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Special Issue: The Action Dimension in Management: Diverse Approaches to Research, Teaching, and Development

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Preface

Plan for the Issue

This special issue has been constituted to distinguish the burgeoning action strategies that are now being practiced by organization and management development practitioners around the globe. Our aim is also to look for common ground across these popular action strategies.

Previous work on the action dimension in management has centered around two major themes: (1) elaboration of particular action approaches, be it action learning, action science and the like; (2) distinctions between the broad focus of action research and the popular empirical tradition of logical positivism. There are, however, some important exceptions. In the February 1993 edition of *Human Relations*, Max Elden and Rupert Chisholm produced a special issue on action research (Elden and Chisholm, 1993), which, like this current project, was a product of a symposium at the Academy of Management annual meeting. Although the editors proposed some definitive dimensions of action research, they assembled a panel to present some approaches and cases which extended and modified the ingredients of the so-called classical model. Then, in the October 1993 issue of *Human Relations*, the conversation on the special issue was continued as other authors were invited to present a critique of the February contributions.

More recently, Bailey and Eastman developed a special issue for the *Journal of Applied Behavioral Science* (1996) which examined the tension between organizational science and managerial service. The contributors debated in this issue how their respective methodologies accomplished the mission of service in today's organizations.

The case for making explicit comparisons between what were called 'action inquiry technologies' was initiated with the contribution of an extraordinary volume by Ann Brooks and Karen Watkins (1994). Not only did the book present some six different—what we are referring in this issue as—action strategies, but the authors included chapters that for the first time evoked common themes which tied these strategies together.

This special issue continues the tradition of Brooks/Watkins but seeks to extend

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the conversation by engaging in a dialogue among contributors in a few novel ways. First, while all contributors will independently present their respective approaches, they will seek to coordinate with each other by applying their approach to a set of 'action strategy criteria' proposed in this preface by the editor. Second, they each will react as a facilitator to a common case, called 'The Manufacturing Manager Comes to Visit'. Third, in a final section of this issue, we shall present a unique undertaking—a set of 'letters' that the contributors have composed to each other. These letters pose queries, extend appreciations, clarify controversies, and amplify critiques of each other's work. Each contributor has written letters to two or three of the others. The letters are listed by action strategy, and after each series of letters, the author(s) of the respective strategy respond with a short commentary on the letters that they have received. In this way, we hope to highlight the distinctiveness of the action dimension in management practice, not only by comparing our view to the more conventional norms of modern social science, but by noting differences and similarities among the six action strategies to be presented. Further, besides clarifying our research aims, we hope to assist practitioners of these action strategies, especially facilitators and change agents, to become more clear in their own theory and practice.

Conceptual Overview

The six action strategies include: action research, participatory research, action learning, action science, developmental action inquiry, and cooperative inquiry. To explain each briefly: action research, itself, constitutes a process wherein researchers participate in studies both as subjects and objects with the explicit intention of bringing about change through the research process. Participatory research, sometimes also referred to as the 'Southern School', is concerned with knowledge and power. It seeks collaboration between those from privileged groups who often control the production of knowledge and those among the economically disadvantaged who by questioning the dominant values within society can press for social change. Action learning is based on the straightforward pedagogical notion that people learn most effectively when working on real-time problems occurring in their own work setting. Action science is an intervention method based on the idea that people can improve their interpersonal and organizational effectiveness by exploring the hidden beliefs that drive their actions. Developmental action inquiry is the systematic attempt to enrich a person's, group's, organization's, or society's awareness of the interplay among transpersonal awareness, subjective interpretations and strategies, intersubjective practices and politics, and objective data and effects. Finally, in cooperative inquiry all those involved in the research are both co-researchers, generating ideas and designing and managing the project; and also co-subjects, participating in the activity that is being researched.

This overview is presented to offer a framework to help readers begin to think about the distinctions in these different approaches. In particular, it explores some similarities among the action strategies and then proposes a method to begin looking at differences. Although not always credited, Kurt Lewin (1946) is this author's nomination as the founder of these so-called 'action strategies' in his reference to action research as a means of conducting systematic inquiry into group

and organizational phenomena. The common basis for most of the strategies is that knowledge is to be produced in service of, and in the midst of, action (Peters and Robinson, 1984). Their emphasis is on the interplay between enactment and feedback in real time with the purpose of developing more valid social knowledge, more effective social action, and greater alignment among self-knowledge, action, and knowledge-of-other. As opposed to 'positivist' models that were designed to develop theories purposely separated from practice in order to predict truth, action research does not separate theory from practice on the grounds that better validity testing can result from the interplay of knowledge and action. Theory can be applied directly to practice in the field using a collaborative approach combining scholars and practitioners.

The action strategies springing from action research are thus inherently participatory. Theorists and practitioners mutually open themselves up to an inquiry process that seeks to 'unfreeze' the assumptions underlying their actions. Their methodologies are experimental and predominantly conducted in a group setting. Each encourages the presence and skillfulness of a facilitator or any facilitative participant who can help the group make use of actual situations as opposed to simulated experiences. There is also considerable focus on re-education and reflection. This means that the participants, who are normally adult practitioners, seek to improve themselves especially in regard to their human interactions and practices. They accomplish this through impartial self-observation, critical self-reflection with others, and intentional, real-world action experiments which in raising consciousness tend to permit more control over one's actions (Torbert, 1997).

Action strategies are concerned with interventions in action that are useful to the client, but action researchers also value theory. In particular, they are interested in conceptualizing their experiences in a way that is meaningful and valuable to the members of their research community as well as to third persons who might be interested in the results of their research endeavors (Eden and Huxham, 1996). So they are as much concerned with developing new theory, that is with emergent theory, as with using existing theory or presupposing theory to begin with. Hence, theory building might take precedence over theory testing.

The final similarity to be considered here among these approaches is the role of context and feelings in the inquiry process itself. Positivist science for validity purposes requires the 'subject' to be as detached from the research as possible so as not to contaminate the data. In a similar vein, the context of the research needs to be controlled so that findings can be generalized. The action strategies purposely engage researchers and participants in both the inquiry and its context so as to incorporate bias. Indeed, they prefer to work with and report about the instability of contexts. They also tend to encourage rather than reject the role of personal feelings within the inquiry process. As such, they sustain a commitment to an inquiry that seeks to unfreeze practitioners' assumptions underlying their actions. Accordingly, the reports of participants are thought to have reliability and validity because the data are rooted in real action, in circumstances that really matter to them (Pettigrew, 1990; Eden and Huxham, 1996). In Argyris and Schön's terms (1974), researchers and facilitators working in the action dimension are thus more able to get at participants' 'theories-in-use', rather than their 'espoused theories'. The inquiry process is thus not hypothetical, arising from a hunch or premise about subsequent

action, as it is 'parathetical', arising from proposition and action presented alongside one another.

But what are the principal differences between these methods? As readers prepare to take their journey through the provocative readings that follow, what questions might they ask? They should certainly consider what advantages and risks are associated with each approach. Facilitators who believe they have the capability of deploying methods from each approach are invited to consider whether they should be using them sequentially or simultaneously and how each might be introduced. What are the differential effects on participants of deploying particular strategies? How does each approach handle the two-way interactions between action and reflection, between theory and practice? What is its interest in social change and what level of change seems to dominate its concern: individual, group, organizational, or societal?

These and many other questions will be explored in the articles to follow. One way readers can keep track of these distinctions is by considering how each action strategy handles a set of action strategy criteria formulated by the editor to analyze action research-type approaches (Raelin, 1997). Therefore, presented in this preface is a comprehensive exhibit, Table 1, which juxtaposes each of the six action strategies against these action strategy criteria. To assist in interpreting the table, a short explanation is provided below of each criterion.

Action Strategy Criteria

- *Philosophical basis* Each strategy springs from a tradition in social science and social change, the articulation of which can help readers trace its roots, preferences and historical architecture.
- *Purpose* What is the underlying purpose behind each strategy's push for social change? Assuming it has achieved effectiveness in its interventions, what does each approach hope for in its ultimate effects?
- *Time frame of change* How long do exponents of the method deem it to take to achieve a reasonable level of effectiveness?
- *Depth of change* As a developmental experience, does the action strategy affect systems and people in roles in these systems or does it also probe into changes which affect interpersonal relations or even personal or intrapersonal behavior and feelings?
- *Epistemology* Each approach is concerned with how researchers and practitioners acquire, utilize and diffuse knowledge, and how the interplay between theory and practice is handled.
- *Nature of discourse* What do people in practice groups tend to talk about; for example, is the nature of the conversation rational, instrumental, strategic or emancipatory?
- *Ideology* What social and political needs and aspirations arise from the strategy in question; is there a sense of how the approach works toward the betterment of society?
- *Methodology* What are the principal procedures for transacting, measuring and evaluating collaborative activity within the practices specified by the action strategy?

- *Facilitator role* Facilitators in alternative practices can assume fairly directive or active roles in order to present and model the type of discourse promoted by the practice, they can be passive in order to allow participants to assume self-control over the practice, or they can blend their style to suit particular circumstances.
- *Level of inference* Practitioners of the various action strategies can choose whether and to what degree their practice ought to raise the level of inquiry about inferences among participants, that is, their assumptions or interpretations that may be observed but left unstated.
- *Personal risk* Since these action strategies are concerned with real personal issues and feelings, they may produce personal risk of a political, psychological, emotional, or spiritual nature.
- *Organizational risk* Since the action strategies also tend to produce organizational and institutional change, they may expose organizational members and groups outside of the practice to unexpected effects.
- *Assessment* How do these strategies evaluate their effectiveness and what do they seek to measure, be it personal effectiveness, interpersonal behavior, workplace improvement, or systemic changes?
- *Learning level* Is the level of learning first-order learning wherein preexisting responses or practices are questioned, is it second-order wherein the standard meanings and assumptions underlying our practices are challenged, or is it third-order wherein the premises underlying our theories-in-use are questioned?

Common Case

Besides comparing action strategies using Table 1 and the action strategy criteria, the authors of this special issue have also been asked to react to a common case ('The Manufacturing Manager Comes to Visit', p. 122) in order to demonstrate some important qualitative differences in intervention ambition and method. The authors have been asked to take the point of view of an action researcher called in to help the team in the case solve a problem. Readers are encouraged to take a few moments to read this case and begin to formulate their own thoughts and feelings that they might have in response to it. How would they intervene to help the team; what might they say to the team members, but especially to the team leader in the case, and what actions would they propose? It might be interesting for readers to compare their responses to those supplied by our contributors.

Article Summaries

What comes next are the six articles, in which the authors lay out their particular strategy's epistemological foundations and methods, followed by the 'letters' section. The articles also feature comparative remarks about the other approaches as well as each contributor's proposed treatment for the common case scenario.

Linda Dickens and Karen Watkins start us off with an article on the classic and, as indicated earlier, the foundational discipline for the burgeoning action strategies: action research. Their article, 'Action Research: Rethinking Lewin', while acknowledging that no unified theory of action research has ever been accepted, nevertheless contends that adherence to Lewin's principles of democratic participation

Table 1 A comparison of action methods using action strategy criteria

Criteria	Action research	Participatory research	Action learning
Philosophical basis	Gestalt psychology, pragmatism, democracy	Emancipatory philosophy, notably critical theory and Freirean pedagogy	Learning from experience, action research, and other eclectic views
Purpose	Social change through involvement and improvement	Improvement in the quality of life in the community and realization of democratic ideals	Understanding and changing of sell and/or system through action and reflection on action
Time frame of change	Both short- and long-term	Short-term changes aimed at long-term effects	Mid- and somewhat long-term
Depth of change	Intrapersonal through cultural, ranging from shallow to deep	Structural, but entailing deeper community relations and heightened critical consciousness	Instrumental, interpersonal; sometimes intrapersonal and systemic
Epistemology	Knowing through doing; making and applying discoveries	Creation and use of people's knowledge based on an expanded epistemological theory	Problem-solving, and also problem-framing
Nature of discourse	Collaborative discourse of action and problem-solving; use of data-based, actionable knowledge	Dialogue for problem-solving, community-building, and reflective action	Rational: making meaning of experience
Ideology	Focusing on participation, involvement, and empowerment of organizational members affected by the problem; reeducative	Committing to social justice through participation and self-determination	Arising from natural learning processes and influenced by beliefs of participants and staff
Methodology	Interative cycles of problem defining, data collection, taking action or implementing a solution, followed by further testing	Social research methods, including expressive media combined with people's natural ways of knowing, methodically articulated	Cycles of framing, action, reflection, concluding, re-framing
Facilitator role	Primary functions as research/process guide	Serves a partner in the people's project, performing various supportive functions	Is often passive; acts as mirror to help individuals and team look at learning
Level of inference	Focusing on data encourages low levels of inference, but reeducation process encourages higher level testing	Progressing from problem-solving to problem-posing, interrogating social structural constraints	Generally medium
Personal risk	Moderate risk, but ultimately depends upon organizational culture, consequences, visibility, and degree of sanction	May produce personal boundary problems resulting from identification with and commitment to project goals	Depends on visibility of projects; political risk if poor individual or team performance
Organizational risk	Depends upon strategic importance of the problem chosen, may entail less risk than doing nothing	Significant, since it could challenge foundational assumptions of the organization, including aspects of its mission	Moderate, needs management support at various levels
Assessment	Validity based on appropriateness of method and on the extent to which the original problem is solved	Evaluation conducted as a form of participatory research to create a reflection–action–reflection cycle	Change at individual, team, or system level depending on focus
Learning level	Varies based on nature of project, skills, and risk-taking of participants	Begins with first-order learning and change and progresses on to higher levels as the project is sustained over time with deepening inquiry	Generally second-order

Note All the authors of this special issue contributed to the preparation of this table.

Action science	Developmental action inquiry	Cooperative inquiry
Lewinian action research, Dewey's theory of inquiry	Platonic, Goethian, Hegelian, Gurdjieffian, Gandhian dialectic	Participative world view, emphasizing subjective–objective reality
Change in reasoning and behavior leading to increased competence, justice, and capacity for learning and human development	Change in outcomes, behavior, strategy, and vision through continual feedback and realignment among these four	Practical knowing in the service of human flourishing
Medium- to long-term	Instantaneous, short-term, long-term, and lifetime	More long-term than short-term
Interpersonal and also intrapersonal and cultural	Instrumental, intra-/inter-personal, organizational-social, ecological	Personal, organizational, institutional, cultural, depending on focus
Reflecting-in-action, making explicit tacit theories-in-use	Seeking and suffering awareness of incongruities among the four territories of experience	Critical subjectivity in participatory transaction with cosmos; co-created findings
Interplay of rational, instrumental, strategic, and especially emancipatory, exploring the premises of beliefs	Interplay of instrumental, strategic, and emancipatory reasoning and acting	Dialogue between participants acting as co-researchers and co-subjects in an enabling balance of hierarchy, cooperation, and autonomy
Subscribing to a Model II action model which engages people in transforming and improving their world	Viewing all ideas as held lightly and open to transformation through voluntary, mutual discipline	Conceiving human persons as self-creating and self-transcending agents in relation to a dynamic, self-ordering living cosmos
Reflection on there-and-then and here-and-now reasoning, with an emphasis on on-line interactions	Encouragement of meetings among levels/scales/persons in inclusive present	Research cycling between propositional, practical, presentational and experiential knowing
Is active, interrupting taken-for-granted practices, provoking reflection, modeling alternative behavior	Is reconciling, a 'third force', blending passion, dispassion, and compassion	Often initiates the inquiry process; initially facilitating the emergence of cooperative group; later devolving initiative to group
Up and down the ladder of inference	Up and down the ladder of abstraction, testing alignment from intuitive vision to concrete, real-time outcomes	Up and down the ladder of abstraction, from exploratory inquiry to experimental testing
Varies according to participant choice. Psychological exposure, possibly political risk	May lead to psychological exposure, political conflict, spiritual love–isolation, transformation–determination, and life–death dilemmas	Depends on participant choice. Can be very high if participants explore questions concerning the nature of their identity and professional practices
Varies. If actions are expected to be high risk, participants may need to frame and practice ways to keep risk within acceptable range	Varies, but this approach will be adopted gradually, incrementally, and through ongoing testing of its efficacy	Varies since participants can choose the degree to which they choose to overtly confront organizational norms and culture
Individual and organizational effectiveness, learning capability, and systemic change	Ongoing, on-line assessment of managerial performance, systems effectiveness, and the attractiveness/inclusiveness of mission/vision	Assessment built in through the process of research cycling
Second- and third-order	Gradual development of capacity for interweaving single-loop, double-loop and triple-loop feedback	Depends on the inquiry topic but in its fullest expression, an interweaving of single-loop, double-loop and triple-loop learning

Common Case: The Manufacturing Manager Comes to Visit

Background

In a large high technology company, a team of managers and supervisors were asked to work on a new project to achieve quality and cost improvement through empowerment and self-directed work teams. The senior manufacturing manager charged his staff with identifying individuals for this team, after which he signed off on the project. The team members were asked to learn more about the issues, take action to address problems that arose, and make recommendations about what the organization might do in the future.

It has now been six months since the project started. The group has invited the senior manager to each of their meetings, but this is the first time they have met with him.

Thoughts and feelings of team leader	*What was said*
Whew, he finally came to a meeting. He's been invited to every session. Everyone is really nervous about this session.	Team leader (to Senior mgr): Our team has decided that our goal will be to identify ways that each of us can help eliminate non-value-added work in our area. Each of us will develop an individual project and implement it over the next year. The team will be our sounding board to improve the project, help us move forward and take additional steps, and so on.
What?? You finally come to a meeting six months after we start and suddenly don't like what we have done?	Senior mgr: That won't work. You were supposed to develop a precise plan for quality improvement to cut down on costs. We don't need a sounding board.
We should have known. This is what they really mean by 'empowered' teams.	Team leader: We were told that you wanted us to be empowered and to identify our own work task. What gives?
Oh great—we asked for it so now we got it.	Senior mgr: You asked me to come to this meeting to hear a progress report and I am telling you what I think of what you've done.
You keep cutting us off at the knees—how do you expect us to get anywhere?	Team leader: Well, we have done as much as we could with the membership of the team changing every time we meet. You keep adding people and moving people to different jobs.
Can you believe this guy?!	Senior mgr: That's how things are now. Your team should be working to learn how to handle that problem. We all need better ways to deal with changing team membership as people are moved, or demoted.
In a pig's eye.	Team leader: We need to discuss this and we will get back to you with our team's goals.

and social action, and the cycling between analyzing a situation and then reconceptualizing it, has underpinned those activities designed to foster change on the group, on the organization, and even on society. The article clarifies the two essential aims of action research as: to improve and to involve. Improving focuses on improving practice—its action component; improving the understanding of practice by practitioners—its reflective component; and improving the situation in which the practice takes place—its validity component. As for involvement, participants collaborate with researchers since they are grounded in the context. Involvement also recognizes community members' psychological ownership of the data and leads to effective implementation since the methods of inquiry and the results of the inquiry can be put to immediate use.

Peter Park follows Dickens and Watkins with an article entitled; 'People, Knowledge, and Change in Participatory Research'. Park initially makes a case for using the term, 'participatory research', rather than 'participatory action research', in designating the so-called Southern perspective because it has been historically more allied with the acute focus on rank and file voice in contrast to organizational and administrative applications. In participatory research, the research relies on people's participation in the communities where they are working, both in gathering information about the communities' problems and in implementing solutions. Hence, participatory research emanates from the felt needs of a community. What motivates it are the needs of the community for ameliorating the living conditions of the people. It is the people's needs that arise in the course of daily living that call for study and action. Furthermore, since any project that may unfold is the community's, the researcher joins and participates in the effort as a partner, taking on various roles, from community organizer to facilitator of meetings, from research coordinator to resource person for technical and material assistance.

Victoria Marsick and Judy O'Neil's 'The Many Faces of Action Learning' points out that let alone the diverse perspectives that underlie the action strategies detailed in this special issue, action learning in its own right has split into different schools of practice. The authors discuss, in particular, the scientific, experiential and critical schools. Common to each, however, is the view that the task should be the vehicle for learning and that there is no learning without action but no deliberate action without learning. Hence, participants in these programs work on problems or projects to which no one knows any final answer and meet on equal terms to discuss their problems and progress. Marsick and O'Neil take a cautionary stance in their admission that although action learning is looked upon as a relatively mild development strategy, it can produce experiences in participants that are powerful and even frightening. For some it is the first leg of a journey toward greater self-insight, especially the capacity to learn from experience and obtain greater awareness of the political and cultural dimensions of organizational life. For organizations, they say that it is perhaps the first step toward linking individual learning with systemic learning and change.

