parenting' or 'study', for example, are socio-cultural concepts imposed on different situations by the participants themselves.

Engestrom's Analysis of Activity Systems and their Incoherencies

Wertsch (1981) has summarized the main elements of the activity approach as it has been developed in Soviet psychology; a contemporary version of the theory which incorporates all such features has been provided by the Finnish scholar Engestrom (1987). In the Vygotsky tradition, Engestrom emphasizes how analysis of human activity must develop from the study of material actions and communication processes. 'Activity systems' is the term he uses to describe the context of actions. Engestrom's model displays the essentials of such contexts, locating human agents, their objectives, and the tools and language they use, within their broader social and structural settings.

Engestrom contrasts the general structure of animal activity (figure 1) with human activity (figure 2). Human activity systems are distinguished by the emergence of tools and concepts which mediate the interactions between the individual and his or her context; by the appearance of traditions, rituals and rules which mediate the relationship between the individual and her community; and by a simultaneous emergence of a division of labour that mediates the relationship between the community and the actions of its members. The goals or objectives which provide the system with its coherence is partly predefined for those involved (through culture, division of roles, and

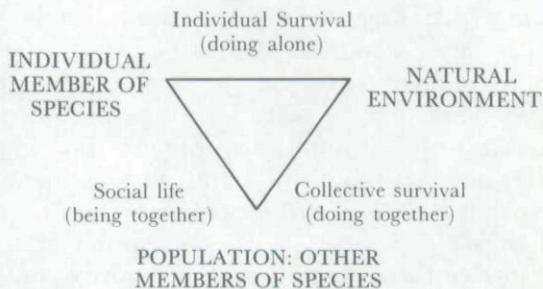


Figure 1. Engestrom's model of the structure of the animal form of activity

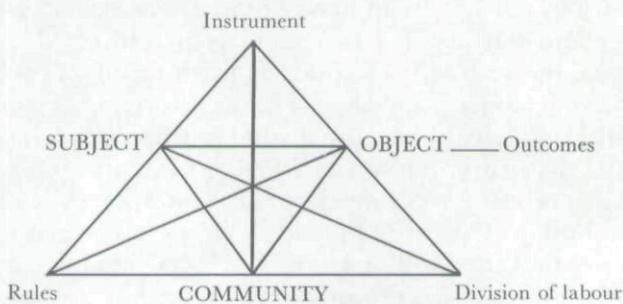


Figure 2. Engestrom's model of the structure of human activity

physical artefacts); in part it is recreated and modified by the actions of those involved.

The notion of mediation is central to Engestrom's theory. Marx had pointed the way through his emphasis on 'man the tool-maker': man creates tools which he interposes between himself and his labour. Vygotsky adopted this formulation and extended it to the phenomenon of language: man creates a sign system which, in the first place, he uses to co-ordinate his actions with those of others and which, later, he uses to regulate himself. This shift from interpsychological uses of language to intrapsychological uses provided the essential link through which activity theorists could begin to explore the mediated relationships between culture and mental functioning. 'Mediation' in this sense should not be understood to imply that the development of tools or language simply made it easier to do things that were somehow going to get done anyway. On the contrary, the notion points to the occurrence of qualitatively new events, events that would not otherwise have been possible. In Engestrom's model of activity, the three processes of mediation of *tools* between subject and object, of *rules* between community and subject, and of the *division of labour* between community and object, are presented as transforming the nature of the contexts within which people act.

The idea of mediatory processes appears elsewhere, particularly in theories of language and semiotics, and is not peculiar to activity theory. Where activity theory is unusual, however, is in the emphasis it places on the suggestion that symbol-mediated activity should not be studied as if it were

'for the mind alone'. As Engestrom emphasizes, people do not only, nor do they primarily just *think*. Above all, he insists, people *act practically*, moulding their material environments, and they do this not alone but in co-operation with others. (Extended to a broader level, the argument would be that it would be a mistake to try to analyse an organization merely in terms of its culture: organizations 'act practically' and their cultures cannot sensibly be divorced from social, technical and economic factors.)

Also central to activity theory is its conception of social learning. The approach suggests that the ambiguities, uncertainties, and contradictions that are such a characteristic of the human condition can provide key opportunities for individual and collective development.