The action science perspective, captured in the article by Robert Putnam, 'Transforming Social Practice: An Action Science Perspective', strikes me as attempting to perfect the action research methods of Lewin by pursuing our unconscious thinking, also referred to by Donald Schön as 'knowing-in-action'. Action science deliberately surfaces our 'mental models' through a process of 'reflection-in-action', especially focusing on the reasoning people use in their actions. As Putnam points out, most of us are unaware of our theories-in-use and are surprised how we become inconsistent with

our espoused theories when they get placed into action. Moving into the realm of organizational learning, action science practitioners and researchers examine the organizational worlds that have socialized people, without their awareness, to deploy theories-in-use that are suited for command and compliance. As Putnam remarks, 'even when they genuinely espouse empowerment and believe they are acting consistently with it, people in organizations commonly act in ways that disempower themselves and others'. Hence, organizations are beset by a host of informal but firmly entrenched practices that constrain their ability to consider important matters. Action science takes the risky yet perhaps the only effective step of addressing constraining practices that disempower people and limit organizational success.

Bill Torbert's article, 'The Distinctive Questions Developmental Action Inquiry Asks', posits that developmental action inquiry is unique among the action strategies in its concurrent consideration of three fundamental questions: (1) how, in real-time, to divide one's attention by actively turning toward its origin; (2) how to create mini communities of inquiry in real-time among friends, within one's family, and at work; and (3) how to act in an objectively timely manner. Torbert goes on to explain how developmental action inquiry (DAI) interweaves subjective, first-person inquiry; intersubjective, second-person inquiry; and objective, third-person inquiry, all at the same time or, at least, concurrent with one's actions. In this way, it attempts to accomplish a distribution of attention so that one may become aware of what Torbert refers to as the four 'territories' of experience. In particular, one becomes aware of transformations between intuition, implicit or explicit strategic logic, verbal or non-verbal practice, and effects on others. In a similar way, DAI challenges people to digest and respond to double- and triple-loop feedback such that they can change the very quality of their present awareness and visioning. It also challenges individuals to diagnose themselves and others in developing analogies among personal, organizational, and social scientific developmental paths.

Peter Reason concludes the panel presentations with an article entitled; 'Integrating Action and Reflection Through Co-operative Inquiry'. Cooperative inquiry begins with the classic action research perspective that all those involved in a research endeavor ought to be involved as both co-researchers and co-subjects, that is, conducting and participating in the research at the same time. But what it does is provide a very specific technology to assist people, from all walks of life, not just academics or other elites, to develop the ability to act and reflect, an ability seemingly lost in the human condition. Cooperative inquiry cycles people through a number of phases of participation, starting with the need to agree to work on an area of human activity, applying the inquiry to experiments in everyday life, deciding whether to become deeply immersed in the experience, and then assessing and writing about the experience as a basis for further inquiry. The method calls for a research cycling between action and reflection, asking participants to look at the experience from different angles, developing different ideas and different ways of behaving.

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Action Research: Rethinking Lewin

Abstract *Fifty years after Kurt Lewin invented the idea of action research, action research remains an umbrella term for a host of activities intended to foster change on the group, organizational, and even societal levels. This article explores both historical and contemporary definitions of action research and describes the process and goals of action research. Located in the tradition of Lewin, organizational action research involves cross-functional teams who address deep-rooted organizational issues through recurring cycles of action and reflection. A case example of an action research project involving two teams in a high technology corporation depicts the process in action.*

> Action research aims to build communities of people committed to enlightening themselves about the relationship between circumstance, action, and the consequence of their own situation, and emancipating themselves from the institutional and personal constraints which limit their power to live their own legitimate … values (Kemmis and McTaggart, 1988: 23)

After fifty years of development, action research remains an umbrella term for a shower of activities intended to foster change on the group, organizational, and even societal levels. While most action research practitioners would agree that they are attending to institutional or personal constraints, they vary in their emphasis on different elements of the action research process to address those constraints. Participatory action researchers focus on participation and empowerment. Teacher action researchers rely on data to transform individual behaviour. Organizational action researchers focus on research and data driven decision-making. There is, in fact, no definitive approach to action research, which is part of its strength but also part of its problem. Action research has not evolved into a unified theory, but has resulted, instead, in disparate definitions and characterizations (Peters and Robinson, 1984).

This article explores both historical and contemporary definitions, development, and goals of action research while acknowledging the differences among various action research approaches. Case examples are offered to depict the process in

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action. Finally, we consider the case of the manufacturing manager and propose possible approaches to intervention based on the action research framework.

Development and Definitions of Action Research

Kurt Lewin developed the action research model in the mid-1940s to respond to problems he perceived in social action (Kemmis, in Kemmis and McTaggart, 1988). Conducting research in a time of great social challenges brought about by World War II, Lewin worked toward achieving democratic inquiry within the social sciences. He believed that social problems should serve as the impetus for public inquiry within democratic communities. The war, writes Kemmis (1988), 'galvanised views about democratic decision-making processes and participation in those processes by those affected by the decisions' (p. 5). As Lewin conceived it, action research necessitates group decision and commitment to improvement.

Noting the chasm between social action and social theory (Peters and Robinson, 1984) and the lack of collaboration between practitioners and researchers, Lewin called for social scientists to bridge the gap and combine theory building with research on practical problems (Cunningham, 1993). Without collaboration, practitioners engaged in uninformed action; researchers developed theory without application; and neither group produced consistently successful results. By using the methodology of action research, practitioners could research their own actions with the intent of making them more effective while at the same time working within and toward theories of social action. The marriage between theory and action could produce informed, improved behaviour and encourage social change (Oja and Smulyan, 1989). Action researchers, then, generate context-bound, values-based knowledge and solutions from their public inquiries into system problems.

Lewin conceived of action research as a cycling back and forth between ever deepening surveillance of the problem situation (within the persons, the organization, the system) and a series of research-informed action experiments. His original formulation of action research 'consisted in analysis, fact-finding, conceptualisation, planning, execution, more fact-finding or evaluation; and then a repetition of this whole circle of activities; indeed a spiral of such circles' (Sanford, 1970: 4; Lewin, 1946). Although Lewin first formulated the definition, he left scant work to describe and expand his early definitions. Argyris, Putnam, and Smith (1987) note that Lewin 'never wrote a systematic statement of his views on action research' (p. 8). In fact he wrote only 22 pages that addressed the topic (Peters and Robinson, 1984). Perhaps because Lewin was unable to fully conceive his theory of action research before his death in 1947, he left the field open for other similarly-minded researchers to elaborate upon, and at times reinterpret, his definition. Several subsequent definitions of action research illustrate how others have changed the definition to emphasize different aspects of the process.

According to Cunningham (1993), action research 'is a term for describing a spectrum of activities that focus on research, planning, theorising, learning and development. It describes a continuous process of research and learning in the researcher's long-term relationship with a problem' (p. 4). In his view, the action research approach is broken down into a series of units that are interrelated. Cunningham's definition suggests that the methodology encompasses a wide

breadth of activities rather than one specific format. Although he reports that the process includes learning and development, he does not state explicitly whether or how action research leads to action or change and neglects mention of action research as a group process.

Sanford (in Reason and Rowan, 1981) describes action research as a process of analysis, fact-finding, conceptualization, planning, execution, and then more fact-finding or evaluation, all followed by a repetition of the same pattern. While Sanford's definition conveys Lewin's iterative process of action research, it ignores the issue of changing the environment under study. The term 'execution' has an element of action to it, yet does not adequately address the transformative change that Lewin intended. It implies, instead, an act or performance, with the action brought upon the subject, rather than the subject as an active member of the process. The definition fails to mention the importance of the participants in the action research process and how they act as members of the change environment.

Argyris places action science clearly in the Lewinian action research tradition and emphasizes the features from Lewin's approach that are most consistent with action science in his definition of action research:

> 'Action research takes its cues—its questions, puzzles, and problems—from the perceptions of practitioners within particular, local practice contexts. It builds descriptions and theories within the practice context itself, and tests them through *intervention experiments*—that is, through experiments that bear the double burden of testing hypotheses and effecting some (putatively) desirable change in the situation. (Argyris and Schon, 1991: 86)

In this definition, the interventions are an experimental manipulation, and problem-solving is the goal. Contribution to knowledge is in the area of research on intervention. Participants learn a mode of public, democratic reflection (the action science technology) and participate in solving self-diagnosed problems.

Elden and Chisholm (1993) identify emerging varieties of action research and label action research as originally conceived by Lewin as the classical model of action research. Heller (1976) argues that those who would differentiate their work from the classical, Lewin-influenced model may in fact misunderstand Lewin. For example, Lewin focused on classical experiments over social action, but at the same time sought to understand, through this research, the deeper causes that threatened democracy, itself a social action thrust. Elden and Chisholm (1993) believe that action research is focused at increasing systems' adaptive capacity, ability to innovate, and competence in self-design. Quoting Brown, they note that action research from the Northern school tends to be focused on reform, particularly organizational reform, while action research from the Southern school is more focused on social change, and that these differing purposes have everything to do with differences in approach. Heller (1976) notes that the distinguishing feature among these methodologies may be the choice of intervention approach. The model here best fits the classical model and the emphasis on organizational development or an organizational reform agenda.

Social scientists can apply these various definitions and the action research methods to multiple situations and within practically limitless settings. Cohen and Manion (1980) explain that they can be used to spur action; to address personal functioning, human relations and morale; focus on job analysis; guide organizational

change, planning and policy making; create innovation; solve problems; or develop theoretical knowledge. We note that—when implemented with close adherence to Lewin's principles of democratic participation and social action, and cycling between analysing a situation and reconceptualizing or reframing that situation or problem—action research has significant potential to create space for organizational learning.

Response to the Traditional Scientific Paradigm

Gestaltist in origin (Foster, 1972), Lewin's arguments for action research stemmed from the limitations of studying social problems in a controlled, laboratory environment. He proposed that principles of traditional science be used to address social problems (Aguinis, 1993). Rather than study a single variable within a complex system, Lewin preferred to consider the entire system in its natural environment (the gestalt). He argued that scientists could research social phenomena 'not by transforming them into quantifiable units of physical actions and reactions, but by studying the intersubjectively valid sets of meanings, norms, and values that are the immediate determinants of behaviour' (Peters and Robinson, 1984: 115). Lewin brought together all the elements of science that had been separated rigidly in order to study social phenomena that could not be understood by using any one of those dispersed elements (Sanford, in Reason and Rowen, 1981).

Lewin believed that experimentation was an important part of any change effort. Action research was built upon the traditional scientific paradigm of experimental manipulation and observation of effects (Clark, 1976). A change is made, and the results are studied in order to inform future change efforts. Similar to traditional science, action research yields a set of general laws expressed in 'if/so' propositions (Peters and Robinson, 1984). Yet, beyond that, the methodologies diverge.

Whereas the traditional scientific paradigm reduces human phenomena to variables that can be used to predict future behaviour, the alternative paradigm, of which action research is a part, describes what happens holistically in naturally-occurring settings (Perry and Zuber-Skerritt, 1994). Unlike traditional science, action research does not attempt to set tight limits and controls on the experimental situation. The action researcher approaches the subject, whether people or institution, in its natural state (Trist, 1976).

Both action research and traditional science share the goal of creating knowledge. The action research participants begin with little knowledge in a specific situation and work collaboratively to observe, understand, and ultimately change the situation, while also reflecting on their own actions. The situation and environmental conditions lead the direction of the research. Traditional science, on the other hand, begins with substantial knowledge about hypothetical relationships, seeking to 'discover new facts, verify old facts, and to analyse their sequences, causal explanations, and the natural laws governing the data gathered' (Cunningham, 1993). It is exact in its measurement of cause and effect.

Another difference between traditional and action research lies in their approaches to action. While the former collects or establishes information for the purpose of learning and usually ends with the point of discovery, the latter intends to use any information to guide new behaviour. Traditional science does not attempt to offer solutions to problems (Cohen and Manion, 1980). Chein, Cook and Harding (1948)

contend that action researchers differ from scientists in that they must not only make discoveries, but must also ensure that those discoveries are properly applied. Action researchers attempt to make scientific discoveries while also solving practical problems. Aguinas (1993) notes that, nevertheless, the separation between action research and science is greater than ever.

Participants in action research programmes expect to be treated not as objects or even subjects, but as co-researchers engaged in 'empowering participation' and in 'co-generative dialogue' between 'insiders and outsiders' (Elden and Levin, 1991). In action research, truth is in the process of inquiry itself. Was it reflexive and dialectical? Was it ethical, democratic, and collaborative? Did participants learn new research skills, attain greater self-understanding, or achieve greater self-determination? Did it solve significant practice problems or did it contribute to our knowledge about what will not solve these problems? Were problems solved in a manner that enhanced the overall learning capacity of the individuals or the system?

These are the types of questions that guide action research. They are unlike those that guide most research. On the other hand, they speak to the essence of management and organizational learning.

Critiques of Action Research

Action research has been criticized as either producing research with little action or action with little research (Foster, 1972); weak when merely a form of problem-solving and strong when also emancipatory (Peters and Robinson, 1984; Kemmis, in Kemmis and McTaggart, 1988); lacking the rigor of true scientific research (Cohen and Manion, 1980); and lacking in internal and external control (Merriam and Simpson, 1984), hence of limited use in contributing to the body of knowledge. Marris and Rein (in Cohen and Manion, 1980) argue that the principles of action and research are so different as to be mutually exclusive, so that to link them together is to create a fundamental internal conflict.

Many action research studies appear to abort at the stage of diagnosis of a problem or at the implementation of a single solution or strategy, irrespective of whether it resolves the problem. Individuals seeking to solve problems in complex, real-time settings find that the problems change under their feet, often before the more in-depth iterative search for solutions suggested by action research has achieved meaningful results.

These critiques hinge on whether or not action research must contribute to knowledge in the same manner as other forms of social science research and whether or not action research must end in a resolution of a problem in order to be valid (Watkins and Brooks, in Brooks and Watkins, 1994). There is little doubt from the works reviewed in this article, as well as from the case studies of action research projects, that these critiques are more academic than practical concerns of most action researchers.

Essential Goals of Action Research

The expectation to both make and apply discoveries reflects the two essential aims of action research: to improve and to involve. The goal of improvement is directed toward three areas: practice, the understanding of the practice by its practitioners,

and the improvement of the situation in which the practice takes place (Carr and Kemmis, 1986; Brown et al., 1982). Indeed, action research is more effective when participants engage in self-reflection while they are critically reflecting on the objective problem (Brown et al., 1982). Researchers can meet the goal of improvement by taking strategic action and then examining these actions against their original hypotheses. The validity of the theory is judged by a simple criterion: whether it leads to improvement and change within the context. It must both solve a practical problem and generate knowledge.

The goal of involvement is no less important than improvement. The Lewinian approach states that participants in the environment or project are best suited to collaborate and develop hypotheses since they are grounded in the context. They know the subtle characteristics that might influence the implementation of any plan. Additionally, involvement encourages members' psychological ownership of facts; it allows for economical data collection; and teaches methods which can be used later for further development (Lippitt, 1979). In addition to owning the problem, the action researchers may acquire the skills necessary for continuous learning and problem-solving so that what is learned in the action research process is actually implemented.

Involvement speaks to the need for collaboration that Lewin considered vital to research. It is one critical element that distinguishes action research from other forms of social research (Peters and Robinson, 1984). The collaboration, according to Peters and Robinson, 'must take place within a mutually acceptable ethical framework governing the collection, use and release of data' (p. 118).

The interdependence of improvement and involvement addresses Lewin's concern about the schism between theorists and practitioners. Action research can produce strong links among knowledge about learning, personal knowledge, and the commitment to further strategic action (Brown et al., 1982).

The Process of Action Research

As noted, action research consists of a team of practitioners, and possibly theorists, who cycle through a spiral of steps including planning, action, and evaluating the result of action, continually monitoring the activity of each step in order to adjust as needed (Kemmis and McTaggart, 1988). The cyclical nature of action research recognizes the need for action plans to be flexible and responsive to the environment. Kemmis and McTaggart note that 'Lewin's deliberate overlapping of action and reflection was designed to allow changes in plans for action as people learned from their own experience' (p. 8).

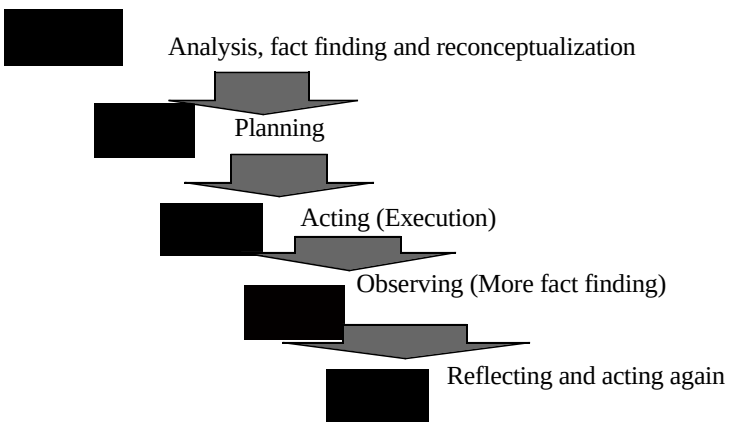
The action research team begins the cycle by identifying a problem in their particular context. Often, the outside facilitator is needed to unfreeze the group dynamics so that participants can proceed to make changes. After identifying the problem within its community, the action research team works within that context to collect pertinent data. Data sources might include interviewing other people in the environment, completing measurements, conducting surveys, or gathering any other information that the researchers consider informative. By collecting data around a problem and then feeding it back to the organization, researchers identify the need for change, and the direction that that change might take (Watkins, 1991).

Following the guideline of involvement, all team members participate in the data collection phase.

After collecting the data, action research team members analyse it and then generate possible solutions to the identified problem. In addition, the team must make meaning of the data and introduce that meaning to the organization. The feedback to the community may act as an intervention itself, or the action researchers may implement more structured actions that create changes within the system. The interventions can be considered experimental, as the action research team members next test the effects of the changes they have implemented by collecting more data, evaluating the results, and reformulating thoughts or redefining the problem in the system.

The action researchers continue moving through this cycle until they have exhausted the problem that they identified initially. Possibly, completing one cycle adequately addresses the problem; more likely, however, the team might go through several iterations of problem identification and solving before the problem is both correctly identified and fully addressed. Figure 1 presents Lewin's model of action research—phases that he originally depicted as a spiral.

Figure 1 Lewin's action research model



Models of Action Research

Action researchers can draw upon many models to guide their research. Cunningham (1993) notes:

> The difficulty with any definition of action research is that the term can be used to summarise many activities which have the 'veneer' of research and action. Two researchers attempting to solve the same problem could inevitably reach different conclusions and still meet the criteria of action research within some paradigm or another. (p. 25)

Different researchers using the action research method may disagree in their approach, while agreeing on fundamental philosophies or goals. The participants in any action research undertaking ultimately choose—either consciously or unconsciously—the particular route that directs the research.

Most action researchers agree that action research consists of cycles of planning, acting, reflecting or evaluating, and then taking further action. Because various forms of action research exist, practitioners may choose one or several methodologies to inform their action. Consequently, it may be difficult to identify a 'pure' action researcher, that is, someone who follows only one particular methodology.

In addition to choosing from different methodologies, action researchers may differ in what they choose to emphasize in the action research cycle. Some emphasize experimentation, others show more concern with feedback, planning, or learning and theory building (Cunningham, 1993). Further, researchers may vary the duration of each cycle (Brown et al., 1982) depending on their particular purposes.

The professional expert model of action research (Whyte, 1991b) is based on the premise that a professional researcher contracts with an organization to 'study a situation and a set of problems, to determine what the facts are, and to recommend a course of action' (p. 9). The professional expert leads the research effort in this situation, with relatively little direction or involvement provided by organizational members. Although this model can provide answers to problematic organizational questions, it does less to stimulate learning on the part of organizational actors. Members may not gain full comprehension or ownership of their problems and underlying values and, thus, may remain unable to address them adequately without continued outside consultation or intervention.

McTaggart (1991) differentiates between action research and participatory action research—the focus of Park's article in this special issue—which he suggests is more emancipatory than much of the action research undertaken. Participatory action research presupposes a commitment that all participants actually do research for themselves. Likewise, Kemmis (1988) stipulates that participants in the environment under investigation should be involved in every stage of the action research cycle; participatory action research theorists, on the other hand, suggest that some social scientists who undertake action research projects define 'involvement' so broadly that participants actually engage minimally in the project. Participatory action research, then, serves as an extension of Lewin's original formulation, which focuses more upon involvement than participation. Action research is truly participatory when members of the particular context design and conduct the research and reflect on its nature (McTaggart, 1991). The participants engage in research that changes first themselves and then their environment.