Processes assumed here can be introduced through discussion of how people first learn to participate in new activities. Rational-cognitivism would encourage the view that people's behaviour is goal directed, calculative and pre-planned. As the example of children learning to participate in adult practices clearly demonstrates, however, the process of 'joining in' is not merely a question of logically executing what has been explained: principally, it is a process of discovery. As Wertsch (1985a) explains, finding themselves in new social situations novices need to make interpretations for themselves about the assumptions that are implicitly guiding other peoples' behaviour. This is not to say that they will be left to sink or swim alone, communication between experts and novices certainly does occur, but novices need to piece together for themselves the background knowledge that makes sense of particular items of information. Wertsch borrows the term 'prolepsis' from the theory of communication to describe this process. Social learning is a creative achievement, therefore, which involves a degree of personal investment; it can only be achieved by active participation. The suggestion is that *learning occurs as people do more than they yet know how to do*. (Compare this account to early social constructionist descriptions of socialization. Berger and Luckmann, 1966, suggested that new participants in a social activity experience a change in perception of their own behaviour from 'here I go again' to 'here we go again' to 'this is the way things are done'. Activity theory suggests that the process occurs in a different order: *i.e.* from 'here we go again' to 'this is the way things are done' to 'here I go again'.)

Engestrom distinguishes between gradual individual learning, rapid individual learning and the shared or collective learning of a community. Important occasions for such processes arise, he argues, from the ambiguities and conflicts that can be found within and between activity systems themselves. First, *within* each of the elements depicted in Engestrom's model there is a potential dialectic:

- (a). Contrasting conceptions ('ideal types') of different activities and activity systems can be identified. Compare, for example, the traditional conception of research as an intellectual activity, with research as it might be practiced by people encouraged to compete within a commercial environment: the former assumes a loose, informal network of researchers in open communication and debate who are principally concerned with developments in theory and method; the latter suggests formal, closed, competitive groups,

working under time pressures and concerned with bounded problems and marketable solutions.

(b). Contrasting conceptions of activity will coexist within the same activity system. For example, co-operating occupational groups are likely to hold different views of their work (Engestrom, 1990a, illustrates such differences by comparing the varying conceptions of theatre held by directors, dramatists, actors and drama teachers). Especially important however is the point that, with the passage of time, *new or revised conceptions of activity are likely to emerge within any activity system, yet traces of earlier outlooks can be expected to remain*. An example is provided by Engestrom's (1989, 1990a) documentation of the variety of conceptions that doctors can have of their work: doctors may conceive of their work in biomedical terms (the treatment of somatic disease), in administrative-economic terms (the consumption of health care services) in psychiatric terms (the patient as a psychosomatic whole), in socio-medical terms (involving the patient's social life situation), or in system-interactive terms (the patient as collaborator). The origins of each of these approaches can be traced to a different historical period yet, as Engestrom's research showed, doctors working in the same medical practice may be unknowingly enacting different concepts of health care.

Second, a potential dialectic arises from the interactions *between* the elements of an activity system:

(c). Tensions between the elements of an activity system will be clearly in evidence when attempts are made rapidly to change predominant views of the object of activity. Engestrom's analysis of a medical practice records how attempts to refocus its aims in terms of psychosomatic and socio-medical problems was hampered by the existing structure of its activity system: the division of labour between different health care professionals proved inappropriate; the way patients were (randomly) allocated to doctors in the Finnish health system proved antithetical; also problematical, he notes, were the biomedical concepts the doctors were accustomed to using. It should not, however, be assumed that tensions within activity systems are peculiar to systems in times of rapid change alone: they will be particularly acute and visible in such circumstances but with the passage of time *internal anomalies and contradictions in activity systems can become an everyday, taken-for-granted feature of life within them*.

(d). Tensions can be expected between related activity systems. Activity systems do not exist in isolation one from another; the outputs of one system provide the inputs to another. (For example, one output of educational activity is the production of potential entrants to work activity; one output of scientific activity may be the provision of new workplace technologies; one output of academic activity in a management school may be recipes for effective organizational structuring.) Another source of potential conflict, therefore, arises in the relationships between different activity systems.

Finally Engestrom (1987) speculates about the learning that may result from the tensions in activity systems. Adopting Vygotsky's terminology he

suggests that the incoherencies, dilemmas and double-binds which he maintains can be identified in an activity system mark out its 'zone of proximal development', that is, they both provide the motive for and indicate the capacity present within the system for collective learning. In this Engestrom is following the tradition of 'genetic explanation' in Marxist thought, assuming that an understanding of the internal dynamics and contradictions of the smallest relevant unit of analysis will provide the key to understanding the laws which govern social change. Engestrom maintains that collective learning about activities will follow an expansive course: from attention to the internal contradictions in a particular activity system to a broader concern with the implications for change for other systems. (First, he suggests, it is necessary to recognize the contradictions that exist within the separate elements of an activity system; second, to become aware of inconsistencies between such elements; third, to search for revised objects for activity; fourth, to address conflicts between the old system and the demands of the new; finally, to consider emerging conflicts between the new activity system and neighbouring system.)

Engestrom emphasizes the potential value of his model of activity systems (figure 2) in helping people to picture the dynamics of their situations: in activity theory terms, he is suggesting that the model can act as a new instrument of mediation. Amongst the examples he has provided of how the model may be used to map contradictions within an activity system are the studies already mentioned of a medical practice in Finland, his analysis of the work of a group of Finnish cleaners (1986), and of judicial work in both Finland and California (1990b). As this work indicates, the mapping of such contradictions requires careful attention to detail involving, on the one hand, study of the social and theoretical history of the relevant activities and, on the other, case work, interviewing, observation and discourse analysis.

Reinterpreting the Incoherencies of Human Activity

Before discussing the insights that activity theory offers to organization theory it is necessary to explore one key criticism of the approach. This concerns the way in which activity theory interprets the incoherencies, inconsistencies and conflicts within human activity. Problems here reflect certain, broader, limitations in Soviet scholarship. Wertsch (1985b) suggests that activity theory is not based on the specifics of Marx's social theory but on the philosophical and methodological aspects of his approach. Yet it should not be surprising that Soviet psychologists interested in the relationship of mind and society were to focus on the common ground between Marx's method and Marx's social theory, that is, to speculate about how the contradictions of capitalism come to be reflected in individual and collective thought patterns.

As has already been emphasized, much of the interest in activity theory stems from the point that it is the product of a tradition which consciously set out to avoid the pitfalls of separating thought from action, individuals from collectivities, and so on that has typified the Western intellectual tradition. Nonetheless the Soviet tradition has problems of its own. Central to Marxism are (a) its huge scope and ambition (*i.e.* to explain societies past

and future); (b) its emphasis on a core explanatory device (*i.e.* all societies are characterized in terms of their mode of production), and (c) its search for deterministic causes (*i.e.* social evolution plays out the inherent contradictions of capitalism). Activity theory includes traces of all of these problem features:

(a). Proponents of activity theory (*e.g.* Davydov and Radzikovskii, 1985) held high ambitions for it, anticipating that it would provide the key to unlocking the relationship of culture and mind. It is now becoming clear (Kozulin, 1990), however, that the processes that mediate culture and thought do not necessarily coincide with the processes that mediate social structures and their reproduction. Activity analysis is best suited to the latter, more restricted, problem (*i.e.* to what Giddens, 1984, calls the process of structuration) than it is to the former (which is more likely to be addressed successfully by semiotics and the theory of communication).

(b). Engestrom explicitly states his belief (1987, pp.82–91) that the inherent contradictions of capitalism account for the endemic presence of dilemma in activity systems. Preparing to introduce his theory of 'the zone of proximal development' Engestrom quotes from Marx's *Capital* to blame the division of labour in capitalist societies and the commodification of activity that it produces for the existence of alternative conceptions of activities. Engestrom is, in other words, suggesting that the origins of *all* the instabilities in and between activity systems can be found to lie in the tensions between the 'use value' activities they have and the 'exchange value' they come to acquire. In marked contrast to this position, however, is the subtlety of Engestrom's own (1989, 1990a) analysis, mentioned above, of five very different conceptions of medical activity. Explanation of the differing interpretations of activities that can be found surely requires a multidimensional approach to accommodate the range of economic, historical, social, scientific, philosophical and cognitive factors associated with them.