In summary, the literature offers a variety of applications of action research. While this allows practitioners to choose an approach that meets specific needs, it also makes difficult a common understanding. The existence of several explicit models of action research interferes with the development of a consistent and unified theory of action research. Few authors agree on a definition of action research; they may include certain elements of Lewin's theory while de-emphasizing, or altogether ignoring, others. Most theorists agree on the collaborative nature of action research, yet fail to critically examine how individuals collaborate or, indeed, engage in action research. Some may acknowledge the ability of action research to improve social action, yet neglect the internal values and theories that define improvement and guide that action. The literature provides limited information on internal action research team processes, focusing instead on the intervention and its consequences. Cases are written from an expert point of view, while the perceptions of team

members usually are neglected. Finally, the literature fails to clarify the interdependence of action and research. In the section which follows, we illustrate the classical model of research through a case study of two contrasting action research teams in a high technology company.

Lewin's Model in Action, Part I: The Case of Two Action Research Projects

Southwest Technologies (ST), a multinational, high technology company, began an action research project in conjunction with the University of the Southwest (the University) in order to study quality issues within two divisions, Stripe and Star. The more specific purpose of the venture was to establish corporate action research teams to identify and address social systems-related barriers to the implementation of the divisions' total quality management programmes and to help facilitate the move toward self-directed work teams (Dickens, 1998). The 'action' task would enable ST to move toward a more democratic work culture; the 'research' task would contribute knowledge to the field of quality management in the workforce.

Stripe and Star were situated in separate buildings on the same corporate campus in the Southwest. Faculty from the local university approached the site manager to propose the formation of action research teams. Table 1 below depicts the actions taken by each team over the course of one year as they relate to the action research process described above.

While using Lewin's spiral as a basic framework, Table 1 provides much greater detail about what action research actually demands from participants. It conveys the iterative nature of action research, emphasizing that it requires both parallel and serial stages of activity (Davis and Valfer, in Clark, 1976). The table also illustrates that teams may need to re-cycle through steps that received inadequate attention or that were not resolved. Areas in which each team appeared to struggle, continuing to attempt action around a problematic step without achieving resolution, become apparent in this chronology.

Even this level of detail, however, fails to capture the tensions, revisions and experimentation inherent in the process. Action research is not a methodology that can be implemented in discrete, orderly steps, as much of the theoretical literature suggests. Rather, it can go forward, backward, and all directions at once. Both teams became paralysed or helpless. In this instance, the Stripe team got bogged down trying to identify a project that met with management approval and we see the cycling again and again through planning and reflection with little or no action. On the other hand, the Star team moves methodically through goal setting to action but is then arrested in the middle of the process when they present their preliminary findings to management. At this point, both management and the team decide that the team does not have authority to address the problems identified. What becomes clear in these chronicles is that each step reveals new information and new demands that have the potential to affect the outcome of the action research process.

Lewin's Model in Action, Part II: The Case of the Manufacturing Manager

The case addressed by each of the articles in this special issue provides an opportunity to illustrate how action research might be used to intervene on a

Table 1 The action research project at Southwest Technologies

Stripe action research team	Star people effectiveness team
Planning • forming the team • learning action research • selecting an area for research • agreeing on action	*Planning* • outlining goals • forming the team • studying empowerment • adopting action research • exploring the purpose of the team • seeking authority • facing conflict • agreeing on action
Acting	*Acting* • collecting the data
Reflecting • discussing team processes • confronting issues of membership and leadership • discussing team objectives • discussing team processes • organizing the data • reporting to managers • analysing the data	*Reflecting* • reflecting on team and data collection processes • organizing and analysing the data • coping with change • reconsidering our authority • organizing our feedback • reconsidering our authority and purpose • preparing for the QST presentation • presenting data to upper managers for reflection
Acting • creating individual projects	*Planning*
Reflecting • discussing team objectives • discussing team processes • discussing team purpose and objectives	
Planning • seeking authority • sharing our experiences • agreeing on action	
Acting • collecting the data	
Reflecting • organizing and analysing the data • presenting the data to upper managers for reflection	
Planning	

problematic organizational situation. Here, we see an interaction during a meeting between team members and management that leaves the participants dissatisfied with one another and with the outcome of the meeting.

The case of the manufacturing manager suggests several weaknesses and constraints

within the team's functioning, as observed from the lens of action research. If action research intends to produce social change and practical solutions in a democratic forum, then we must ask how we can democratize this group. We look at ways to involve participants and improve the situation in a way that balances research and action.

How then would action researchers respond to the case? One possibility is to explore the issue of sanction—the necessary endorsements and permissions to act which are essential to action research. Does the team indeed have organizational sanction to proceed? If it once did, does it still? What is the nature of the sanction that the team has—what can it do, for how long, to whom? One paradox evident in this case is that a team may have the stated authority to act and still not feel an internal capacity to act. That is, they may experience a mandate without also experiencing empowerment to fulfil that mandate.

Another key observation is the role of management in sanctioning the project. As Goodman and Clark (in Clark, 1976) contend, 'It is very difficult both to collect good data and to employ the data usefully without the broad support of the client system' (pp. 174–5). Foster (in Clark, 1976), Clark (1976), Greenwood, Whyte and Harkavy (1993) and Seashore and Bowers (1963) all report that continued sanction is imperative to the enactment of the action research process. While the teams intended to be self-sufficient, they could not proceed without management approval. This case demonstrates again the critique that many action research teams yield research with little action.

We are intrigued by the juxtaposition of sanction and sanctuary—perhaps there is a way that a team that has not been sanctioned to take action also lacks sanctuary or safety. Certainly the thoughts of the team leader suggest this when he thinks, 'You keep cutting us off at the knees'. An action researcher might explore learned helplessness and empowerment issues with the team members and the manager within the context of sanction.

We have said that the two goals of action research are to involve and to improve. Team members must consider their own involvement, as well as the degree of collaboration with their manager. How can they involve the manager in a dialogue to identify a mutually acceptable improvement objective and then continue to involve him or her in subsequent iterations of the action research process? If involvement leads to psychological ownership, then what does the manager need in order to take ownership of the organization's project? Who is part of the system that must be involved? If this stakeholder has not been a part of the process, who else may also need to be involved in order for the team to have the necessary endorsements to proceed?

Based on the thought, 'Whew, he finally came to our meeting. He's been invited to every session', group members might identify the manager's lack of involvement as a serious constraint. The response to this identified problem, then, is to create ways for the manager to be involved. In this case, simply inviting him to meetings has not been sufficient. Team members have the opportunity to reflect on their own efforts at involvement to date and must own up to the fact that they have been ineffective partners in the project. Group reflection might lead participants to acknowledge that they have failed at involvement and to generate new options. They must not only look at ways to involve the manager, but also at ways to involve themselves in involving the manager. Team members could request a commitment from the manager to attend specific meetings; they could, themselves, commit to briefing the manager thoroughly—through electronic mail, memos, phone calls, or short

meetings—on a regular basis. They could solicit from the manager his own ideas about the best way to involve him.

Action research requires that a group have a specific goal. Cunningham (1993) notes that a problem that is too general cannot be tested. It is possible in this case that 'identifying ways that each of us can help eliminate non-value-added work in our area' is too general a goal upon which to act. The case does not delineate action steps surrounding non-value-added work (NVAW). At this point in the team's existence, team members are compelled to reconsider their goal. This meeting gives them the opportunity to co-create with the manager a goal that meets his needs as well as theirs and to collaborate on actions they might pursue. When the manager tells the group that the goal of eliminating non-value-added work is not a good idea, he may show little respect for the thought and research that the team members have dedicated to their task; but it also illustrates that the manager does not 'own' the goal of eliminating NVAW. Most importantly, the team has the opportunity to question whether or not the goal of eliminating NVAW will indeed make a significant improvement in the organization.

The team's plan to develop individual projects intimates that they might not be able or willing to work with each other. When team members decided to develop individual projects, they may have colluded to inhibit teamwork and collaboration. Kemmis and McTaggart (1988) argue that 'action research is not individualistic. To lapse into individualism is to destroy the critical dynamic of the group' (p. 15). Smith and Berg (1988) state that 'in order to be a group, a collection of individuals must integrate the large array of individual differences that the members represent' (p. 90). Yet in this case, we see more indications of individualism than teamwork, more distrust than trust.

Action research intends to foster learning about one's self and one's environment. In this case, however, we actually see no evidence of learning. As the case is written, it appears that the team has done little besides decide to act on NVAW in the previous six months. Have team members, in fact, learned anything in the six months that they have been together? If they have, they could use this meeting as an opportunity to share their new knowledge with their manager. If they have not, then they need to acknowledge this and make a decision to disband or to reframe their approach.

In conclusion, this case offers many possibilities for action research interventions. Most notably, team members and the manager can increase their efforts at involvement and secure organizational sanction for their activities. The members might be more specific in their goal definition and ensure that everyone 'owns' the goal. After the team members begin doing these things to improve their group, they can return their attention to improving their organizational environment—selecting a problem, collecting data, studying the data, experimenting, providing feedback, implementing changes, and continuing this cycle until they have accomplished their project. The case well illustrates the interdependence of group or involvement strategies with the improvement aims of action research.

Conclusion

Lewin's approach to action research, the classical model, conceived of a process whereby we would attain deeper and deeper understanding of a phenomenon

through cycles of fact-finding or research and of taking action to implement what was learned in the research. Taking action is itself an experimental treatment on an organization or a community and can be studied to see whether or not the system or problem is transformed. Each of the variants discussed in this special issue has its roots in this Lewinian model. Participatory research has embraced the social change theme that underlies much of Lewin's work. Action learning focuses on transformation through individual and collective reframing of the problem—what Lewin called reconceptualization. Action science looks deeply into individual actions for their reflection of the underlying social perspective—whether more authoritarian or democratic in Lewin's terms—and through fact finding (Argyris' directly observable data) works to make explicit these tacit social perspectives and thereby to transform them (reconceptualization). Developmental action inquiry focuses on the readiness or developmental level of the individual or system to take action, to make a change. Collaborative inquiry emphasizes the power of asking questions and of collaboration. While these approaches no longer emphasize the hypothesis testing in the positivist tradition found in Lewin's work, there is nevertheless a thread that connects back to Lewin. Somehow we think he would have applauded the evolution and reinterpretation of his ideas evident in these pages.

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People, Knowledge, and Change in Participatory Research

Abstract *My purpose in this article is to highlight characteristics of participatory research that distinguish it from other forms of research aimed at generating action. To this end, I will single out the central role that ordinary people play in motivating and sustaining research efforts, the nature of the knowledge generated, and the social change mechanism embedded in participatory research.*

Historical and Terminological Considerations

It is a historical quirk that the form of action-oriented research, which is being referred to as the Southern perspective here, has come to be called simply 'participatory research'. This terminology apparently has its origin in Tanzania where a group of development workers from North America and Scandinavia coined the term about 25 years ago (Hall, 1991). It was intended to signify that the research these workers were carrying out relied on people's participation in the communities where they were working, both in gathering information about the communities' problems and in implementing solutions. This was a significant departure from the way development workers typically operated as outside experts with preconceived solutions to problems as they understood them and predetermined social science-based methodologies. It constituted a paradigm shift in their understanding of the research process involving local problems and requiring local solutions; the new terminology emphasized this shift.

As far as I know, Kurt Lewin's earlier formulation on action research was not a conscious part of the thinking that led to this new paradigm (Hall, 1998), despite the fact that there is a fair amount of overlap with it, as will be seen later on in this article and in other articles in this issue, especially in the previous one by Linda Dickens and Karen Watkins. This probably accounts in part for the absence of the word 'action' from the term 'participatory research'. Clearly, though, even if people's participation is what we want to highlight, 'participatory action research' would more accurately capture the activities that make up this breed of action-oriented research,

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since action is a key ingredient in it. In fact, in Latin America, where people's involvement receives a high degree of emphasis, sometimes the preferred term in Spanish is 'investigacion accion participativa', or participatory action research (Fals Borda, 1985; Fals Borda and Rahman, 1991; Salazar, 1992). Nevertheless, the term 'participatory research', minus the word 'action', has come to represent the so-called Southern perspective on action-oriented research in many circles (Callaway, 1981; *Convergence*, 1981, 1988; Brandão, 1981; Hall et al., 1982; International Council on Adult Education, 1982; Maguire, 1987; de Souza, 1988; *The American Sociologist*, 1992, 1993; Park, 1993; Park et al., 1993; Tandon, 1993; Williams, 1996; Selener, 1997).

There is another reason for using the term 'participatory research'. Whyte has popularized the notion of 'participatory action research' in organizational settings (Whyte, 1991). But in his practice and that of his associates at Cornell and elsewhere, which is prototypically situated in corporate and administrative settings, the professional researcher, usually working as a consultant, takes a rather strong hand in initiating and carrying out the project, with the workers often playing a minor role in the research and implementation process. Since in the minds of many 'participatory action research' has come to represent this form of action-oriented research, those of us who are interested in giving voice to the rank and file have preferred 'participatory research', omitting the word 'action', to call attention to the difference in emphasis with the Whytean practice.

I have deliberately adopted here an awkward expression, 'action-oriented research', to refer to knowledge-generating activities that result in action, instead of calling them simply 'action research' because of the following considerations. A perusal of the articles in this issue makes it clear that action is a constant refrain in all the activities represented. In action learning, action serves as the experiential basis for learning; in action science, action in the form of changes in practice is the end sought, although the emphasis is on the mode of communication that would make this possible; and in collaborative inquiry, the action component is muted but nevertheless present as a potential outcome. Action is definitely in the foreground in action research and developmental action research as well as in participatory research, since the research activities in these disciplines are driven by action as an end product in the short or long run. In this sense, these are all forms of action research. But there are noticeable differences among them; for some there is little participation on the part of the people who are to benefit from the process, while for others it is a defining feature. Action research in the hands of some refers to practices that veer toward a top-down, expert-directed model. It is perhaps fair to say that the term 'action research' designates a specific tradition, as its separate treatment here symbolizes, usually associated with organizational and administrative application. Clearly we are in need of a term embracing all forms of research in which action plays a role. I have adopted 'action-oriented research' to refer to all six forms of learning and research activities discussed in this issue and to all such endeavours in general where action figures as an integral feature of the core research activity.

Preliminary Distinctions

Participatory research is aimed at both generating knowledge and producing action, in common with other forms of action-oriented research which, unlike academic

research, is driven by practical outcomes rather than theoretical understanding. There is a general understanding in action-oriented research that the people who are to benefit from the research should participate in the research process. While this feature is understood differently and is markedly attenuated in some instances, participatory research puts a high premium on it with its insistence that the people themselves own the entire process from beginning to end. In this respect, participatory research contains elements of collaborative research (Reason, 1988; Heron, 1996; see also Reason, in this issue), which can be characterized as people learning with and from each other about themselves and, secondarily, about the social conditions affecting them.

Participatory research, however, most clearly distinguishes itself from other forms of action-related research by the fact that it issues from the felt needs of a community. What motivates the initiation of participatory research is the needs of a community for ameliorating the living conditions of the people. By contrast, in action-oriented research that takes place in organizational settings, the motivation for research and action derives from the need to improve the workings of an organization, with the ultimate objectives of ensuring its survival and profitability. It may be that these objectives can best be met by improving the working conditions of the employees and allowing them a degree of autonomy in the way they go about doing their work. This is certainly the assumption underlying the thinking about much of action-oriented research being practised and written about in organizational contexts. However, in these applications the workers' welfare must always be subservient to that of the organization. Even research aimed at improving their working conditions must be defined and delimited in terms of organizational needs. The organizational context must come first. Participatory research is not constrained in this way. This may also be true of collaborative research when it takes place in a non-organizational framework, but it distinguishes itself from participatory research by virtue of the fact that it does not necessarily involve a community.

People's Research

The first tenet of participatory research is that it begins with people's problems. It is the people's needs arising in the course of daily living that call for investigation and action. Communities involved in participatory research more often than not suffer from problems ranging from material deprivations, to deteriorating social relations, to political disenfranchisement. They are disempowered in diverse ways and their needs are often urgent. Under these conditions people get together to deal with the problems with research and action. For instance, one such effort involved health hazards created by a toxic waste dump in the mountain community of Bumpass Cove in Tennessee (Phenix, 1985; Merrifield, 1993). Another example is the case of Montana farmers who started a organic farming movement through their organized research efforts (Rusmore, 1996). The case of the citizen mobilization after the 1967 floods in Appalachia which led to tax reform movements in local communities provides yet another example. This effort was made possible through a massive participatory research project involving residents and community organizations. In these instances, the initiative came from the people themselves.

Participatory research, however, does not easily ignite in spontaneous combustion

regardless of how dire people's objective conditions are. Indeed, the very state of deprivation, which produces a kind of helplessness, tends to militate against this happening. Typically what is needed for the initiation of participatory research is a catalyst that makes it possible for the community to come together and begin to deal with their problems in an organized way. The person who acts in this capacity is a participatory researcher who is, ideally, familiar with the situation in the community, identifies with the plight of the community, and is committed to working toward improvement of the conditions. He or she may be an outsider in the sense of not living in the community or enduring its daily problems. But he or she must become a member of the community at least in spirit by becoming acquainted with the life of the community and gaining its trust. What a participatory researcher does is not so much a job as a vocation. This is what sets the participatory researcher apart from other practitioners of action-oriented research who typically act in a job-related capacity.

Participatory research cannot be motivated by an outside expert's sense of what ails the community and the accompanying offer of help, however well-intentioned such intervention. For this reason, the participatory researcher's first task is to assess the community's needs that are keenly felt but not articulated in an organized voice through available sources of information and informal channels. He or she then begins to explore the community interest in engaging in research activities for dealing with the problems that surface. It is only after sufficient interest is evidenced for such activities that a participatory research project commences. It is through such a process that a group of participatory researchers engaged in a project dealing with community health problems in Mars Hill, North Carolina (Plaut et al., 1992). If, by contrast, the community has already been aroused about a problem on its own and is seeking to take a course of action, as in the examples cited earlier, and a researcher or a group of researchers join in the effort, this initial exploratory phase could be relatively straightforward. In either case, the project that unfolds in this manner is the community's, and it is the researcher who joins and participates as a partner, taking on various roles, ranging from community organizer, to facilitator of meetings, research coordinator, and resource person for technical and material assistance. This is the true meaning of 'participation' in participatory research.

Another important tenet of participatory research is that the people themselves engage in the research process to the fullest extent possible. Once a community sense has emerged about what problems should be addressed, collective decisions must be made at the outset about what research questions to raise and what methods of data collection and analysis to use. It is important for the people to be engaged in discussions dealing with these issues because they have both political and methodological implications. For instance, survey research involving questionnaires may not be compatible with the sensitivity of a community which has been 'studied to death' for years with no tangible benefits to show for it (Plaut et al., 1992). Ordinary people may not command requisite research skills or grasp methodological issues involved, but it is one of the participatory researcher's tasks to share the available options with the community, providing training if necessary, so that the people can be partners in research. If carried out with respect and trust, this collaborative approach results in research procedures that are appropriate for meeting the community's multifaceted needs, as well as satisfying methodological requirements.

It is easy to say that participatory research begins with people's problems, but it is not a simple matter to know at a glance the contours of the problem in sufficient detail to be able to address them effectively. Consequently, a large part of the research activity is devoted to the task of documenting the concrete and specific ways a problem affects people's lives for the purpose of discerning its dimensions. Analytically speaking, making a problem visible in this way is different from and prior to another function of research, which is to understand the meaning and the causes of the problem experienced. In everyday discourse these two aspects of a problem—the manifestation and the underlying factors—are often spoken about in the same breath. For instance, when asked about the problems affecting the inner city of Philadelphia, residents of the city might mention the fear they experience in living in the city. But they might also mention at the same time the violence in the streets, the drug dealing in neighbourhoods, the lack of adequate police protection, unemployment, etc., which are problems serious in themselves but are also factors underlying fear (Park, 1997c). It is important in research to distinguish the two aspects, or levels, of the problem, so that people don't jump to conclusions prematurely about contributing factors and what should be done about them. Conclusions concerning the factors underlying a problem must be based on an analysis of the evidence, which is what a systematic research procedure is designed to produce. This analytical step is an important component of participatory research in enabling citizens to engage in activities toward a satisfactory solution of the problem.

After thus defining and articulating the problem in detail, the next step in the participatory research process addresses the choice of solutions to be implemented. People involved in participatory research must conduct research into what community actions can be taken to deal with the problem, taking into account its contributing factors. They must then weigh the pros and cons of various options in terms of feasibility considerations, which would include technical and political factors. Here again, this requires systematic and disciplined deliberations, which take place in the context of participatory research.

Under the right circumstances, these investigative activities can lead to community actions, which often necessitate some political negotiations and even struggles vis-a-vis the existing power structure. The research process, however, does not end there. The participants should ideally go on to learn from what they have done by carrying out evaluation, which too is conducted according to the principles of participatory research. This provides an opportunity for the people to reflect on the process they have gone through and the results they have achieved, which in turn helps them to consolidate the knowledge and power they have gained to tackle other problems in the community. By thus sustaining the research effort past the initial action stage, the community engages in the reflection–action–reflection cycle (Freire, 1970), mediated by the production of needed knowledge.