(c). It is very noticeable that Engestrom's empirical studies of activity systems concentrate on documenting the elements of discord within them. These are original and important studies, and they demonstrate high levels of scholarship and empirical rigour. But they are also revealing in what they do *not* address. Engestrom concentrates on exploring the frictions within activity systems and in picturing these in his model of activity systems: in the terms of his theory, his primary concern is to demonstrate the value of his model of activity as a mediatory device (Engestrom, 1990, p.260), mapping and exposing contradictions which will initiate a process of self-awareness and social transformation. In my opinion the model pictures a number of complex relationships very well and in the next section of this article I offer a modified version of it for organizational analysis. Yet in his various reports Engestrom says virtually nothing about how the people whose activities he studied reacted to the analysis he produced of the inconsistencies in their activity systems, nor about what happened next, nor on what the emerging pattern of learning and debate suggested about the adequacy of the initial diagnosis. Beyond the occasional remark (*e.g.* 1989, p.18), that collective learning does not run smoothly the issue is not featured as a concern. For someone schooled in the Western 'action research' tradition this is very

surprising; but it does make sense in the context of Marxist activity theory. Although he does not use the term 'false consciousness' it is clear that Engestrom assumes the core problem is how to alert people to the incoherencies in their lives and so to trigger the expansive process of individual and social revelation he expects. For others who do not accept Engestrom's theory of the 'zone of proximal development', however, questions concerning the origins of incoherencies within activity systems, what sustains them, and the ways in which people may learn from them remain crucial.

In the introductory section of this article reference was made to Vattimo's analysis of the Western intellectual tradition. The observations just listed suggest that Vattimo's conclusions apply equally well to the Marxist tradition. Activity theory has its origins in 'strong' thought, preoccupied as it is with assumptions of objective truth. 'Strong' thought stifles curiosity. Although activity theory is distinctive in the way it identifies incoherencies as a feature of personal and social life it has assumed a very restricted explanation of the phenomenon; and although it is unusual also in its insistence that inconsistency is a major force for individual and collective development it has accepted an equally limited view of what such learning is and how it may occur.

My aim is, therefore, to develop an analysis of activities that is free from the difficulties inherent in the notion of false consciousness and the zone of proximal development which I have just outlined. A non-deterministic, social constructionist conception of incoherency and dilemma in activity systems will achieve this. Engestrom is correct, in my view, to focus on both pragmatic actions and communication processes. Some of the incoherencies in activity systems may well reflect tensions between use value and exchange value. However I would suggest that *the inconsistencies and incoherencies of activity systems are far more complex in origin and manifestation than the Soviet tradition has been able to acknowledge*.

Unger's (1987) social theory, mentioned earlier, provides an example of a much richer theoretical explanation of such processes than is possible within the Marxist tradition. Unger highlights the political origins of pragmatic activities, and he emphasizes how the complexities and inconsistencies of social life can only be appreciated by reference to the particular histories, politics, institutional structures, technologies, ideologies and expectancies of different communities. As I have emphasized elsewhere (Blackler, 1992), Unger's style of analysis points both to the variety of incoherencies that are inherent within contemporary societies and to the way in which awareness of them tends to be obscured by the pragmatism of prevailing social routines. Finally, it should be noted that the insistence of Vattimo and others that language is essentially interpretational points to the crucial role that it plays in channeling perceptions and debate. This point has been very well discussed by Gergen (1992), in his explanation of how the contrasting imagery of romantic, modernist and post-modernist forms of discourse encourages attention to very different sets of managerial problems.

ORGANIZATIONS AS ACTIVITY SYSTEMS AND THE REFRAMING OF MANAGEMENT

Integrating New Approaches to Knowledge

Divorced from Marx's theory of the contradictions of capitalism, activity theory offers a powerful package of ideas that serves to integrate social constructionist developments in the theory of knowledge. To summarize, key aspects are:

(1). *The concept of activity.* People do not just think, they act on the world and they do this collectively. 'Activity' is a highly appropriate concept for organization theory. It draws attention to the social origins of motives and helps to explain the overall coherency of different actions.

(2). *The nature of activity systems.* Mediating mechanisms, such as tools, language, social rules and the division of labour, transform the relationships between individuals, communities and shared endeavour. Such factors are interwoven in a complex web of mutual interactions.

(3). *Active participation.* Novices learn by participating in activities and activity systems. This is a creative, interpretative, process. Such learning is likely to be tacit rather than explicit. Collective learning occurs when communities construct new conceptions of their activities and develop new activity systems.

(4). *The significance of history.* Activities are socially and historically located. They evolve over time.

(5). *The prevalence of incoherence and dilemma.* Incoherence, inconsistency, conflict and dilemma are integral features of activity systems. They offer major opportunities for personal and collective learning.

Note how compatible these points are, both with developments in social constructionist approaches to knowledge and with many of the concerns of organization and management theory. As already noted, the concept of activity serves a similar function to concepts such as 'frame', 'script', 'social world' or 'habitus' that emerged in the social sciences in the 1970s. Moreover the features summarized here overlap with many of the points raised more recently by radical cognitivists that were touched on at the start of this article. They are consistent with suggestions, for example, that meaning is enacted, acquired through social participation, is negotiated, and is manifest in the doing as much as in the deciding. They are consistent also with the view that behaviour is characterized by improvisation and creativity rather than by detailed pre-planning, and that knowhow is not just a feature of individuals but is distributed within a community. Note too the distinctive slant they offer on such matters and its relevance to organization and management studies. Any preoccupation with linguistic analysis, which may perpetuate a divorce between knowledge and action, is avoided. Nor is the focus solely on actions which, by definition, are finite and discrete. Instead, *practical actions are located in a process which is recurrent, systemic and self organizing, rooted in history and reaching out to the future.* Moreover, Engestrom's approach provides a perspective on the complexity of relationships in which activities are embed-

ded, located as they are not only in forms of discourse but also in material action, technologies, rules and social structures. While the web of relationships that his model identifies suggests how activities can become entrenched and resistant to change, the approach is also distinctive in the way it identifies uncertainty, incoherency and dilemma both as everyday features of the human experience and as major sources of potential learning.

Modelling Organizations as Settings for Activity

Three changes need to be made to Engestrom's general model of the structure of human activity (figure 2) to represent organizations as settings for activity (figure 3). First, the overall coherency of the system depicted in Engestrom's general model is provided by an expectation that some level of agreement will exist in a community of practitioners on the object of their shared activity. In the case of formal organizations, however, it can be misleading to assume this. As Cyert and March (1963) and many commentators subsequently have discussed, complex organizations are likely to embrace a plurality of divergent interest groups who favour a range of goals and priorities. The effective functioning of an organization does not depend on people agreeing on why they are doing something; all that is required is that there is agreement on procedures for determining *what* should be done.

Nelson and Winter (1982) have developed this insight in their account of the nature of the capabilities of an organization. Central to their analysis is an analogy between individual skills and organizational behaviour. Individual skills (both sensorimotor and cognitive) are defined as 'a capacity for a smooth sequence of co-ordinated behaviour that is ordinarily effective