Forms of Knowledge

Research is a systematic activity which creates knowledge for those who engage in it. In the case of conventional academic research in the social sciences, the professional researcher who controls and conducts the investigative activity learns from the

process and gains knowledge. In participatory research, by contrast, the community people who actively involve themselves in it acquire the knowledge needed to deal with the problems motivating the project. But the knowledge that results from participatory research goes beyond the technical objective of a particular problem-centred project to have implications for the life of the community and the social structure that moulds and puts constraints on individual behaviour and people's life chances (Habermas, 1987; Park, 1997a).

It is clear that the problems motivating people to investigate and take action have an obvious and often compelling technical component. That is, it is easy to conceive of them as requiring modifications and improvements in the way things are done. For example, problems with such issues as farming practice, toxic waste management, safety in the streets, and health care delivery, can readily be thought of as requiring technical solutions in both technological and social dimensions, which when appropriately applied can ameliorate the situation. The knowledge needed for this kind of solution is representational, in that its efficacy is tied to its ability to depict and explain reality faithfully, or at least adequately, to enable people to adjust to it, modify it, or ultimately control it. Empirical-analytical science as practised in the natural sciences epitomizes this form of knowledge.

Representational knowledge in this instrumental sense results from a process which reduces the domain of investigation into discrete variables which it then relates to one another in functional expressions, such as cause-and-effect relationships. Positivism has valorized this functional variety of representational knowledge to the exclusion of all other kinds of knowledge that humans are capable of, need, and use. It is easy to argue, and it is generally accepted among humanistic social scientists today, that positivism has overstated its epistemological claims and it is limited as a philosophical doctrine. But it is a mistake to equate positivism with empirical-analytical science and representational knowledge in the functional form that it generates. It is possible, and indeed sometimes desirable, to pursue this kind of representational knowledge for instrumental purposes without subscribing to the tenets of positivism. To be sure, there are methodological problems in generating the functional form of representational knowledge in the human domain, which requires an awareness of its limitations. But this does not negate its usefulness as an investigative component to be combined with the pursuit of other forms of knowledge in participatory research or in human and social inquiry in general.

One of the limitations of representational knowledge in the functional form is that it is incapable of addressing the meaning that humans attach to events and experiences as actors and partners in interactions. It is incapable of answering such lofty questions as 'What is the purpose of life?' or 'What is the meaning of community?' But it is equally limited in producing understanding between and among human beings in interaction. To produce this kind of understanding we need to bring to the cognitive task our aspirations as historical beings and our shared experiences as members of a community; we must enter into dialogue as partners with those whom we wish to understand. This is precisely what is prohibited in the canon of science for the functional form of representational knowledge under the injunction of objectivity, which is why it is incapable of generating meanings for human use.

In contrast, hermeneutics as a science of interpretation prescribes and codifies the

interpretive process which produces this kind of understanding, whether dealing with human beings or things in general, such as written texts or other human artefacts, to which we attribute meaning (Palmer, 1969; Gadamer, 1975): call the resulting knowledge interpretive. In participatory research, understanding the nature of the community's problem must include this interpretive dimension, or the resulting picture will suffer from the fallacy of misplaced concreteness. Although interpretive knowledge is different from the functional version of representational knowledge, it is still representational, in that it is a portrayal of reality in terms of the meaning that is inter-subjectively rendered. That portrayal may not take the form of measurement or quantification, but all the same it refers to an entity that is separable from us as knowers.

The interpretive form of representational knowledge gets us closer to another species of knowledge, the relational, though without becoming one with it. When we say we know someone, another human being, such as our own mother, a close friend, or a lover, the sense of knowing involved is one of acquaintance and sharing that resides in the thick of the relationship itself, not one of depicting or portraying that person as an object of scrutiny. We may, of course, also know this person in the latter sense, that is, representationally, in particular, interpretively, and this may help create relational knowledge. But relational knowledge is a distinctive form of knowing (Richards, 1998). Similarly, being in relationship with someone, that is, knowing him or her relationally, may pave the way for getting a better picture of the person representationally, or as a descriptive object. But again the one cannot be equated with the other. The phrase, 'getting to know someone', as in the famous song, 'Getting to Know You', from the musical, *The King and I*, captures the emotive moment in the process of generating this sort of knowledge. And in the Old Testament, there is the reference to David 'knowing' Bathsheba, which of course means that the two became lovers in the most intimate sense. Loving someone, then, is a form of knowing, as are other varieties of relationship, such as friendship, that are experienced with lesser intensity. Where representational knowledge separates the knower and the known, acting merely as a window that allows one to get a glimpse of the other, the relational unites the two in a union. In relational knowledge, the parties involved are both the knower and the known. Put another way, while the former is a means which allows the knower to describe the known, the latter is an end itself in which the knower and the known partake together.

Relational knowledge, experienced in various degrees, is the foundation of community life, and participatory research is a means of augmenting that knowledge deliberately. Participatory research typically does not pursue this kind of knowledge explicitly, partly because it is not considered knowledge in contemporary western epistemology, and partly because the importance of community for human well-being is all but neglected in this technological era. Nevertheless, a close study of the participatory research experiences clearly shows that the strengthening of the community ties, or the generation of relational knowledge in the language of this article, is a noticeable outcome that people themselves value (Lynd, 1992; Plaut et al., 1992; Rusmore, 1996). For example, in a recent conversation with a school-teacher in Cuba who had conducted a participatory research project in the community with her students, she spontaneously stated that the students 'came to love the community more' as a result of their involvement in the project.

Strengthening community ties through relational knowledge is, of course, a worthy goal in itself. But it also helps to create other forms of knowledge as well. Learning is a social activity, and people who are in relationships, or connected through relational knowledge, often find it easier to gain representational knowledge and to apprehend it more profoundly. That the people engaged in research be connected to one another through relational knowledge is especially important for generating interpretive knowledge. The reason is that much of the information about what goes on in the community is generated by methods involving some form of human interaction, including dialogue, which requires that people open up and speak frankly and authentically. Of the many characteristics associated with relational knowledge that are relevant here, such as sharing, caring, togetherness, and commitment, trust is the one that makes the representational knowledge generated through these methods adequate and, in the final analysis, valid. Where there is no trust emanating from relational knowledge, the picture of the community situation that people gain from their investigation is a mere shadow of the reality. There is similar interconnectedness between relational knowledge and another cognitive form, reflective knowledge, to which I now turn.

Participatory research is motivated by action and ends with action. The motive force that lies behind this activity is a vision of what ought to be; knowledge of what is right and wrong from the point of view of human values. The epistemological sense involved here is clearly different from knowing an object representationally or knowing a person relationally. It has to do with knowing the normative states in the social, economic and political realms which people understand as human entitlements. It is this knowledge which, when put in juxtaposition with the conditions of wants prevailing in the community, acts as a goad for people to engage in activities aimed at social change, including participatory research. But it is not a question of personal likes and dislikes, cultural biases, innate good sense, or divinely ordained edicts, but rather something that results from human reflections carried out with rational deliberation in what Habermas calls the ideal speech situation (Habermas, 1970). It is very much a human achievement embedded in historical contexts. I refer to what results from such deliberative efforts as reflective knowledge to relate this concept to Habermas's understanding of critical and communicative rationality in which reflection plays a key role (Habermas, 1971, 1973, 1993). Critical consciousness or consciousness raising is part of it, but it goes beyond critical analysis to embrace a moral dimension; it is better captured by the Freirean term conscientization, connoting both consciousness and conscience (Freire, 1970).

Reflective knowledge is a form of cognition which instils conviction in the knower, and the courage to go with it, and commits him or her to action. It is bound up with action in another way; it gets articulated and grows in strength as people get involved with action in concrete situations, which is an instance of action learning. The tradition of critical social science, going back to Marx and including the critical theory of the Frankfurt School, embodies this spirit of pursuing reflective knowledge within an epistemological framework, containing a normative element, that expands on the positivist understanding of what constitutes knowledge (Habermas, 1971, 1973, 1981, 1987, 1993). The second wave of the feminist movement that started flourishing roughly in the 1960s and gave birth to the feminist research tradition embodies reflective knowledge.

Table 1 Forms of knowledge

	Representational knowledge		Relational knowledge	Reflective knowledge
	Functional	Interpretive		
Content	Explanation	Understanding	Relationship	Values
Process	Reductive analysis	Interpretation	Interaction	Reflection/dialogue
Logic	Separation (subject/object)	Merging	Union	Critical engagement
Use	Control predict adapt prevent produce	Meaning	Community	Emancipation autonomy responsibility
Prototype	Natural sciences	Biblical studies	Intimacy	Critical theory, feminist research

The three forms of knowledge—representational (with the functional and interpretive subtypes), relational, and reflective—are presented schematically in Table 1.

Because reflective knowledge issues from people's deliberations concerning questions that are of critical importance to them, it presupposes a community in which discussions take place in communication that is free, open and sincere, unhampered by oppressive power relations, hidden agendas and bad faith, that is, an ideal speech situation. This goal makes reflective knowledge possible but is, in reality, only partially realizable. An analogous situation is the objectivity standards set for empirical-analytical science, which, though not fully realizable in practice, nevertheless act as successful guideposts for the conduct of science. In any event, this communicative ideal suggests that in order for people to generate valid reflective knowledge they must be connected to one another through relational knowledge, which creates an interdependence between the two forms of knowledge. More generally, all three forms of knowledge reinforce and interact with one another, one acting as a precondition or a stimulus for the other, and vice versa, because all forms of living knowledge are inherently interconnected. The analytical distinctions among forms of knowledge that I have made here are intended to shed light on important features of participatory research. I want to stress, however, that in the course of a successful participatory research project people typically gain the three forms of knowledge simultaneously in complex cognitive acts, without regard to analytical labels.

By postulating three forms of knowledge—representational, relational, and reflective—we are able to pursue them with the methodological rigour demanded of research. There is little argument among people who work in communities about the importance of cultivating community ties and raising people's critical consciousness, as well as gaining technical competence, in dealing with problems in the community. But if we think only of technical solutions as requiring knowledge worthy of research endeavours, we run the risk of relegating the other human goals

having to do with community-building and pursuing social justice to the happenstance of casual activities that are unsystematic and even considered irrational. Instead, by putting these human goals pursued by participatory research in an epistemological framework, we can bring methodological procedures to their realization, with rigour comparable to the traditional methodologies for representational knowledge.

No codified methodological procedures applicable to relational and reflective knowledge have yet been developed that are analogous to those dealing with the representational, especially the functional form, thanks to the centuries-old cultural prejudice embedded in modern science which has deliberately recognized only one form of knowledge. But ordinary people in everyday practice continue to create and use these forms of knowledge, which are unrecognized by the philosophy of science. This is where people's knowledge comes to the fore in participatory research. Participatory research is based on the knowledge that people have about social conditions that is different from, and often better than, that of outside experts. This is an insight that has been validated over and over again in participatory research with respect to representational knowledge (Fals Borda, 1985). But when it comes to the other two forms of knowledge, only people themselves can create them, because, by definition, the relational resides in their interactions with one another and the reflective derives from group deliberations they engage in in various forums as members of a community. It is on the basis of people's practice, then, that we can develop codified methodologies for what might be called a science of relational and reflective knowledge, respectively. Participatory research is people's action research in this sense.

Orders of Learning and Change

Participatory research aims at dealing with problems that people face in the community, but the solutions it seeks often lead to the questioning of the very premises under which the problems are posed. This process, which involves what Freire has called problematizing as opposed to problem-solving (Freire, 1970), entails examining and coming to understand the ways in which prevailing social structures, value systems and ideologies produce the effects that people suffer from in their daily lives. It is second-order learning, or double-loop learning in the language of action science, which makes possible second-order change (Bateson, 1972; Watzlawick et al., 1974; Bartunek and Moch, 1987; Argyris et al., 1990; McWhinney, 1992). Often, improving the techniques of addressing the problem without changing the premises and the structures underlying the existing approach—characteristic of learning and change at the first-order level—runs into limits of efficacy and the problem continues to fester, if not worsen. For example, it is clear that the current approach to eradicating the use of such drugs as marijuana, cocaine and heroin through legal and police methods in the United States has not succeeded, despite the imposition of ever-increasing penal sanctions and police surveillance, which are instances of first-order change. If anything, these measures have contributed to the spawning of other social problems, such as street crime, gang warfare, police corruption, and prison over-crowding, which disproportionately affect members of the minority communities. What is needed, instead, is a re-

examination of the central assumptions and the legal statutes that lie behind the current drug policies, the courage to challenge the status quo, and the commitment to take necessary actions—that is, second-order learning associated with reflective knowledge. In this vein, addressing the problem of fear in the streets alluded to earlier should logically lead to a ladder of escalating reflection, linking it to street crime, drug problems, drug policies, political-economic structures, and eventually to the ideological superstructure.

There are, of course, financial, social and political obstacles to bringing a participatory research project to this level in practice, and this particular scenario is not likely to be played out in the current political climate. But participatory research holds the promise that citizens have a right to engage in activities to overcome these obstacles and to produce what would be considered revolutionary changes (de Silva et al., 1982). And there are examples of participatory research that prefigure movements in this direction (Plaut et al., 1992; Gaventa and Horton, 1981). It may be pointed out in this connection that other forms of action-oriented research, especially those espousing emancipatory goals, may strive for similar transformative results. But it is difficult to realize these goals in organizational settings, such as business corporations, with constraints imposed by literal and figurative bottom-line considerations that cannot be challenged without violating the organizational purpose itself. As a consequence, the potential for producing second-order learning and reflective knowledge in these settings is accordingly circumscribed.

When successive productions of second-order level reflective knowledge are linked and sustained, it results in third-order learning and change. There are different ways of understanding this concept (Bateson, 1972; Watzlawick et al., 1974; Bartunek and Mock, 1987; McWhinney, 1992), which I will not detail here. However, Kuhn's concept of the structure of scientific revolutions which explains how natural sciences have gone through radical changes with paradigm shifts over time (Kuhn, 1992) provides a useful model for understanding third-order learning and change in relation to participatory research. First, equate the paradigm shift involved in going from 'normal' science to 'revolutionary' science in the Kuhnian framework to second-order learning and change. Then the Kuhnian model makes it possible to think of the problems that people experience and identify in participatory research analogously to the anomalies that lead to transformation at the second-order level, or scientific revolution.

The model also helps with the understanding of how participatory research can continue to generate paradigm shifts as a self-renewing activity (Park, 1992, 1997b). Revolution has been a recurrent phenomenon in the history of science (Kuhn, 1992; Bernal, 1965). Indeed, the dynamism of science lies in its ability to engender one second-order change after another, which taken as a whole constitutes third-order learning and change. Unlike, however, other conceptions of third-order learning and change that presuppose the intervention of an outside agent (Bartunek and Moch, 1987), the Kuhnian model is predicated on the fact that science evolves through the activities of participating scientists themselves, who follow its internal logic and pursue its embedded values. For this reason, the Kuhnian model makes a particularly apt framework for understanding the dynamics of participatory research, since the latter also unfolds as people seek solutions to their own problems. Science, of course, operates within social and cultural conditions, which now encourage and now constrain the workings of science (Bernal, 1965), as is the case with participatory

research. But these are not extraneous factors; they are built into the logic of scientific development itself.

What is the dynamic force sustaining third-order learning and change? For science, it is the values imbedded in its structure and culture, which Kuhn identifies as *fruitfulness, accuracy, consistency, simplicity* and *scope* (Hoyningen-Huene, 1993). These are characteristics that pertain to viable representational knowledge, which constitutes the only form of knowledge modern science recognizes. Scientists are socialized to honour and pursue these values in their work, and the scientific culture within which they operate constantly sanctions their output in terms of these criteria through institutional mechanisms. It is the application of these criteria to the existing paradigm that leads to the detection of anomalies, which eventually brings about a paradigm shift, or scientific revolution. The same values, albeit in attenuated forms, function similarly in participatory research to the extent that it too must generate representational knowledge to be technically effective.

But participatory research also generates relational and reflective knowledge, which in turn have their own sets of values that act as motive forces for the re-examination and renewal of existing knowledge through second- and third-order learning and change. For the relational, the more important of the values that propel this process are *caring, sincerity* and *trust*, and for the reflective, *autonomy* and *responsibility*. It is through the recurring realignment of the relationships in the community using the criteria of caring, sincerity and trust, that people succeed in renewing and maintaining a viable community. And similarly, it is through adhering to the values of autonomy and responsibility that communities keep the pursuit of social justice alive and vibrant.

Conclusion

Modern science's initial success in revolutionizing the Aristotelian cosmology came about as a result of a major paradigm shift involving changes in the political economy and cultural values, as well as technological innovations. Since then, science has been able to produce successive revolutions because it operates within cultural and institutional frameworks that support the continuous questioning of the premises underlying prevailing practices. These revolutions have been confined to only one realm of human knowledge, the representational. Nevertheless, there are lessons to be drawn from this history. First, if we are to generate all three forms of knowledge that we need as human beings, we must expand our definition of what constitutes valuable knowledge that can be pursued with rigour. Second, this kind of change will constitute a major epistemological paradigm shift that will play itself out in the socio-cultural-political battleground. Third, in order to sustain the momentum of generating knowledge in this expanded sense, concerted efforts must be made to overcome the opposition from the established canon and to provide supportive institutional structures. Participatory research, or people's action research, as outlined in this article, represents such an epistemological paradigm shift, which will prevail only with sustained collective efforts that will in effect constitute a major social movement.

Appendix: An Approach to the Common Case*

This case illustrates the difficulties involved in pursuing the emancipatory goal of action-oriented research within a business organization that I alluded to in the preceding text and presents a dilemma for a participatory researcher. First, the problem set for the employees to solve did not originate with them but rather was mandated by the higher-ups in the organization. Second, the manager, who passed on this mandate through his next-in-line (team leader), did not become part of the project—due to not involving himself in the team-building process—and harboured outcome expectations over-riding the espoused goal of 'empowerment and self-directed work teams'. He had a hidden agenda, which may have been that of the organization as well, i.e. 'quality improvement to cut down on costs'. Third, if a participatory researcher were to get involved with this project, he or she would be hired by the company hierarchy and held accountable to it in terms of its expected outcome. This would be at odds with his or her commitment to work with the problems that the employees themselves experience in improving their lot, which may or may not be in line with the company's understanding of what needs to be done for its effective functioning and profitability.

These conditions present a formidable challenge to a potential participatory researcher. A project that evolves under these circumstances would not be participatory research in the strict sense of the word because of the organizational constraints being imposed; it would be more like the Whytean participatory action research discussed in the article. Nevertheless, it would be worthwhile pursuing it for two related reasons. One is that, if successful, it would be emancipatory for the participants involved. The other is that to the extent that the project leads to changes in the way employees feel and act through empowerment, this effect has the potential of being carried over into their interactions outside the organization, in their daily personal relations in the community. That is, it has social change implications that go beyond the confines of the organization.

Assuming that the project will be carried out by a team of participatory researchers, the first thing that they have to do is to gain a clear understanding from the management that the project is to involve all stakeholders who are available as potential participants in the project. The management must also commit itself to honouring the process and the product of empowerment.

On the basis of such an agreement, the team will then proceed to get acquainted with the organizational structure, culture, and folkways through ethnographically sensitive fieldwork intended to take the pulse of the organization. In this process, the researchers will also begin to get a sense of what aspirations and problems different stakeholders have and get a buy-in from them. This is the preliminary investigative phase which precedes the full-court involvement of the organizational members as participants.

This will pave the way for a more central phase of participatory research. In this second phase, it is helpful for the stakeholder participants to get together in one place over a period of a few days to share their experiences in the organization and to air their views on what should be done. This could take the form of a search conference modelled after Weisbord (1992), Weisbord and Janoff (1966), Emery (Emery and Purser, 1996), Axelrod (1992), or some variant thereof. Such an event is a collective research forum from which emerge contours of problems to be investigated more in detail at a later phase. In this forum, learning takes place in all three forms of

* For the common case, see Preface by Joe Raelin, this issue, pp. 115–25.

knowledge through public dialogue. It is an organization-wide exercise in empowerment.

This should lead to plans to carry out research activities with more specific focus in different areas of concern with the participation of relevant stakeholders. It is through such a process that the kind of team that is referred to in the common case should be formed, and the manager should work in close coordination with it, if not being part of it. The resulting teams then continue the research activity that is suggested by the findings of the search conference. This constitutes the third phase.

A research team thus formed should deliberate the issues that its members choose to work on among themselves using relevant research tools, of which dialogue is a key ingredient. But the management must also fully cooperate with it in regard to organizational information that the team needs in its research work. This is essential if the team is to feel fully empowered and claim the ownership of the project.

The resulting action recommendations should be collectively arrived at through a process in which the management is continuously informed and, as a consequence, should not come as a surprise to the authority figure who has the power to sanction them after the fact. And the team must be authorized to carry out the recommended actions in accordance with the commitment the management made at the beginning of the project.