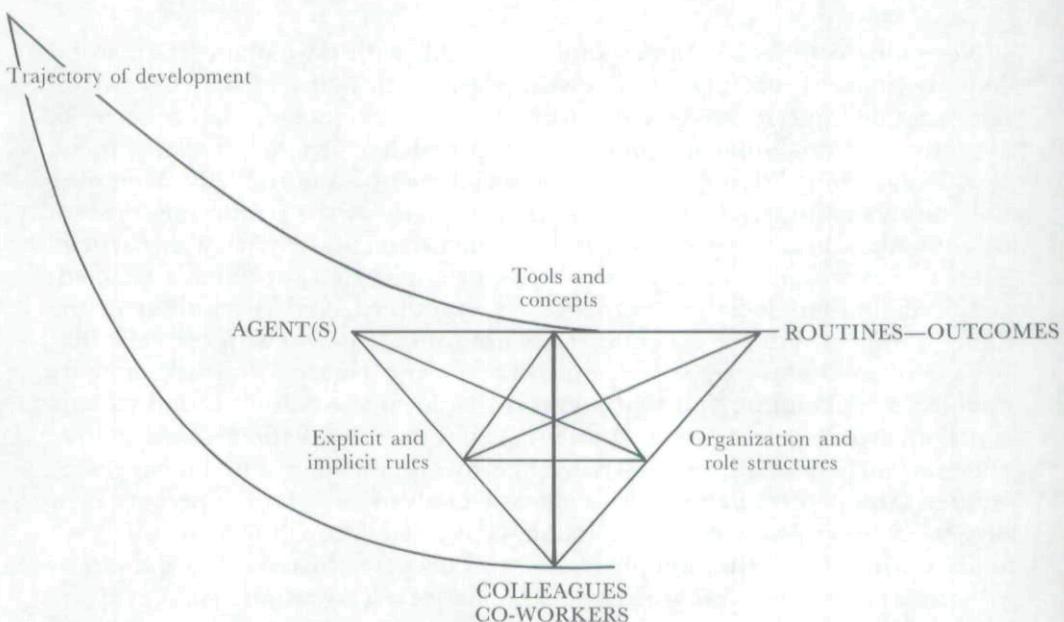


Figure 3. Organizations as activity systems

relative to its objectives, given the context in which it occurs'. At the organizational level the analogue for such co-ordinated behaviours is organizational routines, which Nelson and Winter define similarly in terms of repetitive patterns of behaviour. Just as the skilled behaviour of an individual is made up of particular sub-elements combined into a co-ordinated overall performance, impressive in its speed and accuracy, so too are the skills of an organization. Nelson and Winter maintain that organizational routines are programmatic, largely tacit, selected automatically, with conscious deliberation becoming confined to unusual developments or to matters of strategic importance. Such routines are, of course, more complex than the skills of an individual; in addition to physical and mental factors, interpersonal, socio-structural and technological factors are intertwined within them. The point is, however, that it is through such routines that co-operation, rather than conflict, is the norm in complex organizations.

In developing a model of organizations as activity systems I have chosen, therefore, to acknowledge the variety of conceptions of activities that may exist within them by depicting *routines* as the unifying mechanism of the overall system. Organizational routines function as inexplicit, fragile but nonetheless effective vehicles for truce between groups who have developed differing conceptions of their activities.

Second, organization theorists from Weber onwards have commented on the contrived nature of purposive organizations. Structural features may be imposed on organizations from outside. Close relationships may be cultivated between key structural features within an organization, binding task demarcations, rules, regulations, technologies, operating assumptions, power structures, and reward and status systems in a tightly-knit whole with an apparent life of its own. Accordingly, the primacy of the relationships pictured in Engestrom's model have been reconfigured in figure 3. In order to reflect the potential strength of relationships in modern organizations between instruments, rules and the division of labour (here interpreted as tools and concepts, explicit and implicit rules, and organization and role structures) the elements pictured at the apex of the outer triangle in Engestrom's general model have been located in close proximity to each other, at the apices of the inner triangle.

Finally, the emphasis that I have placed on developing a non-Marxist interpretation of the internal incoherencies of activity systems by locating them within their particular institutional and cultural circumstances suggests that the historical origins of organizations should be featured in the model. On figure 3 therefore (and adapting Hinings and Greenwood's 1988 notion of 'tracks of development') a time-based dimension has been added.

Figure 3 thus models organizations as activity systems and summarizes the points discussed in the preceding subsection. Organizational behaviour is located in its broader socio-historical context, and organizations are represented as mediated systems, involving active agents engaged in collective activities. Organizations include a plurality of purposes. Inconsistency may characterize relationships between the various components of an activity system. The model does not seek to explain behaviour solely in terms of logic or rational planning, nor does it merely seek to explain organizational

behaviour in terms of broad sociological theory. Rather, it pictures the dynamics of the tacit skills and the routines that feel natural to participants as they act practically, and communicate, interpret, improvise, negotiate, enact, re-enact, and learn.

Knowledge and the Theory of Organizations

Just as activity theory offers a synthesis of recent developments in the theory of knowledge, the theory of organizations as activity systems is useful for exploring the nature of knowledge work, organizational competencies, and organizational learning.

The approach illustrated below is distinctive compared with, for example, Lyles and Schwenk's (1992) more traditional cognitive psychological approach to analysing organizational knowledge. Yet all of the issues outlined here have been identified by other commentators. What the theory of organizations as activity systems does is *bring a unifying and distinctive framework to a range of issues that would otherwise appear only loosely related*. For example, the approach offers a framework for interpreting the following points:

– Zuboff (1988) analysed the changing nature of expertise. Her argument was that the new information and communication technologies are displacing established forms of expertise based on 'action centred' skills (these are sentient, action dependent and context dependent) or on the skills of 'acting with' (which involve sharing, communicating and problem solving). The new technologies place a very heavy emphasis on 'intellective' skills, requiring high levels of abstraction and inference, and a detailed knowledge of procedures.