The actions implemented through this process, however, are not to be considered final. The team must next bring evaluation to bear on them to see how well they are meeting the demands of the situation and to make necessary adjustments and modifications. This also takes the form of participatory research involving all the stakeholders. It provides an opportunity for the participants to reflect on the results achieved and to engage in another cycle of research and action. It is these repeated cycles of reflection and action, which characterize participatory research, that generate second- and third-order learning and change.

Participatory research is a collective activity in which the participants address problems that affect the group as a whole, deliberate the causes, meaning and resolution of the problems in discursive communication, and come up with team actions. This contrasts with the individualistic solution the team worked out in the common case. It is the group nature of participatory research that produces relational and reflective knowledge, in addition to the representational. The meaning of empowerment takes on an added feature in the expanded epistemological framework that informs participatory research; it includes the capacity for community formation and higher-order learning/change through discursive reflection, as well as technical mastery. From the point of view of a participatory researcher, it is this potential for helping the employees gain such multifaceted capacity that they can carry with them to their lifeworld outside the organization that justifies his or her involvement in an organization-based project.

The primary task for the participatory researcher in this situation is to negotiate at the outset with the management to make it possible to carry out the project under conditions that will not compromise the emancipatory goal of participatory research while satisfying the organizational needs. This must then be followed up with continuing efforts to ensure that the process unfolds as close to the tenets of participatory research as possible under organizational constraints. And, at the same time, the participatory researcher must play an active role in creating and maintaining a collaborative atmosphere in which all stakeholders can participate in the project in good faith and with mutual trust.

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The Many Faces of Action Learning

Abstract *Action Learning draws its roots from different philosophies of learning and change, which in turn, influence its design and practice. This article identifies common factors and differences among three different 'schools' of practice (Scientific, Experiential and Critical Reflection). It then distinguishes Action Learning from the other action approaches in this volume.*

A colleague who participated in a recent conference—advertised as a showcase of Action Learning—commented that 'the term itself is in danger of becoming a buzz word that means everything and thus nothing' (Yorks, 1997). The programs presented bore little resemblance to one another, or to Action Learning as defined by its originators, as we demonstrate in this article. For example, in one program a bank involved learners actively in their training through role plays, simulations and other experiential learning activities. In a utility, staff of a reorganized training department did performance consulting, coaching and problem solving instead of offering courses, and called this Action Learning. In a third example, an oil company ran a workshop for intact teams in which participants applied Senge's (1990) five disciplines (personal mastery, shared vision, systems thinking, mental models and team learning) to back-home problems. A fourth example involved several companies that designed training around physical activities, commonly called outward bound experiences, such as white water rafting. Finally, an executive education course included a project component that it then called Action Learning.

Scholars might not agree fully on the nature of Action Learning, but they probably would be united in their judgment that none of the above programs truly qualifies as such if these descriptions are fully accurate. There are commonalities in Action Learning, as illustrated in Table 1 of this issue's Preface. None the less, we also find important differences in the way in which Action Learning is implemented. In this article, we set out a definition that seems common to most people who espouse it. We then describe three somewhat different faces of Action Learning in practice (O'Neil,

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1999). We discuss differences in the approach each school might take to the common case that has been laid out on p. 122 of the Preface to this volume. We compare Action Learning to other action technologies, and conclude with some perspectives on its value in relationship to them.

Defining Action Learning: Three Schools of Practice

'One of the problems of describing Action Learning is that it means different things to different people' (Weinstein, 1995: 32). The very simplicity of its core ideas leaves it open to many interpretations. Revans, often considered the 'father' of Action Learning, typically decries models that stray too far from his conceptualization, but healthy experimentation and critique help it grow. None the less, without some consensus on key features, it is difficult to compare it to other action technologies. What is its essence?

Revans (1982), Pedler (1997) and Mumford (1997) have compiled volumes that speak authoritatively to cumulative experience with Action Learning. Revans defined it as follows:

> Action learning is a means of development, intellectual, emotional or physical that requires its subjects, through responsible involvement in some real, complex and stressful problem, to achieve intended change to improve their observable behavior henceforth in the problem field. (Revans, 1982: 626–7)

Pedler's (1991) definition is often referenced:

> Action learning is an approach to the development of people in organizations which takes the task as the vehicle for learning. It is based on the premise that there is no learning without action and no sober and deliberate action without learning . . . The method . . . has three main components—people, who accept the responsibility for taking action on a particular issue; problems, or the tasks that people set themselves; and a set of six or so colleagues who support and challenge each other to make progress on problems. (Pedler, 1991: xxii–xxiii)

Despite agreement about core features, we find that there are different schools of thought on the practice of Action Learning. One way of explaining these variations is through a look at the theoretical underpinnings that are either explicitly advocated or implicitly reflected in implementation. O'Neil (1999) proposes four such schools of thought based on her review of the literature, and on interviews with practitioners in the United States, England and Sweden: Scientific, Experiential, Critical Reflection and Tacit. In this article, we discuss three of these schools that we find relevant to the common case laid out on p. 122 of the Preface.

We have eliminated the Tacit School in our discussion of responses to the common case. In the Tacit School, people are expected to learn incidentally when they work on real problems. GE's programs are representative of this school of thought (Dotlich and Noel, 1998). Learning from experience is not as intentionally designed into the program, as is the case for the other three schools. By contrast, the other three schools typically advocate the use of a Learning Coach and intentional use of strategies to help people to learn from their project work.

We use the typology in this chapter (Table 1) to describe alternative perspectives

Table 1 Theoretical schools of Action Learning

Category of analysis	Scientific School	Experiential School	Critical Reflection School
Theory	Scientific method	Experiential learning	Critical reflection
Interpreters/ advocates	Revans (1978, 1981, 1982)	McGill & Beaty (1992); Mumford (1989)	Marsick (1990); Pedler (1991)
Learning Coach	(1)	X	X
Reflection	X	X	X
Critical reflection	Not as evident	Not as evident	X
Teams	X	X	X
Real work for project	X	X	X
Focus on team process	(2)	X	X
Questioning insight	X	X	X
Programmed knowledge	(3)	X	X
Just in time learning	X	X	X
Individual problem	X	X	(4)
Team problem	Not as evident	X	X

Notes

(1) 'there is a role for a supernumerary (set advisor) in the early days of the set, to help the five or so fellows find their feet in this somewhat artificial venture, by encouraging them to exchange their experiences at the periodic meetings in accordance with an intelligible programme' (Revans, 1978).

(2) Revans (1978) explicitly says that Action Learning 'is not group dynamics', but also refers to a need for participants to be involved in the 'collective social process of the set'.

(3) 'this does not imply that Action Learning rejects all formal instruction; it merely recognises that, however necessary such instruction may be, it is by no means sufficient' (Revans, 1978).

(4) Participants may have individual projects, but group or team projects is the norm (O'Neil and Marsick, 1994; Pedler, 1996).

on Action Learning, but it is wise to keep in mind that these schools do not 'officially' exist in practice. O'Neil (in progress) has created this typology to contrast similarities and differences among the 'faces' of Action Learning, and to build theory about its implementation.

'Scientific' School of Action Learning

O'Neil identifies those whose work is based on Revans (1982) as the Scientific School of Action Learning. Probably because Revans began his professional career as a physicist, he based his thinking on the scientific method. He conceptualized Action Learning as a model of problem solving in three stages which he called Systems Alpha, Beta and Gamma (Sutton, 1997). System Alpha is analogous to a situation analysis. The learners must understand the system within which the problem resides, which involves examining: the nature of the value system of the person and system as a whole; the external system which affects the decision being made; and the internal system in which the manager works.

System Alpha involves the structured interplay of these three components in

problem definition (Revans, 1970, 1981, 1982; MacNamara and Weekes, 1982). System Alpha overlaps with System Beta, which entails the negotiation and implementation of a solution. System Beta involves the following stages: survey, hypothesis, experiment, audit, and review (Revans, 1970, 1982, 1987). Revans (1978) equates the steps of System Beta with the learning process—'recognition, prima facie acceptance, rehearsal, verification, conviction' (p. 14).

System Gamma refers to the mental pre-disposition that the manager brings to the situation. The manager is continually checking his expectations of what should be happening against what is actually happening. Insofar as he is able to identify the discrepancies between what he first took to be the condition and what experience suggests that the condition actually was, and insofar as he is able to change his perception accordingly, we may say that the manager is learning (Revans, 1970: 161).

In practice, this form of Action Learning shares many features in common with action research, but it is intentionally biased toward learning. Questioning is central to Revans' (1982, 1989) learning theory, which he formulates as Learning = Programmed knowledge from the past + Questioning insight (L = P + Q). Questioning insight occurs when people question their direct experience (Morris, 1991). Revans (1989) describes it as 'intuition, things crossing the mind, insight' (p. 102). Programmed knowledge is 'expert knowledge, knowledge in books, what we are told to do because that is how it has been done for decades' (Weinstein, 1995: 44). Revans holds that the key to learning is in finding the right question to ask. Questions that help people get started along this path include the following: 'What are we trying to do? What is stopping us from doing it? What can we do about it?' (Revans, 1978: 17).

'Experiential' School of Action Learning

Many proponents of Action Learning see Kolb's experiential learning cycle as its theoretical base (Lessem, 1991; McGill and Beaty, 1992; McLaughlin and Thorpe, 1993; Mumford, 1994). O'Neil identifies these advocates as the Experiential School of Action Learning. Despite the views held by the proponents of this school of thought, Revans disagrees with the choice of Kolb as a theory base. When asked, 'Does the ubiquitous Kolbian cycle accurately reflect your view on Action Learning?', Revans (1995) replied, 'No, it most certainly does not' and went on to speak about his adaptation of Roger Bacon's work to produce System Beta (p. 7).

In Kolb's (1984) experiential learning cycle, action, reflection, theory and practice are of equal importance. In Action Learning, for proponents of this school, the starting point for learning is action (McLaughlin and Thorpe, 1993). Members reflect on experience with the support of others, followed by further action, in order to change—rather than simply repeat—previous patterns. Action Learning enables learning in each stage of the experiential learning cycle (Bunning, 1992; McGill and Beaty, 1992).

Members in the Experiential School typically use a design that 'ensure[s] that the amount of attention given to learning is higher than it is in the normal accidental and informal task and learning experience' (Mumford, 1991: 9). Learning is the reason for the Action Learning meeting. Legitimacy and formalization of events over an extended period of time with consistent team membership—as well as explicit

discussion of learning processes and achievements—serve to reinforce the learning intention (McGill and Beaty, 1992; Mumford, 1991). Action Learning programs help create the ability to learn how to learn in a number of ways. For example, time is scheduled for learning reviews at each meeting. Members review the projects, their own learning process, and relevant issues that emerge from group dynamics and the work of others. Members might keep learning logs, or negotiate personal development plans and learning agreements (Mumford, 1996).

Proponents of the Experiential School also agree with Revans' L = P + Q equation (Inglis, 1994; McGill and Beaty, 1992; Mumford, 1995; Weinstein, 1995) and, in some cases, have developed it further. 'Q' and 'P' are mutually dependent parts of an Action Learning program. Inglis (1994) adds 'Implementation' (I) to Revans' equation (L = P + Q + I) because action must be taken, not just recommended. Mumford sees more than one opportunity for questioning, and therefore, has revised the equation: Q(1) + P + Q(2) = L. Mumford (1995) explains his thinking as follows: 'The most effective learning is driven by the need to resolve a managerial problem Q(1). This leads to the acquisition of relevant knowledge (P)—which then stimulates the identification of further management opportunities Q(2)' (p. 40).

'Critical Reflection' School of Action Learning

The Critical Reflection School of Action Learning holds that the kind of reflection found in the Experiential School is useful, but not sufficient. They believe that participants also need to reflect on the assumptions and beliefs that shape practice. To explain critical reflection, we draw on a definition proposed by Jack Mezirow (1990, 1991), that is, 'assessment of the validity of the presuppositions of one's meaning perspectives, and examination of their sources and consequences' (1990: xvi).

Taking time to reflect can be powerful, and critical reflection can be more powerful because attention is directed to the root of the problem (O'Neil and Marsick, 1994). Although it takes place less frequently, Mezirow points out that critical reflection can transform perspectives. People recognize that their perceptions may be flawed because they are filtered through unexamined views, beliefs, attitudes and feelings inherited from one's family, school and society. Flawed perceptions distort one's understanding of problems and situations.

Practitioners in this school describe the process and results of critical thinking in different ways. Weinstein (1995) talks about participants examining what they believe and value, and how they are changing and moving, and gaining a better understanding of their own insights. She feels that, when critical reflection occurs, the process may be deeply disturbing for those who do not want to change existing structures, status or beliefs. Rohlin (1993) and Marsick (1990) speak of bringing real issues to the fore and subjecting them to scrutiny—allowing participants to call into question the rationale underlying their actions and to examine problems from multiple perspectives. Re-formulation of the presenting problem commonly occurs when people uncover misperceptions, norms and expectations that were often hidden (Marsick and Watkins, 1992; Pedler, 1996; Weinstein, 1995). Critical reflection can also go beyond the individual participant's underlying assumptions and can lead specifically to the examination of organizational norms.

Similarities and Differences across Different Schools of Action Learning

There appear to be two consistent elements in all three schools of thought on Action Learning, despite their differences. First, participants work on real problems that do not have clear solutions. A range of acceptable strategies might emerge, but there is no one right answer to the presenting problem. Second, participants meet, on equal terms, to report to one another and discuss their problem and progress (Revans, 1984).

Participants meet in small teams, also called sets, that typically consist of four to six members. Through social interaction, team members surface and take advantage of alternative views on their problem. Because the problem is difficult to resolve, Revans (1982) refers to group members as 'comrades in adversity'; Mumford (1996) calls them 'fellows in opportunity'. Teams always work on a problem that is based in real work. However, some programs have a significant amount of 'P' learning (Harrison and Miller, 1993); while others, considered more 'classical', have very little formal instruction (Mumford, 1989; Weinstein, 1995).

Similarities and differences in program design are identified in Table 1 of this article. Despite common features, Action Learning programs look different in their format and duration. Participants might meet one day at a time over the course of several months (McGill and Beaty, 1992; Weinstein, 1995). They might meet for several days at a time, spread out over several months (Dennis, Cederholm and Yorks, 1996; O'Neil, Arnell and Turner, 1996). And sometimes, they meet only once, but for an extended duration of several days or weeks (Noel and Charan, 1988; Dotlich and Noel, 1998).

Two features in particular differentiate the response that a Learning Coach might have to the common case laid out on p. 122 of the Preface. They are: (1) the focus of the project on either individual challenges or a common group challenge; and (2) the role of group dynamics in the life of the teams. We discuss these two features below.

Project Focus: Individual vs Team Challenge

In some program designs, participants work on individual projects and, in others, the team works as a whole on one project. Our experience suggests that, with exceptions, programs designed around individual projects are more likely to appear in England than in the United States. Both designs show up in both countries, however; and both designs can be found in other countries around the world.

In the individual project design, members divide the time among themselves, and each person is helped by the others to think differently about the situation, the proposed solutions, and the results from any action that is taken. In the team project design, members work on one common problem that is owned by someone outside of the team, often a sponsor who is at a higher level in the organization. Teams often do not have the authority to themselves take action on the sponsor's problem. Members learn how to consult with their sponsors and others in the organization in order to effect change.

The choice of the right problem is critical to success in Action Learning (Lawrence, 1991). The design of the program is affected differently when the problem is a familiar or unfamiliar one, and when the team addresses the challenge

in a familiar or unfamiliar setting (Revans, 1978). Action Learning problems are always based on real work. Other selection criteria often include (McGill and Beaty, 1992; McNulty, 1979; O'Neil and Marsick, 1994; Weinstein, 1995):

- being complex, overarching, and often cross-functional;
- involving problems for which 'different reasonable, experienced and honest men would wish to pursue different courses of action' (Revans, 1978: 11);
- being meaningful to participants.

When the focus is on individually generated problems, participants are highly motivated because they have voluntarily selected their challenges and must resolve them. In the team design, participants may not initially be that interested in the problem. However, if the project has high visibility and is strategic in nature, members can become interested in it. It also helps when members are given some choice about which team they wish to join, within a set of criteria posed to them. The criteria ensure that members have different perspectives and backgrounds, that no one who is an expert on the problem is a part of the team, and that specific business needs are met. The expert role interferes with a person's ability to think differently and with a team's ability to seek fresh solutions, given the potential for deference to an expert. When members are given choices, Coaches in the program talk with members about their decisions and may adjust the mix of people within a given team to ensure that the team meets the given criteria. Alternatively, the sponsor of the project may select team members using these criteria.

The focus on individual vs team projects also influences the relative degree of emphasis on personal development or on organizational change. Team projects often focus more on the achievement of organizational goals, although the program may also foster individual growth. By contrast, when participants have their own project, there is a greater intent of learning from the implementation for personal development (Mumford, 1989, 1991).

Role of Group Process

All schools recognize that group process is important to learning, but the schools approach its value and facilitation in different ways. The Scientific School, as represented by Revans, recognizes that learning takes place through the collective social processes of the set. Revans (1978) also speaks of the need for a 'supernumerary to help the set develop an initial trustworthy cohesion through orderly debate' (p. 13). He also says, however, that focus on group process is less important than the focus on the problem. Revans' view of group process work appears to be similar to his view of programmed knowledge, that is, at times necessary, but not sufficient.

Practitioners in the Experiential and Critical Reflection Schools speak more explicitly about group process issues, for example communication, conflict, consensus building, or leadership. Groups need to work together effectively in order to be able to learn together. Learning Coaches thus help the team to develop good process skills (McGill and Beaty, 1992; Pedler, 1996; Weinstein, 1995). Their role is not the same as a process consultant, however, because they help others learn these skills as well as playing this role themselves.

Differences in the way in which group process is treated depend, as well, on whether the focus is on one team challenge or on individual problems. When working on individual problems, group dynamics show up when they affect the process of interaction and learning. In team designs, by contrast, group dynamics are not just a means to an end. Often, acquiring facility with these skills is one of the learning objectives for the program. Group dynamics are valuable outcomes because participants need skills in running meetings and in collaborative decision making.

Action Learning Responses to the Common Case

How would the different schools of Action Learning respond to the common case? In this section, we discuss these responses, which we summarize here in Table 2 by school of thought that a Learning Coach might espouse. We start this section by describing similarities and differences in the framing that Learning Coaches might bring to their interpretation of the meeting depicted on p. 122 of the Preface to this volume. We follow by looking at the possible actions that Learning Coaches might take with an Action Learning team before, during, or after a meeting such as this one. In the common case, the team meets for the first time with the manager who

Table 2 Responses to the hypothetical case by different schools of Action Learning

Point of comparison	Scientific school	Experiential School	Critical Reflection School
Framing of the encounter by Learning Coach	Grist for the mill of situation analysis	Opportunity to learn from a mistake and grow personally in choices and skills	Focus on deep values and beliefs in individuals and system
Interventions with the team before the team meeting	Reflect on steps he saw team take and suggest they look at gaps or needed data	Reflect on situation; encourage action to test understanding with manager; plan and role play	Help probe organizational assumptions; encourage questions regarding empowerment; plan and role play
Interventions with the team during the team meeting	(1) No intervention (2) Ask the manager to join team in situation analysis	(1) No intervention (2) Ask everyone to think together about situation so they can learn from this	(1) No intervention (2) Put difficult issues on table; raise questions about system; share views
Interventions with the team and/or system after the team meeting	Re-frame the problem and consider next steps for data collection in light of what was learned	Examine behavior and implications for personal growth and for understanding system; re-frame the problem, next steps	Analyze data from team analysis of forces shaping own behavior and system's culture; re-frame problem, next steps

gave them their mandate to achieve quality and cost improvement through empowerment and self-directed teams. It has been six months since they began their work. The manager and team leader have strong differences about the team's work to date.

In this section, we describe what we think are typical responses of Learning Coaches in each school, but the reader should keep in mind that there is no standard protocol for becoming a Learning Coach. The mindsets and skills of those who take on the role of Coach are based on personal background, experience and philosophy (O'Neil, 1996). Their assumptions about learning help to determine the approach they take (Casey, 1991). Further, although training is available, there is no certification or standardized training for Learning Coaches. In fact, all schools of Action Learning resist certification. Despite differences, all proponents of Action Learning strongly believe that individuals need to develop their own theory of practice which they continually test and refine over time.

Framing the Encounter

What sense would a Learning Coach make of the hypothetical case we are analyzing? Given that everyone on this team is working on a common problem, Coaches in all schools of Action Learning are likely to look both at the task and at group process in their interpretation of the encounter. The team needs group process skills in order to develop common recommendations that they all support, and in order to support one another in their interactions with the manager who gave them their mandate. In addition, the team's mandate—exploring the value of self-directed teams—suggests that members function well as a team. Their recommendations are not likely to appear very credible if the team cannot itself function in an empowered, self-directed manner.

Learning Coaches in all Action Learning schools would suggest that team members take the lead in requesting some 'programmed knowledge' to carry out their task. For example, the team might need to learn about the nature of empowerment and self-directed work teams. They might have to gain skills to work together effectively as a team, and to function well as a task force in their organization. They might need to gain competencies as organizational change agents. Designs might vary in the degree to which the Learning Coach would actively offer to provide for this learning as opposed to allowing the team to find ways on their own to satisfy these needs.

Finally, all schools would frame this encounter as grist for the mill of learning. However, if the Scientific School was true to the Revans approach described earlier, this Coach might encourage the participants to also think of this encounter as the interaction of Systems Alpha, Beta, and Gamma.

The Experiential School might be more concerned with personal development because of a strong interest in Kolb's individual learning cycle. This Coach might focus on what individuals can learn about themselves and about how they handled themselves in the project thus far in their interactions with the manager.

The Critical Reflection School would echo the Experiential School. In addition, this Coach would help the team explore aspects of the culture that might influence the team's mandate and the likely political issues that arise, given existing patterns of authority, hierarchy and power distribution. This Coach would help team members

to identify, surface and challenge the existing assumptions of the team and the organization.

Pre-meeting Interventions

Action Learning subscribes to the notion that people learn best when they come face to face with their limitations. Learning Coaches would typically hold back on intervening until team members had struggled with their own interpretation of their manager's attitude and what this might mean for their mandate. The Coach would certainly act as a mirror in all schools in order to help the team review and interpret the experiences that they are having. However, Learning Coaches who subscribe to different schools might vary in the degree to which they asked questions of the team, and in the type of questions they raised.

Coaches in the Scientific School might go back to their starting questions. What are we really trying to do on this team? What is stopping us from reaching our goal? In what way do we think our manager is part of the problem? How does the past history of empowerment and self-direction in the organization contribute to the problem? How can we develop a better understanding of what else is going on that might bear upon the nature of the mandate we were given?

Coaches in the Experiential School might help individuals and the team reflect upon their understanding of the situation, and then find ways to inquire into the viewpoints of their manager. They would encourage the team to undertake action that would help to test their understanding in some way, then bring their experiences back to the team for further discussion, look at these in light of what they know about their mandate, and formulate proposals for next steps that they would take. Based on new insights, they would plan for the meeting with the manager and would perhaps role play ways of speaking with him or her.

Coaches in the Critical Reflection School might also take on any of the above-discussed actions. If the Coach thought that the team could handle it, he or she would also probe deeply around assumptions underlying the history and culture of the organization. Ironically, the team's mandate speaks of empowerment and self-direction, yet it is probable that few of the participants are used to bottom-up initiatives such as this one and may hold differing assumptions themselves about what is required of them. The dynamics that this team might experience in addressing this question can provide a laboratory for exploring wider issues. The Coach might encourage the team to ask questions about the organization's dynamics around empowerment, and how these are reflected within the life of the team. This Coach might also help the team plan for the meeting and role play various ways of raising questions and issues with the manager.

Interventions During the Meeting

No matter what the school of thought, Learning Coaches are not likely to intervene within the actual meeting. In this hypothetical case, the team is meeting for the first time with the manager. Hence, Coaches are more likely to observe the team's interaction and debrief it following the meeting. However, Coaches might decide to take a more active role, particularly if they think that team members and the manager could benefit from a real-time intervention. There is a political risk associated with real-time confrontation of issues. Action Learning programs help

people to learn from risk taking and errors. More learning might be gained from reflection after the meeting if risk is heightened, as long as the intervention does not do irreparable damage to the team's reputation in the manager's eyes.

If interventions are undertaken during the meeting, they might vary if this confrontation was unforeseen; or if it had been anticipated but intentionally allowed or even encouraged. Responses are likely to be highly contextualized. In general, however, the Learning Coach in the Scientific School might help members to involve the manager in some joint analysis of the situation. If the Coach did speak up in the meeting, he or she would frame the intervention in terms of direct observations, and how he or she interpreted these events. The Coach might then inquire as to whether or not others saw the situation in the same way. This would pave the way for a discussion of the different perspectives of team members and the manager in order to make sense of what had occurred in light of the team's history and mandate.

Learning Coaches in the Experiential and Critical Reflection Schools might use a similar approach to intervention, that is, use their observations as a jumping off point for discussion. However, in the Experiential School, the question for the team might be phrased more in terms of what they might all learn from the experience they had just had. This question might be offered to the team during a specific reflection period. Responses would be publicly shared in order to draw the most learning from the experience and to plan for future action.

In the Critical Reflection School, the Coach might identify what he or she felt was a potentially undiscussable issue, for example, something that no one wanted to surface for fear of repercussions. The Coach would include the manager as well as the team members in this kind of intervention. People would be helped to probe the assumptions and beliefs that underlie the situation at hand; and to look at the way in which the system has influenced the interaction of both the team and their sponsors.

Interventions After the Meeting

No matter what the school of thought on Action Learning, it is unlikely that this meeting would be the final step of the project. If it were, then questions would have to be raised about how the team reached the end of the designated period of time without having anticipated this response and taken some action in regard to it. Action Learning is predicated on a number of cycles of framing, action, reflection on action, and re-framing. In all cases, this meeting would be followed by an opportunity to examine the experience and formulate next steps.

In the Scientific School, this debriefing meeting might be part of the situation analysis. Further data might be needed in order to re-think the nature of the mandate, process, and skill set of the team, as well as the influence that the external and internal environment might have on the formulation of the problem. Both the Experiential and the Critical Reflection Schools would look at behavior in the team meeting in light of the team's experience and mandate. However, the Learning Coach in the former school might focus more on implications for personal growth and for how team members might choose to function within, or attempt to change, the system. The Learning Coach in the latter school would focus the discussion more strongly on the way in which individual and systemic beliefs shape individual behavior, the project's trajectory, and the team's focus. This Coach would help

members to identify, surface, and question many of the underlying systemic assumptions that helped to create the situation.

Comparison of Action Learning and Other Action Technologies

This example helps to illustrate some of the commonalities and differences of different schools of Action Learning. We turn now to positioning Action Learning in relationship to action research, participatory research, action science, developmental action inquiry and collaborative inquiry, using the criteria proposed by Raelin in the Preface for comparison. To prepare for this comparison, we first developed an analysis of the different schools of Action Learning using these criteria. Table 3 displays this analysis. In this section of the article, however, we focus less on differences among these schools, and more on the way they collectively compare to other action technologies. This collective comparison is summarized in Table 1 of the Preface.

All Action Learning approaches are philosophically rooted in theories of learning from experience, as practiced collaboratively with others through some form of action research. These theories, in turn, are influenced by the assumption that human beings can shape their environment, and by a belief in the value of scientific method in the pursuit of improving the human condition. The underpinnings of Action Learning are reflected in the progressive educational theories of John Dewey; and in the principles of Kurt Lewin's social psychology that are centered on the interaction of the person and the environment. However, schools might not consciously trace their roots to these influences. Both Dewey and Lewin understood that individuals learn as individuals, but that their experience is shaped and understood within social contexts. Practitioners in the Experiential Schools often trace their roots to phenomenology and humanistic psychology, while proponents of Critical Reflection are influenced, more or less consciously, by critical theorists.

With the exception of a few proponents, however—namely Revans and strong advocates of Kolb—most Action Learning practitioners draw eclectically from a variety of philosophies. The overriding value that guides the Action Learning approach, and may differentiate it from other action technologies, is a pragmatic focus on learning for the sake of more effective instrumental problem-solving.

The primary purpose of Action Learning programs is understanding and change, generally for mid-term results. Unlike training, which is designed to address specific, short-term needs, Action Learning seeks to build the capacity of individuals and systems to learn how to learn. However, its focus is instrumental, and its epistemology centers on problem solving. Most schools of Action Learning do seek to develop individuals, but Learning Coaches seldom pursue deep changes to the human psyche through clinical counselling and advice. However, Coaches might introduce change through use of instruments that alert learners to preferences and interests, for example, Learning Style profiles, personality preferences (e.g. Myers-Briggs Typology), 360 degree multi-rater performance profiles, or values inventories. Coaches typically use educational means, rather than psychological means, to develop further awareness and capacity in the intra-personal and interpersonal domains.

Coaches in the Critical Reflection School go somewhat further in that they often push for a deeper understanding of assumptions, values and beliefs that contribute

Table 3 Comparison of different schools of Action Learning

Criteria	Scientific	Experiential	Critical Reflection
Philosophical basis	Scientific method, which in turn is the basis for action research	Action research and Kolb's (1984) experiential learning theory	Action research and 'critical' humanistic orientation
Purpose	Understanding and changing self and/or system through action and reflection on action	Understanding and changing self in system through action and reflection on action	Understanding and changing belief system to transform self and/or system through action, reflection on action, and critical reflection on assumptions
Time frame of change	Mid- and somewhat long-term	Mid- and somewhat long-term	Mid- and somewhat long-term
Depth of change	Instrumental, interpersonal and sometimes systemic	Instrumental, intrapersonal and interpersonal	Instrumental, intrapersonal, interpersonal and sometimes systemic
Epistemology	Problem solving: examine and change tacit practice	Problem solving: raise awareness and develop capacity to change tacit practice	Problem framing/re-framing: raise awareness of forces that shape tacit practice; develop capacity to change tacit practice
Nature of discourse	Rational: making meaning from experience	Rational: making meaning from experience	Rational and tending to emancipatory: making meaning from and critiquing experience
Ideology	Influenced by beliefs of participants and staff	Influenced by beliefs of participants and staff	Influenced by beliefs of participants and staff
Methodology	Cycles of problem framing, action, reflection on action, concluding, re-framing	Cycles of problem framing, action, reflection on action, concluding, re-framing	Cycles of problem framing, action, critical reflection on action, concluding, re-framing
Facilitator role	Varies, but is often passive; acts as mirror to help individuals and team look at learning	Varies, but is often passive, acts as mirror to help individuals and team look at learning	Varies, but is often more interventionist; combines passive role with active challenging
Level of inference	Medium	Medium	Medium–high
Personal risk	Depends on visibility of projects; political risk if poor individual or team performance	Depends on visibility of projects; political risk if poor individual or team performance	Depends on visibility of projects; political risk if poor individual or team performance; potential psychic risk
Organizational risk	Moderate, needs management support at various levels	Moderate, needs management support at various levels	Moderate to high, needs involvement of management
Assessment	Change at individual, team or system level depending on focus	Change at individual, team or system level depending on focus	Change at individual, team or system level depending on focus
Learning level	Second-order	Second-order	Second-order; edging into third-order in some designs and based on the interventions of the facilitator

to the way in which individuals and systems have come to understand themselves. They often consider themselves to be 'radical' learning coaches (O'Neil, 1996). However, as is so in other Action Learning schools, these advocates ultimately leave choices in the hands of learners. Without a mandate for radical reform, Action Learning practitioners hold that challenge to the system can lead to serious risks for learners. They would try to help learners understand these risks and make conscious, informed choices about how far to go in addressing change.

The design of Action Learning initiatives is influenced by the above understanding of philosophy, purpose, time frame, depth of change, and epistemology. Discourse in Action Learning tends to be rational and oriented toward helping people to better understand their experience. Designs in the Critical Reflection School tend to push the edges of the emancipatory domain. Because of the collective problem-solving focus, the methodology is learner-centered and problem-driven. The action research cycle (iterative problem identification, action, reflection, drawing conclusions, and re-framing) is employed, but in some schools it provides a loosely constructed framework within which to function. As is the case in action research, Action Learning engages learners in data gathering and analysis. However, with some exceptions (notably the Scientific School), Action Learning does not require that learners collect and analyze data in such a rigorous, formal way, as might be the case in action research.

With some exceptions—notably those with strong beliefs rooted in the Scientific and Kolb-based Experiential Schools—nuances of ideology behind Action Learning programs vary with those who embrace and design it. As O'Neil (1999) has found in the study she is currently conducting on the role of the Learning Coach, this variation in ideology shows up most prominently in the different views of coaches about their role. In general, Action Learning Coaches remain in the shadows and get out of the way of participants as they take increasing control of their own learning. Coaches are more active in the beginning of a program, but they build the ability of others to manage their own experience over time. In her research, Weinstein found that as the team begins to work more effectively, the Learning Coach becomes less necessary (1995). Their interventions are somewhat passive in that they act as a mirror to show participants what their experience is like, and to raise questions that will help learners think freshly and differently about this experience.

The Learning Coach is not typically a resource on research methods as is the case in action research. Nor does he or she possess a common repertoire of tools that aim at a deeper level of personal and systems-level change, as may be true for action science or action inquiry. However, Coaches in the Critical Reflection School do push in that direction and sometimes combine their Action Learning approach with elements of these other technologies. Unlike collaborative inquiry, the Action Learning teams seldom reach the same level of pure interest in their collective learning. Action Learning also differs from participatory action research in that its focus is more oriented to individual choice and action than to the collective action of a group on mutually defined needs. Action Learning may share features with participatory action research when, at times, Action Learning is used outside of organizations, for example in community development.

As with all of the action technologies, Action Learning brings with it some level of risk. Projects are used to create social laboratories in which real-time change occurs and, as such, one can never be fully prepared for what will emerge. None the less,

because of its highly instrumental focus, the risk is less to the psychological make-up of the individual than it is to the potential for stirring up the organizational waters regarding 'how things are done around here'. This is true whether the program is focused on individual or on team projects. The strong emphasis on 'Q' learning guarantees that questions will be asked throughout the program. This opens up new views that participants and systems might not have seen or considered and that might be disturbing. People may find change to be good when it involves others, but not when it means that they, too, must think and act differently.

The personal risks in Action Learning programs depend on the visibility of the projects. Research, for example, on ARL™ programs has found that tensions increase 'because people work in real situations, and as a result, get real-time feedback from internal organizational clients and peers' (O'Neil et al., 1997: 342). This research identified tensions between expectations of learning and delivering tangible results; between time required for learning and task; and between team conflict and harmony. Participants fear—and sometimes encounter—consequences for risks they take in programs, even though many programs emphasize that the learning is more important than actual results, and that Action Learning provides a safe environment to learn from mistakes.

When the culture is not supportive of mistakes, there is more pressure to perform well than to learn. Despite what they espouse, top management could 'punish' those individuals or teams who question too much or who propose solutions that are not in sync with the dominant culture. Because projects are visible, and because the challenges are real, the strengths and weaknesses of participants are more apparent and more publicly available to others for evaluation. Action Learning programs in organizations may be used intentionally for assessment. In such cases, they could lead to job loss and job change.

These risks should not be minimized. With some exceptions, however, Action Learning does not incur the same kind of psychological risks that are possible in action science or action inquiry which require that participants probe more deeply their values, beliefs, and self concept. Action Learning programs also typically stop short of what can sometimes be serious risks in participatory action research, particularly when undertaken to act against an unpopular and perhaps tyrannical government.

The main organizational risks derive from the fact that, to address the problem effectively, participants might question practices elsewhere in the system. Sometimes, 'sacred cows' must be challenged. Sometimes, revision of people's staunchly held views about how things should be done turns out to be key to a solution. Therefore, even when the program is more focused on personal development than on organizational change, the projects tend to create waves and produce tensions that destabilize the status quo. Employees cannot undertake new behaviors if these are not understood, practiced, and rewarded by their supervisors. Risks can be managed to the degree to which they are truly supported by various levels of management. More than that, managers find that they, too, must change to achieve maximum results. In this, we believe that Action Learning is no different from the other action technologies. In some cases, it is even less threatening because it is less likely to demand radical change of the system. All of the action technologies, theoretically, can be undertaken by individuals; but individuals are members of complex systems. Change in one part of the system effects changes elsewhere.

Finally, proponents of Action Learning have often been missionary in their zeal, but

less able to, or interested in, assessing the true impact of their interventions. Assessment can be focused on the individual, team, or system level, depending on the nature of the intervention. Yorks et al. (1998) identify some transfer effects from an organizationally-focused program. Guidelines for assessment in Action Learning programs have only recently begun to emerge (see, for example, chapters in Mumford, 1997).

Conclusion

We conclude that people should not enter into Action Learning lightly. In comparison to other action technologies, Action Learning might be looked upon as relatively mild and unprovocative, yet our experience is that people can experience it as powerful and even frightening. We conclude that it is often the first step for participants in a journey toward greater self-insight, greater capacity to learn from experience, and greater awareness of the political and cultural dimensions of organizational change. For organizations, it is often a first step toward linking individual learning with systemic learning and change.

People can find it difficult to learn from their experience through a messy struggle with real challenges. Participants in some programs are surprised when they are expected to take charge of their own learning, and often find it disturbing that they cannot easily 'name' or describe what that learning looks like. Action Learning is meant to be a relatively safe laboratory for learning. But the visibility of these programs—combined with the uncertainty inherent in the learning process—make it likely that people will experience them as unsafe. The 'pressure cooker' that is created by combining the intensity of an Action Learning program with the intensity of their normal jobs makes it difficult for participants to take a neutral stance towards their learning.

On the organizational side, even when the program is clearly explained, the system is seldom ready for the repercussions that spill out from the projects. If many programs take place simultaneously, the work processes in the organization can become disrupted. Participants are disturbed by the discrepancy between what they are learning in the program and the way in which their organizations function. Learning Coaches often take on the role of coaching project sponsors as well as stakeholders in the system who find that participants begin to challenge the way in which the system functions.

In this article, we have attempted to lay out key features that Action Learning programs have in common, as well as to outline differences in some of the ways in which it is practiced. It is likely that many readers who also practice Action Learning will object to some of our categories, and speak authentically of a very different experience in the way in which they carry out their craft. Action Learning, in its many faces, can indeed be a many splendored thing—to borrow from a North American song about love! Yet despite differing approaches, Action Learning advocates would unite to defend some core beliefs around learning from experience in an intentional, sustained fashion within the context of real life challenges. The focus of Action Learning is on individuals who play an enhanced role in directing their own learning and, as such, achieve more control of their own destinies. Action Learning helps people to become more explicit about their intentions and their

strategies to achieve them. It often assists people to become more conscious, as well, of driving forces in themselves, in others, and in institutions that shape their action so that they can take more informed steps to influence future directions.

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Transforming Social Practice: An Action Science Perspective

Abstract *Action science is designed to help people reflect on and improve social practices that shape inquiry, choice and action. It is based on an epistemology of practice as reflecting-in-action and has developed largely within the framework of the theory of action approach. A case example is used to illustrate how action might be redesigned in the moment and to suggest the causal factors that prevent people from acting more effectively. In action science we seek to alter these causal factors by engaging people in reflecting on dilemmas and inconsistencies in their logic of action.*

Action science is a form of inquiry into how we design action and how we might create better organizations. It is concerned with practical knowledge for the conduct of human affairs. Action science proceeds by helping people reflect together on matters of concern to them so that they can understand their situation more adequately, make intelligent choices, and enhance their capabilities for action.

The idea of an action science has been developed by Chris Argyris, Donald Schön, and people who have worked with them (Argyris, 1980, 1982, 1993; Argyris, Putnam and Smith, 1985; Argyris and Schön, 1989, 1996; Schön, 1983; Torbert, 1976). The theory of action approach (Argyris and Schön, 1974, 1978) has been the framework for much of this development. The roots of this work are in the action research tradition of Kurt Lewin and in John Dewey's theory of inquiry.

An action science requires an epistemology of practice, a theory of knowledge for action. Donald Schön (1983, 1987) pointed out that normal science has an epistemology of practice, which he called technical rationality. On this model, scientists create basic knowledge; applied scientists tailor knowledge to particular domains of practice; professional schools teach this knowledge to practitioners, who then apply it. This works when practitioners can act as instrumental problem solvers in well-defined situations, selecting technical means to achieve clear ends. But life rarely comes packaged so neatly. Facing an indeterminate, messy situation, we must

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frame it by selecting what we will pay attention to and setting a direction for action. Only then can instrumental knowledge be applied. Technical rationality does not account for how practitioners frame situations, how they improvise in unique cases, or how they deal with value conflict and disagreement about what ends are desirable. These competencies are increasingly important as people must coordinate action across organizational boundaries, integrate divergent interests and perspectives, and lead change amidst complexity, ambiguity and uncertainty. The model of professional knowledge as technical rationality has least to offer in precisely those areas where the need is greatest.