– Prahalad and Hamel (1990) suggested that while, during the 1980s, top executives in manufacturing industry were judged on their abilities to streamline existing production systems, during the 1990s they will be judged on their abilities to cultivate their organization's 'core competencies'. The long-term competitive edge of a manufacturing firm lies, not in the particular products that it is currently producing, but in the distinctive combination of its underlying production skills and technologies. Henderson and Clark (1990) however, have distinguished between knowledge of specialist elements in an organization ('component knowledge') and knowledge about how such elements interact ('architectural knowledge'). Architectural knowledge is often implicit, submerged within an organization's taken-for-granted routines and, typically, is not easy to change. Managers tend to rely on oversimplified maps of the dynamics of their organizations.

– Badaracco (1991) distinguishes between 'migratory' knowledge (e.g. inventions that can be copied, individuals who may leave) and an organization's 'embedded' knowledge. Knowledge can be 'embedded' in tacit skills, established teamworking, organizational routines, broader professional and affiliative networks, and in geographical locations, he argues. New types of embedded knowledge are not easily acquired, but rapidly changing world markets demand that they should be. To develop their embedded knowledge base organizations may need to develop new forms of partnership with other organizations. Indeed, firms should be managed less as self-contained 'cita-

de's', Badaracco argues, and more like Renaissance Italian 'city states', forging complex, changing, networks of strategic alliances.

– In presenting Japanese business methods to a Western audience Itami (1987) emphasizes that general commitment to an organization's strategic purpose is needed if the organization is to take advantage of technological change. Nonetheless he suggests that the goals a leader sets for the organizations should be destabilizing. Organizations are inherently conservative, they should be 'shaken up'. Unknown problems, situations that people are not prepared for, and corporate strategies that work at the limits of consensus can, he suggests, be used to revitalise work activities and values.

In what follows, assumptions that would be expected from a rational-cognitive approach to management on issues such as these are compared to implications drawn from the theory of organizations as activity systems. Comments are offered on the nature of an individual's expertise, organizational expertise, organization-environment relations and organizational learning.

At the level of *individual knowledge workers* rational-cognitivism would encourage an objectivist interpretation of the nature of professional expertise. This would include expectations (see Engestrom, 1989) that (a) the knowledge of the expert is objective and universal, *i.e.* the basic features of professional knowledge are culturally and historically invariant; (b) application of this knowledge base involves the execution of discrete component tasks; and (c) professional status is acquired by learning established bodies of knowledge and copying established masters of the art.

Activity theory, on the other hand, highlights:

– The different forms of expertise that may exist. Their origins lie in different cultures and histories, changing technologies, different divisions of labour, and the developing conceptions of the experts and their clients.

– That the component tasks the expert engages in are situated and context based. Experts respond to particular contingencies, using the material, social and institutional resources provided by their activity system.

– That becoming an expert is a creative process as people 'do more than they yet know how to do'.

Activity theory suggests, therefore, that the appropriate focus for an analysis of knowledge work is not knowledge or knowledge workers but expertise. Expertise can be defined as effective activity. Individual experts cannot be divorced from the activity systems of the society within which they operate. There are differing forms of expertise.

At the *level of the organization* rational-cognitivism suggests: (a) organizations are (or should be) rationally designed, their structures and procedures should approximate to what any reasonable manager would decide to do; (b) rules and plans provide one basis for co-ordination; alternatively (c) core beliefs, as explicitly formulated in a mission statement for example, outline axiomatic principles from which behavioural priorities should be deduced.

On the other hand, as summarized in figure 3, the theory of organizations as activity systems suggests:

- The origins of organizational practices lie less in rationality and more in their economic and social histories (including institutional norms, ideologies, control battles, demarcation disputes, technological choices, 'tinkering', 'muddling through', etc.).
- Pragmatic routines, not rules or mission statements, provide the actual basis for co-ordination within an organization. These are embedded in the multi-faceted nature of the organization's activity system.
- Changes in routines and outputs may require changes in peoples' conceptions of their activities and in the workings of their activity systems.
- Organizations provide a socially constructed context for actions. As people 'act practically' they interpret and negotiate such contexts. Their interpretations demonstrate resilience, but can and do change.