Schön (1983) proposed that we seek an epistemology of practice implicit in the performances of everyday life. When master practitioners act deftly in difficult situations, they display knowledge that they are not consciously thinking about and often would be unable to state. All of us exhibit tacit knowledge, or what Schön called knowing-in-action, when we recognize a face, speak our native tongue, or smooth over a difficult moment at a party. This is the ordinary form of practical knowledge. Schön pointed out, however, that sometimes we do think about what we are doing, especially when we are puzzled or surprised. He named this reflecting-in-action, and argued that it is central to our ability sometimes to act effectively in unique, ambiguous or divergent situations. It follows that a key requirement for professional education is to help practitioners develop their capabilities for reflecting-in-action. An important form of this capability is frame reflection, an inquiry into the clashing frames that different parties impose on a situation (Schön and Rein, 1994). An action science may contribute to the quality of reflecting-in-action and frame reflection, and to knowledge for helping practitioners develop these capabilities.

Theory of Action

The theory of action approach (Argyris and Schön, 1974, 1978) is concerned with causality, meaning, and practical reasoning. It shares this focus with the philosophical tradition of analysis of concepts pertaining to action in ordinary language (e.g. Ryle, 1949; von Wright, 1971; Bernstein, 1971). When we act, we mean to do something, to bring about or prevent some state of affairs. Practical reasoning is concerned with choices about what to do, in the context of ethical and political life in a human community.

The root metaphor of the theory of action approach is practical knowledge as a kind of theory. Intelligent performances exhibit a design, as people seek to achieve what they intend or to take care of their concerns. The design can be seen as a theory of the form, 'In situation X, to achieve Y, do Z'. We need not assume that people consciously think about the design before or during action, any more than we think about the rules of grammar that we unerringly follow as we speak. But by inferring the design, or in other words the 'theory of action', we can make explicit and reflect on our practical knowing. Reflection guided by the theory of action approach often focuses on the reasoning people use for action. Other approaches may guide reflection in different ways (Edmondson, 1996).

There are two kinds of theories of action. Espoused theories are those that the actor believes he or she follows and is able to state. Theories-in-use are those that can

be inferred from actual behaviour. For example, a manager might say, 'I have strong opinions and I state them, but I'm open to being influenced if people come up with things I haven't thought of'. When we observe the manager in action we might hear him or her respond to others by saying, 'That's the wrong way to think about it. This is what we have to do'. Repeated observations of this kind might lead us (and the manager's colleagues) to attribute that the theory-in-use is, 'I have strong opinions and I state them, and if others differ I dismiss their views and repeat my own'. People are unaware of much of their own theory-in-use and how it is inconsistent with their espoused theory.

Individual theories-in-use are interdependent with the behavioural world or culture in which people live. We learn our theories-in-use through socialization, and we collectively recreate our behavioural worlds by how we act. An example is the chicken-or-egg problem faced by organizations that launch empowerment efforts. Empowerment depends on managers and employees who take the initiative and who can deal productively with differences in view without resorting to command and compliance. Yet today's managers and employees have grown up in organizational worlds that have socialized them in theories-in-use suited for command and compliance. Even when they genuinely espouse empowerment and believe they are acting consistently with it, people in organizations commonly act in ways that disempower themselves and others.

What is it about the theories-in-use people hold that constrains learning? Argyris and Schön (1974, 1996) created a model of the generic features, which they called model I. It is a theory-in-use of unilateral control and protection in which people assume their views are right and seek to impose them on others. Model I has a flip side in which people give up control and withdraw or comply. Both versions contribute to a behavioural world in which important issues are undiscussable, commitment is low, and errors go uncorrected.

Argyris and Schön created an alternative theory-in-use, model II, for joint control and mutual learning. Most people espouse model II, at least for some important situations, and are shocked to discover how their own behaviour falls within model I.

The theory of action approach distinguishes between single-loop and double-loop learning. Single-loop learning is a change of tactics within the same overarching theory-in-use. Most learning in everyday life falls in this category, as does most skill training offered in organizations. Double-loop learning involves changing the values and reasoning processes by which people design action. Learning model II as one's theory-in-use is an example (Argyris, 1976; Putnam, 1990, 1991).

It may well be that an action science can be constructed on some basis other than the theory of action approach. It seems likely, however, that any approach that might inform an action science would resemble the theory of action in important respects. For example, the leadership theory of Ronald Heifetz (1994), drawing on quite different theoretical sources and practice traditions, makes a distinction between technical and adaptive work that functions in ways similar to the distinction between single-loop and double-loop learning. Like the theory of action, Heifetz's theory has a strong prescriptive component—as indeed must any practice theory. And it, too, has developed in conjunction with educational activities that engage practitioners in reflecting on practice.

Social Practices Shaping Inquiry, Choice and Action

Consider an example: A senior officer of a major corporation and his staff were discussing how to get an important project back on track. A key problem, they agreed, was that the project did not have its own budget. They considered how to address this issue at an upcoming meeting of the Executive Committee. Their consultant suggested that they roleplay how the conversation might go, with one of them playing the CEO:

Officer: One of the problems is that we don't have a budget, so we have to go hat-in-hand to others.
CEO: Not having a budget is not important. What's important is alignment.
Officer: Absolutely right.

The consultant interrupted, 'I thought you believe the budget issue is crucial.' 'Right,' the officer replied. 'Then what leads you to say ''absolutely right'' when the CEO says the budget is not important?' 'Oh,' said the officer, 'there is a norm in the top group that no one disagrees overtly.'

Organizations are beset by a host of informal but firmly entrenched practices that constrain their ability to consider important matters. Forecasts are adjusted up or down based on private assessments of the biases of those who supplied information and those who will receive it. Product champions marshall information in support of their arguments and omit or downplay contrary information. Team members avoid criticizing each other's work for fear of being seen as not a team player. Project managers commit to unrealistic schedules in the belief that is how to show they have the 'right stuff'.

Practices such as these cannot be altered by decree. Nor is it sufficient to help individuals learn new ways of acting, necessary as this is. Rather, members of the relevant community must reflect together on how they interact and on the reasoning and norms that guide their behaviour. This is a tall order, because constraining practices often violate publicly espoused standards of behaviour. To discuss these practices, people must acknowledge participating in them. They must also say things that they have avoided saying lest others become upset. In most people's experience, these conversations have rarely been productive. Standard procedure is to work around constraining practices rather than to address them directly. In the case of the senior officer and the CEO, for example, the officer and his staff reported that their usual technique was to speak with the CEO alone in his office. They acknowledged that this did not work well, because other members of the Executive Committee did not go along with decisions that had been negotiated privately. But they were most reluctant either to raise their differences overtly in the Executive Committee or to say that they found it difficult to do so.

Action science seeks to help members of organizations reflect on and improve social practices that shape inquiry, choice and action. We are guided in this effort by a normative theory that, while unique in its particulars, is based on values central to western thought since the Enlightenment. More to the point, perhaps, they are central to prevailing theories of professional effectiveness, including theories of management. They include the stated values of model II: valid information, informed choice, and internal commitment (Argyris, 1970; Argyris and Schön, 1974). They also include personal responsibility, competence and justice,

in particular the principle that one should act toward others as one expects them to act. These values are deeply embedded in ordinary language and practical reasoning.

The difficulty is that these values often clash with what I will call the socio-emotional reflexes of everyday life. Erving Goffman (1959) based virtually an entire theory of social interaction on face work, describing how a person 'employs circumlocutions and deceptions, phrasing his replies with careful ambiguity so that the others' face is preserved even if their welfare is not' (1967: 17). Edgar Schein (1987) gives face work a central place in his approach to process consultation, writing that 'the deliberate destruction of someone's face is equivalent to social murder' (p. 86). Clearly, the morality of everyday life includes values that often pull people away from open discussion and public inquiry into sensitive matters.

By what right do we challenge or question prevailing social practices that may reflect a compromise among conflicting values? Are we not imposing our values on people? And if so, are we not being inconsistent with our own values of choice and personal responsibility?

Action science proceeds by engaging people in a kind of internal critique of their own practical reasoning and normative commitments. For example, the senior officer and his staff cared deeply about acting for the good of the organization. They also did not want to upset the CEO. They recognized the dilemma or conflict created by these two interests, and they felt trapped. Action science involves identifying such dilemmas and inquiring more deeply into them, stimulating critical reflection and the search for alternatives. The process can be uncomfortable as rationalizations are exposed and people confront their complicity in practices they abhor. Doing this work calls for compassion and for a way of constructing the socio-emotional values of caring, support and respect so that they can be integrated with the values of inquiry, competence and justice.

I see action science as a kind of critical theory (Bernstein, 1976; Geuss, 1981). Critical theory takes a practical interest in improving human existence. In the language of Jürgen Habermas (1971), a critical theory serves 'emancipatory' interests, which I understand to encompass fostering human development, choice and self-responsibility. A critical theory proceeds by engaging people in self-reflection so that they can transform their self-awareness and can act to change their world.

Case Illustration: The Manufacturing Manager's Visit

The case of the manufacturing manager (p. 122, this issue) offers an opportunity to illustrate and to elaborate on key themes in action science.

Assessing Effectiveness

Of perhaps 100 people in attendance at the Academy of Management Symposium that was the genesis of this special issue, only two raised their hands to indicate that they assessed the interaction in the case as more effective than ineffective. Almost all the rest indicated that they assessed it as ineffective or counterproductive. I suggest we would find similar results in almost any group, including one composed of

members of the organization in which the interaction occurred. Indeed, the Team Leader and the Senior Manager are themselves likely to have evaluated it negatively, although each might well have seen the other as the cause of the ineffectiveness. The case illustrates the gap between actual discourse practices and those that members of organizations themselves believe are productive.

Now let us consider, what is it about the interaction shown in the case that contributes to the ineffectiveness? Answers to this question will vary far more than do global assessments of effectiveness. One way that action science adds value is by offering a theory of effective action that is more powerful and internally consistent than common sense theories, yet simple enough that people can use it in the midst of action. From the perspective of the theory of action approach and its descriptions of model I and model II, key features of the interaction include:

- Both the Team Leader and the Senior Manager advocate their views and do not inquire into the other's views, nor do they encourage inquiry into their own views. The only question in the entire dialogue is 'what gives?' This comment serves more as a chastising of the Senior Manager than as a genuine inquiry.
- Much of the reasoning underlying the advocacy remains implicit. For example, the Senior Manager says 'That won't work', but does not explain what leads him to think so. Neither does he explain why he believes the team does not need a sounding board.
- Each player seems embedded in his own perspective and displays little curiosity or openness to how the other person sees things. We have better data on the Team Leader's frame of mind, as we have his reconstruction of his unspoken thoughts and feelings (the left-hand column). His perspective seems to be, in effect, 'My view is right, and obviously so; the problem is the unreasonable behaviour of the other guy'. Nothing in the reported dialogue suggests that the Senior Manager is any more aware of the possibility that his own view may be limited and that the Team Leader and members might have good reason for their proposals.

These features of the interaction are characteristic of model I theory-in-use. When important matters are at stake and the people involved have different perspectives, better results can be achieved when people use model II. Briefly, this would mean that each player advocates his or her view and explains the underlying reasoning, encourages others to inquire into that reasoning, and inquires genuinely into the views of others. Sustaining this mode of action requires an underlying frame or stance of openness to the possibility that one's own view may be limited and that others may have a point. As the philosopher of science Karl Popper expressed this attitude, 'While differing widely in the various little bits we know, in our infinite ignorance we are all equal' (1963: 29). The practical challenge is, how do we act responsibly in light of our infinite ignorance, neither allowing ourselves to be immobilized by our awareness of how much we do not know, nor assuming that the little bits we know are all we need to know?

Doing Action Science: Some Possibilities

We can think of two dimensions to action science. The first is that of helping

individuals and organizations to be more effective. The second is that of creating a body of knowledge that goes beyond a particular action context.

On the first dimension, we can distinguish two modes of activity in the action context.

1. Improving the quality of discourse in the moment so that players can do better whatever it is that they are doing. Moves of this kind can be made either by the players involved or by a third party.
2. Engaging the causal factors that lead the players to interact as they do. To bring about fundamental and lasting improvement in the quality of discourse, people must reflect on and alter assumptions embedded in their social skills and how they construe their world. While some of this can occur on-line, in the midst of practical deliberation, more often it occurs in designated learning sessions.

On the second dimension, in action science we also address a more distant community of inquiry through books and articles (e.g. Putnam, 1991, 1996). What is distinctive about action science in this regard is the relationship between the written research product and in-the-moment action. The on-line skill of those doing action science is crucial to the quality of the research. See Argyris, Putnam and Smith (1985) for a discussion of research methodology in action science.

The case of the manufacturing manager offers opportunities to illustrate the two modes of action science in the action context. The logic of the following sections is first to illustrate how the Team Leader and the Senior Manager might have handled their encounter more productively. Embedded in the illustrations is a design (or theory-in-use) that is necessary to produce the new behaviour, but that is not made explicit. Then as a second step I consider what it would take for the Team Leader and the Senior Manager to learn the design so that they could be capable of producing the new behaviour. It is at this point that more distinctive features of action science, as discussed in previous sections, may become evident.

Improving the Conversation in the Moment

Consider how the Team Leader might have responded differently to the Senior Manager's first statement:

Commentary	*Conversation*
Advocacy; reasoning not explicit	*Senior Manager:* That won't work. You were supposed to develop a precise plan for quality improvement to cut down on costs. We don't need a sounding board.
Redesign: Inquire into reasoning	*Team Leader:* I agree our objective is quality improvements to cut costs. What is it about our proposal that you believe will not work?

By saying this the Team Leader seeks to find out how the Senior Manager understands the proposal and what concerns it raises in his mind. Suppose that the Senior Manager continues to be somewhat cryptic and aggressive:

Commentary	*Conversation*
Advocacy; much reasoning still implicit	*Senior Manager:* Because there is no plan for how to cut costs. It just leaves things up to each individual.
Redesign: Advocacy; make reasoning explicit	*Team Leader:* Our thinking was that we can get the biggest gains by having people close to the problems identify what, in detail, needs to be done, and then doing it. If we create the detailed plan for others to implement, our concern was that we would not be taking advantage of the knowledge of people close to the problems.
Inquire	What's your reaction to that thinking?

This response states a common premise of empowerment and self-directed work team initiatives, and one that the Senior Manager's initial responses seem to violate. By inviting the Senior Manager to comment on it, the Team Leader creates an opportunity to discuss possible differences in fundamental assumptions. The ensuing discussion might also help Team Members see gaps or dilemmas in how they have acted on their assumptions about empowerment.

Conversely, the Senior Manager could have acted more productively while still being tough-minded about the work of the team:

Commentary	*Conversation*
(See case for full text, p. 122)	*Team Leader:* Each of us will develop an individual project (etc.) …
Redesign: States meaning he infers; makes explicit a concern, inquires	*Senior Manager:* That sounds like your plan is to leave it up to individuals, and to talk about it now and then. My concern is, if this is where you are after six months, why should we have confidence that going about it this way will achieve actual cost reductions in the next six months to a year?

As this redesign illustrates, it is not essential that managers or others be 'nice' or 'supportive', as these qualities are often understood. Given the Team Leader's opening statement, it is reasonable for a senior manager to be concerned that the team may have been unable to make genuine progress and that the proposal to leave the initiative in the hands of each individual is an avoidance of the team's responsibility. The key from an action science perspective is that the manager treats his concern as a kind of hypothesis to be tested. This can be done by raising it explicitly, stating what leads to the concern, and inviting others to explain how their views may differ. Conventional niceness can get in the way, if for example the Senior Manager has concerns but hides them, and instead makes approving noises that allow all concerned to feel secure in their avoidance of difficult issues.

A third-party interventionist might make related moves to help players have the kind of productive discussion of their differences that they may have difficulty creating by themselves.

Standing outside the interaction, it is relatively easy to rewrite the script to make the conversation more productive. In the moment, however, it would be quite

difficult for these players to make changes of the kind illustrated above. What are the causal factors that make this kind of interaction persist, and how might we alter them?

Engaging Causal Factors

Why would the Team Leader and Senior Manager have difficulty acting, in the moment, in ways illustrated by the redesigns above? An initial answer is, because of the spontaneous, genuine reactions that they actually have in the moment, as illustrated by the Team Leader's thoughts and feelings (on the left-hand column of the case). Each of the Team Leader's private reactions construes the Senior Manager as wrong for acting as he is and shows the Team Leader as having a strongly negative emotional reaction. He feels that he is the aggrieved party and that the Senior Manager is treating him and the team unfairly and unreasonably. In the grip of these reactions, it is unlikely that the Team Leader can genuinely and in a spirit of openness inquire into the Senior Manager's reasoning. If we had the Senior Manager's unspoken thoughts and feelings, it is probable that the same would be true of him.

The next question is, why do people have the kinds of spontaneous reactions that they do? One way of answering is, because of who they are and their way of being in the world. In order for the Team Leader to respond to the Senior Manager's comments with a sense of openness and curiosity, he would in an important respect have to become a different person than he is. He would have to undergo some personal transformation. Argyris and Schön (1974) describe the necessary change as learning a new theory-in-use, one governed by a different set of values. Torbert (this issue) describes it as movement to higher developmental stages.

Another way of answering is to point to the behavioural world in which people have become who they are and in which they currently live. The Team Leader, let us suppose, is a well-socialized member of the organization (after all, he was made team leader), and is responding in just the ways that could be expected of someone in his situation. Changing how the Team Leader reacts may call for changing embedded behavioural routines and the cultural stock of knowledge for how people act in this organization. From an action science perspective, the personal and social domains are interrelated and it is necessary to work on both.

Working at these levels is on the one hand distinctive of action science as compared to other forms of action research and action learning. Yet it is consistent with Lewin's original vision, which focused on change at the level of values, attitudes and cultural practices (Lewin and Grabbe, 1948). It is also consistent with seeing action science as a kind of critical theory (Geuss, 1981).

The practical argument for engaging these causal factors is that little fundamental change will occur if we do not. On the other hand, it is not practical simply to advise people to change who they are or to remake their cultures (the current popularity of 'culture change' programmes notwithstanding). How can meaningful progress be made on these matters?

In action science we engage people in reflecting on their practice, and especially on inconsistencies in what I will call their logic of action. The case of the manufacturing manager offers several opportunities. For example:

1. The Team Leader says, 'We were told that you wanted us to be empowered and to identify our own work task. What gives?' The logic of the Team Leader's reaction

is, in effect, 'Once you empower us, don't criticize our decisions'. Yet this logic, if adhered to, would disempower the Senior Manager.

2. Later the Team Leader thinks to himself, 'You keep cutting us off at the knees—how do you expect us to get anywhere?' This implies that the Team Leader believes that the team has not got far. Yet when the Senior Manager points that out, the Team Leader rejects what he is saying.

Putting these two points together, it is as if the Team Leader follows a logic of action that says, 'When I know we haven't got far, I will present our proposal as if it is well thought through and I will see it as illegitimate for you to question it'.

3. The Senior Manager says, 'We don't need a sounding board'. Yet he justifies his role in this meeting as, in effect, a sounding board for the team. Why is it useful for him to do it with them, but not for them to do it with each other?

Identifying inconsistencies in people's logics of action can lead them to feel defensive, flustered or confused. Doing action science requires skill in framing, naming, and inquiring into inconsistencies so that participants can continue to reflect and learn. Interventions of this kind create a 'stop-and-think' in which people reconsider tacit and taken-for-granted assumptions. Such moments can lead people to feel a sense of personal responsibility to change, contributing to the possibility of personal transformation.

Inquiring into inconsistencies of the kind illustrated above often leads to a discussion of underlying concerns, dilemmas and behavioural routines. For example, the Senior Manager might say that he doesn't think it would be useful for the team to act as a sounding board for its members because he doubts that members would be appropriately tough on each other. This points to one of the classic difficulties of self-directed work teams: how do members deal with shortcomings in each other's performance? In the world in which people have grown up, that is a boss's job. For a peer group to deal effectively with these issues requires, usually, major developmental efforts.

Digging deeper, we might ask the Senior Manager what led him to commission an 'empowered' team if he had (perhaps well-grounded) doubts about their ability to perform? And what led him not to raise these doubts earlier? This might begin to unravel some of the dilemmas created by the political correctness, cynicism and naivete that afflict empowerment efforts.

Or, the Team Leader might say that the reason he is upset is that the Senior Manager has not given the team adequate support by coming to prior meetings and keeping team membership more stable, yet is holding the team and not himself responsible. We might then ask, 'What led you not to tell the Senior Manager before now that the team's performance was in jeopardy because of these things?' This line of discussion would be a further avenue into the taken-for-granted practices that prevent this organization from making intelligent choices, coordinating action effectively, and enhancing capabilities.

Naming and inquiring into dilemmas and inconsistencies is a difficult enterprise. They are often treated as undiscussable, because discussing them can trigger emotional reactions and, in the experience of participants, has usually been unproductive. Yet not discussing them leads members of organizations into a thicket of covering up, smoothing over, and working around what they believe is really going on. Many of the beliefs and assumptions on which they base action therefore remain

unstated, untested, and uncorrected by public inquiry. Action science offers an approach to altering these practices so that members can create work communities that are more aligned with their values and interests.