Figure 3 suggests, therefore, that the appropriate unit for analysing organizational knowledge is not an aggregate of beliefs or rules but a complex of routines, improvisations, setting conditions, and (often implicit) understandings. An organization's knowhow and distinctive competencies are manifest in these skilful routines. They comprise a unique combination of material, mental, social, institutional and historical factors. As they become 'blackboxed', using Latour's (1987) term, such routines become relatively entrenched.

At the level of the *organization-environment interface* rational-cognitivist approaches to management would encourage the view that: (a) organizations can be distinguished from their environments; (b) the objective processes of natural selection determine organizational survival rates; and (c) organizations depend upon explicit strategies to respond to the opportunities and demands of their environments.

The theory of organizations as activity systems reinforces the social constructionist themes already outlined:

- Organizations as activity systems depicted in figure 3 are embedded within, and maintained and restricted by, a broad external network of activity systems.
- Strategies can be analysed as 'activities'. Like activities, strategies are not driven by detailed blueprints for action; descriptions of what should be happening are likely to lag behind emerging improvisations.
- The activities of an organization are legitimated and channelled by broader institutional factors, including prevailing 'industry recipes'. The latter can themselves be analysed in the terms of activity theory.

Thus, just as activity theory avoids divorcing individuals from society, the theory of organizations as activity systems suggests that organizations cannot sensibly be divorced from their contexts and indicates that the concept of organizational boundary is problematic. Similarly, just as activity theory traces the links between individual and collective thinking, applied to organi-

zations the approach supports an institutional theory of organizational behaviour.

While the theory of organizations as activity systems affirms suggestions that strategies are enacted and self-reproducing it also points to ways in which collective redirection can occur. To conclude, it is appropriate therefore to summarize implications concerning *organizational change and learning*. Learning occurs with engagement. This is a creative process which occurs at both the individual and the collective levels. The confidence to act is a prerequisite for learning. New mediating devices may precipitate new learning. Both individuals and organizations express their knowledge more in their actions than in their articulations. Activity analysis highlights also how the often-unrecognized inconsistencies that develop within activity systems provide major opportunities for review and re-conceptualization and how new challenges may trigger new learning. Indeed, activity theory is both forward looking and emancipatory in its implications. Analysing organizations as activity systems encourages people to stand back from their everyday routines and to perceive the overall pattern that such routines fall into. It encourages exploration of the origins of these patterns, of what presently sustains them, of the imagery used in descriptions of them, of the inconsistencies and conflicts that they embrace, and of the stimulation that new challenges may provide. The conclusion is that neither the behaviour of individuals nor the behaviour of organizations is determined. Routines do become entrenched and people *may* be controlled by events, but they are also capable of debating, reworking and rethinking the contexts within which they participate.

SUMMARY

(1). Recent developments in the theory of knowing and doing challenge conventional, deep-seated assumptions about managerial and organizational rationality. This, and the increased emphasis being placed on the importance of esoteric knowledge and specialist knowhow for business success, suggest that a review of the relationship between knowledge, organization and management is timely.

(2). A modified version of Engestrom's theory of activity is proposed as an account of the hermeneutic foundations of organizations. The approach highlights the significance for organization theory of the social origins of motives, the nature and significance of mediating mechanisms in the enactment of activities, the active nature of participation, the relevance of history, and the significance of inconsistency and conflict in activity systems. A model representing organizations as activity systems (figure 3) is presented.

(3). Analysing organizations as activity systems avoids the conception of knowledge as independent from actors, as an objective resource like any other; nor is knowledge conceived independently from action, a product of discourse and interpersonal communication alone. Rather, the approach

emphasizes the interplay of actions, language, technologies, social structures, implicit and explicit rules, history and institutions. In this the approach makes a contribution to a central problem in social theory, namely, it offers an analysis of the direct and indirect relationships which link individuals and the social systems of which they are a part.

(4). For managers, the theory of organizations as activity systems offers an antidote to simplistic interpretations of the nature of individual knowledge and action, and organizational cultures and competencies. At its best the approach reframes management; it models the recurrent and embedded nature of human activities, reveals the tentative nature of knowledge and its action orientation, and points to the opportunities for development promised by engagement and conflict.

(5). Applied to the issue of knowledge and knowledge work the theory encourages a particular orientation: away from a concern with the management of experts to a concern with the management of expertise, from an emphasis on plans and strategy to an analysis of activity and activity systems, and from a preoccupation with objective knowledge to a concern with the management of collective instability.

NOTE

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