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The Distinctive Questions Developmental Action Inquiry Asks

Abstract *Developmental Action Inquiry askes three types of questions together in one's actions with others, with the normative aim of improving the timelines and transformational effectiveness of action. The three questions concern the first-person dynamics of one's own awareness, the second-person dynamics of the immediate group with whom one is interacting, and the third-person dynamics of the larger institutions within which one's action is situated. The article outlines the type of theory and practice that supports and reflects such inquiry, and highlights how different such integrated 'research/practice' is from empirical positivism.*

What is unique and uniquely important in Developmental Action Inquiry, by comparison to other action-focused research approaches?

One way of responding to this question is to offer the three questions that have animated this discipline since its inception. To my knowledge, among all the quantitative, qualitative, and action-related social science research approaches, only Developmental Action Inquiry has articulated these three questions together and systematically explored their relationship to one another. The three questions are:

1. *How, in real-time, to divide the researchers own attention by actively turning toward its origin or source*, inviting unforeseeable personal transformations of consciousness, while simultaneously going with the (passive) flow of my attention through feelings, actions, and into perceptions of the outside world? This, not lifelong but potentially adult-long-and-increasingly-continual inquiry can generate my own (and your own) *first-person research/practice* in each moment (Ouspensky, 1949; Trungpa, 1970; Torbert, 1973).

2. *How to create mini communities of inquiry* (three persons or more) *in real-time* among friends, within one's family, and at work? As we more closely approximate such communities (which we find ourselves doing by treating awareness-deepening

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inquiry as the highest value and the condition for true mutuality, diversity, justice, and empowering effectiveness), our lives become more and more shaped by the loving educational suffering that occurs among peers. This potentially adult-long inquiry can generate *second-person research/practice* between me and others in my company in each moment (Grudin, 1996; Heron, 1996; Reason, 1995; Torbert, 1976).

3. *How to act in an objectively timely manner?* The phrase 'objectively timely manner' is meant to strike the reader as peculiar and implausible. What action (think of Socrates drinking the hemlock, or Marx publishing the Communist Manifesto) strikes all its auditors (immediate and distant [in time or place]) in the same way? Upon reflection, clearly none. Do you agree? If so, what, then, can an 'objectively timely manner' mean?

It means 'listening for the music' (Torbert, 1998) of real-time psycho/social relations among your own first-person voices, the second-person voices of persons with whom you are interacting, and the third-person voices represented in the norms and structures of larger social aggregates. This listening for the patterns of relationships goes on even as your own voice joins in the chaotic/symphonic/transforming song. Sometimes this simultaneous listening (inquiring) and singing (acting) leads to certain predefined results. At other times, it transforms and reframes what is at stake. At other times, you feel out of tune and seek to adjust.

One cannot be precise, for objectively timely action will not merely accomplish certain predefined results, but also heighten inquiry and, therefore, unpredictability. This inquiry occurs in real-time—within the actor and within the other interactors—as well as among third-persons-at-a-distance-in-time-or-space. The inquiry is about the awareness that generates and attributes meaning and effects to action. In Habermas' (1984; Benhabib, 1986) terms, such 'action inquiry' is, alternately or all at once, instrumental (achieves outcomes), practical (improves joint action effectiveness), and emancipatory (improves meaning-making and awareness). One cannot be precise, but if one is *not* achieving all three of these outcomes intermittently, then one is surely not acting in objectively timely ways, ways that improve first, second, and third parties.

Improvement is an ordinal variable. We intuit (perhaps incorrectly on any given occasion) that things are getting better or worse. In the case of objectively timely action, improvement (of awareness, etc.) is best assessed from one's own first-person perspective, from the perspectives of at least two often divergent peers, and from a third-person, organizing-data-meaning-and-action-at-a-distance perspective. Thus, objective timing is objective, not in a pre-relativistic, absolute sense, but in a post-relativistic, inquiring sense.

For example, when I first came to Boston College 20 years ago as graduate dean, my first proposal to my colleagues (about how to recognize excellence in teaching) was roundly squelched in a single meeting. By contrast, my second proposal (about how to reorganize the MBA program to help students increase their action effectiveness as well as their knowledge and strategic awareness) was passed unanimously by the faculty and over the next several years propelled the school from below the top 100 into the top 25 MBA programs in the US). Even this bare-bone, two sentence summary, without any explicit description of my own, first-person feelings about the matter, suggests that I choreographed many distinct actions into a

more objectively timely weave in the case of my second proposal than in the case of my first.

These three unique questions into (1) one's own self-development (2) with others, (3) in the timely service of third parties' futures have inspired Action Inquiry since it was first formulated under the name of Action Science (Torbert, 1976, see quotes below). Interestingly, when Argyris borrowed the term Action Science from me (with attribution: Argyris, 1980), he made no reference to these three questions and proceeded to develop a version of action science theory and practice (Argyris, Putnam and Smith, 1985) with *no* sustained focus at all on cultivating first-person attention or first-, second- and third-person timeliness.

Argyris also offered only an *ideal* notion of professional, second-person 'communities of inquiry within communities of social practice', rather than any developmental articulation of how, step by step, through increasing voluntariness, mutuality, and discipline of inquiry, a community can transform toward a community of inquiry. According to developmental theory, neither a traditional community nor a modern corporation can transform directly into a community of inquiry. Instead, a traditional, exclusive community (the sociologists' 'Gemeinschaft'; the Incorporation stage in Table 1 below) can evolve through an Experiments stage to a typical corporate, hierachical form (the sociologists' 'Gesellschaft'; the Systematic Productivity stage in Table 1). From there, an organization can transform toward the more inclusive, present- and future-oriented constitutional form (Rawls, 1972; Torbert, 1991; the Collaborative Inquiry stage in Table 1). Note that most organization development of the past generation attempts to achieve the informal aspects of Collaborative Inquiry without transforming the political status of the employee into citizenship (with rare exceptions such as the Mondragon cooperatives in Spain). Real-time, citizenship-based communities of practice can in turn be inspired from within by mini-communities of inquiry (the Foundational Community stage in Table 1), like the US Supreme Court, Alcoholics Anonymous, the Quakers, lifetime Buddhist practitioners, etc. (Fisher and Torbert, 1995).

While Argyris was redefining Action Science I had come to feel that the term sounded too much like already-knowing how to act and interpret action and not enough like continual, existential, relational searching for how to act and interpret and envision action. The latter phrase comes far closer to describing what I found my adult life becoming, by virtue of my (sometimes meandering) commitment to questions like the three above. So I renamed the research/practice in which I have been engaged for the past 36 years at first Action Inquiry, in deliberate contrast to Action Science, and later Developmental Action Inquiry, in contrast to the closely related Cooperative Ecological Inquiry paradigm named, and well-illustrated by, the work of John Heron (1996), Peter Reason (1995), and most recently Hilary Bradbury (1998) (see Table 1).

Here is the original formulation of the four primary axioms of Action Science according to Torbert (1976)—axioms that currently root Developmental Action Inquiry into the wider cosmos:

1. An initial axiom of action science ... hold(s) that a person must undergo a to-him [sic] unimaginable scale of self-development before he becomes capable of relationally valid action. This self-development includes not only disciplining and freeing emotions and behaviour—the personal elements often neglected by contemporary education—but also

Table 1 Analogies among personal, organizational, and social scientific (increasingly voluntary) developmental paths

Personal development	Organizational development	Social scientific development
I. Birth–*Impulsive* (0–6yrs)	*I. Conception*	*I. Anarchism* (Feyerabend, 1975)
(multiple, distinctive impulses gradually resolve into characteristic approach [e.g. many fantasies into a particular dream for a new organization])		
II. Opportunist (7–12?)	*II. Investments*	*II. Behaviorism*
(dominant task: gain power [e.g. bike riding skill] to have desired effect on outside world)		
III. Diplomat (12–?)	*III. Incorporation*	*III. Gestalt Sociologism*
(looking-glass self: understanding others' culture/expectations and melding own actions to succeed in their [e.g. market] terms)		
IV. Technician (16–?)	*IV. Experiments*	*IV. Empirical Positivism*
(intellectual mastery of outside-self systems such that actions = experiments that confirm or disconfirm hypotheses and lead toward valid certainty)		
V. Achiever (25?)	*V. Systematic Productivity*	*V. Multi-method Eclecticism*
(pragmatic triangulation among plan/theory, operation/implementation, and outcome/evaluation in incompletely pre-defined environment*)		
(* first logic-in-action that [more or less] reliably accepts and adjusts to single-loop feedback)		
VI. Strategist (35?)	*VI. Collaborative Inquiry*	*VI. Postmodern Interpretivism*
(self-conscious mission/philosophy, sense of timing/historicity, invitation to conversation among multiple voices and to reframing of boundaries**)		
(** first logic-in-action that in principle accepts, and adjusts to, double-loop feedback)		
VII. Magician/Witch/Clown (45?)	*VII. Foundational Community of Inquiry*	*VII. Cooperative Ecological Inquiry*
(life/science = a mind/matter, love/death/tranformation praxis among others, cultivating interplay and reattunement among inquiry, friendship, work, and earth/material goods***)		
(*** first logic-in-action that regularly cultivates double- and triple-loop awareness)		
VIII. Ironist (55?)	*VIII. Liberating Disciplines*	*VIII. Developmental Action Inquiry*
(full acceptance of multi-paradigmatic nature of human consciousness/reality, including distances/alienations among paradigms)		

Source Drawn from Torbert (1987, 1999); Fisher and Torbert (1995).

> disciplining and freeing oneself for higher thought—thought capable of tracing the patterns of intuition, feeling and behaviour as they actually occur. Only such thought remains open to the mystery-revelation of each moment, open to one's own and the environment's implications. (p. 167)

Most adults broadly assume that they and the real world are generally shaped as they imagine and that their view of the self-world cosmos will not transform again. One undertakes Developmental Action Inquiry only as one increasingly intuits that an unimaginable scale of self-development lies in front of one. The aim is, by dividing one's attention, to treat each moment—not least the moment of death—as an

opportunity for inquiry about the relation between original purpose, theoretical language, action-in-my-surround, and empirical reverberations. Insofar as Developmental Action Inquiry concerns the conduct of such first-person research/practice by each of us, it can be generalized no more than one person at a time over each of our lifetimes.

2. A second axiom of action science . . . stress[es] the importance of finding friends willing to take roles (of challenge, support, and complementarity) for the sake of mutual development. Personal development is bound to be one-sided and incomplete without a circle of friends willing to act as enemies. (p. 169)

Not everyone will call their form of search Developmental Action Inquiry. Nor will all who concoct their own idiosyncratic understandings and exercises in the name of Developmental Action Inquiry in fact continue to draw closer to our own breath, heartbeat, and best practice, unless . . . Unless we befriend at least a few others who are pursuing their search in their own way as well as in a mini-community of inquiry under construction among us through our efforts to interweave our passions, dispassions and compassions productively, justly and lovingly. Insofar as Developmental Action Research concerns the conduct of such second-person research/practice by families, organizations and friendship circles, it can only partially and gradually generalize itself through the practices of such mini-communities.

3. A third axiom of action science: that the earliest personal steps on the path towards action science unavoidably have immediate and strong social consequences, even though the person accepts that he or she is not at a point to take valid social action and is therefore not focusing on changing others. (p. 172)

   . . . a fourth axiom of action science: that objective timing is of the essence to relationally valid action. . . The kinds of personal leadership and organizational structure that will be effective vary according to the developmental age of the interaction, institutions, and persons in question . . . (p. 173)

The first of these two axioms expresses the same observation as the more recently fashionable chaos theory formulation that chaotic patterns over time are highly sensitive to seemingly trivial initial movements. The second of these two axioms raises the question, *as* each of us seeks to act in a timely manner, what kind of knowledge about one's own, one's colleagues', and one's organizations' developmental age is valid and a reliable bridge to effective action? A preliminary response that eliminates virtually all social scientific knowledge to date is that only such knowledge can possibly be valid and reliable as can be held in the midst of an ongoing inquiry in the present. Such active knowing will encourage: (a) an awareness of the present through a dividing of the action inquirer's attention; and (b) a public, second-person testing of one's attributions as one acts—not of one's *hypo*theses formulated prior to the action, but rather of one's *para*theses that emerge during the action (see Raelin, Preface to this issue). If one is speaking, acting, policy-making, or writing (as I am now) for third-persons, without the opportunity for direct public testing, then one wishes to craft the performance or product so that it addresses multiple developmental perspectives and potentially provokes its auditors to engage in their own first- and second-person research/practice. So do first-person, second-person, and third-person research/practice potentially interweave.

What kind of social science theory can support this kind of real-time inquiry rather

than distracting one from it, or narrowing it into yet another form of one-upsmanship? My conclusion (which raises more questions) is that the theory must be *holistic*, *analogical*, and *self-transcending*:

- The theory must remind me (the person playing lightly with the theory) of the *analogies* among larger *wholes* (how my comment now relates to the conversation as a whole, to my and your overall perspectives during this era of our lifetimes, to our lifetimes as wholes, and to the lifetimes of other interacting persons and systems at a distance and often only implicit for me).
- The theory must do this in such a way that my appreciation for their present interplay increases and in such a way that I search beyond the explicit. Thus, the theory guides me beyond the answer it provides, beyond mere thought itself, *self-transcending* into an attention that includes the creative implications of this moment. The theory guides me (or any inquirer in action) beyond the explicit and timebound, and beyond the archetypal and timeless, to the unique act that I body forth, seeking to express this moment's kairos, helping this moment become a meaningful meeting among past, present, and future.

The simplest mental reminder of *self-transcending analogies among wholes* is the analogical, qualitative meaning of the single digit numbers (Torbert, 1993, Lecture V). The following few words very rapidly and abstractly introduce this notion, dealing briefly with the numbers 0, 1, 2, 3, 4, 5, 6, 7, and 8. Specific attention exercises are necessary to make these ideas vividly meaningful, but even the brief abstract comments point to a profoundly different way of understanding mathematics and science than has been practiced during the past five centuries of modern science:

Zero refers to the unknown origin or source (*Nous*, *Noumenal*) of all else I believe and do—the point of no dimensions—into which I may inquire, only if I can divide my

One attention (or any other *Nominal* category in which I am trapped) in

Two (entering the realm of the *Ordinal*—first, second, etc.), turning—imploring—part of the attention toward the origin (the Russian Orthodox continual Prayer of the heart in the midst of outer activity is one way).

Through the first-person struggle between the passive outflowing attention and the active turning toward the origin (or the second-person struggle between me and my wife, or . . .), I may experience yet another Other, a third . . .

Three—a reconciling force that sometimes appears in a timely fashion in an *interval* in real situations at critical moments, generating creative synthesis.

Remembering the numbers *0, 1, 2*, and *3* can remind me, not only of quantitative counting, and not only of qualitatively different types of numbering (nominal, ordinal, interval), but also of first-person awareness-transforming exercises I may try right now (how to turn my attention? how to experience the origin?, etc.). Of course, at the outset of first-person research/practice, we do not begin with any clear reason why it is important to exercise in this way, nor any clear sense of how; so our exercise soon ceases or enters the realm of the merely imaginary; unless we find one or more communities of inquiry with longtime masters and mistresses of traditional liberating disciplines (Torbert, 1997) who repeatedly intervene at appropriate intervals in questionable ways—be they Vajrajana Buddhists (Trungpa, 1970), Quaker Friends

(Nielsen, 1996), Postmodern Platonic Jewish gay philosophers (Kaplan, 1996), or students of students of Gurdjieff (Pentland, 1997).

We can use (or can we?) the number *Four* to help us, both in our own first-person exercise and in seeing analogies among the first-, second-, and third-person scales of Developmental Action Inquiry. Usually, when we wake up momentarily to our actual existential condition, we realize we've been immersed in a single territory of experience (e.g. a dream, an action, or an impression of the outside world—what the poet Blake called single vision and Newton's sleep). The moment of awakening, as we can verify from our own experience (Torbert, 1991, ch. 13), involves an apperception of at least two territories of experience, and this, in turn, can become an opportunity to cultivate a taste for Blake's fourfold vision of the interplay among four territories of experience. The

Four—territories (archetypal, analogical wholes) can be named in a variety of ways; from a first-person point of view, they can be named: (1) the outside world; (2) one's own behavior as sensed by oneself; (3) one's thought/feeling; (4) one's transconceptual awareness that can register one or more of the other territories as well as its own changing nature.

Through seeking contact in the present with each of these four territories of experience, and all at once, we can test whether they exist (Torbert, 1973); we can test what we mean by being awake; and we can test whether we are acting in harmony with our espoused purposes and strategies (are we doing what we say, and saying what we mean?). Figure 1 suggests in the most skeletal outline how we will see organizational and interpersonal processes through a fourfold awareness (see Fisher and Torbert, 1995; Torbert, 1997 for further discussion and illustration).

In this representation, the four territories are shown in reverse order from the first listing above; thus 'Visioning', etc. properly occurs through the medium of transconceptual awareness, and Assessing, Inquiring, and Effecting/Sensing involve reaching into the outside world.

It is an unusual trick for any of us to distribute and circulate our attention so as to be in contact with all four territories at once (indeed, in thought and action in durational time they occur either fragmentarily or sequentially—e.g. from Visioning to Strategizing to Performing to Assessing, and then recursively). An even trickier thing is to be aware of transformations across the four territories as these occur—say, from some vague (or spuriously specific) intuition of one's transpersonal mission, through some implicit or explicit strategic logic, into verbal or non-verbal practice, and then into effects on others—and to diagnose and correct significant unintended

Figure 1 Analogous terms for the four territories of experience

Organizing	**Interpersonal speaking and listening**	**Personal awareness**
I. Visioning	Framing	Intending/Attending
II. Strategizing	Advocating	Thinking/Feeling
III. Performing	Illustrating	Acting/Embodying
IV. Assessing	Inquiring	Effecting/Sensing

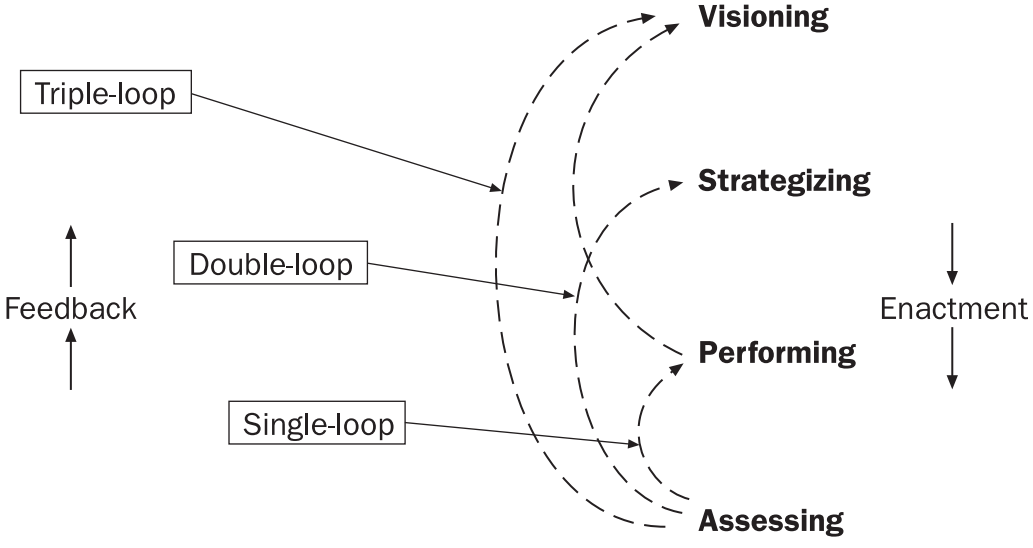
incongruities (Torbert, 1989). Likewise, it is difficult and unusual for a group, organization or society to be aware of these transformations as it functions. So difficult is this, and so at odds with our conventional modern views of social science, of political power, and of personal conduct, that few today recognize or take up this challenge, even though it is implicit in the calls for learning organizations (Senge, 1990) and knowledge-creating companies (Nonaka and Takeuchi, 1995).

Put differently, the person, the organization, or the institution must become capable of generating and responding to:

1. not only first order, single-loop feedback—e.g. changing specific behavioral practices to achieve desired outcomes, thus achieving greater congruity between two territories of experience; but also
2. second order, double-loop feedback—e.g. changing one's way of strategizing and, thus, the way one defines and measures practices and results, thus achieving greater congruity across three territories of experience; and
3. third order, triple-loop feedback—e.g. changing the very quality of one's present awareness, of one's actual visioning (Deutsch, 1966; Bateson, 1972; Hawkins, 1991; Bartunek and Moch, 1994; Torbert, 1994b; Nielsen, 1996) to include all four territories of experience, thus increasing the likelihood of achieving congruity across all four.

Using the organizational terms for the four territories of experience, single-, double-, and triple-loop learning can be conceptually visualized as in Figure 2 below. So difficult is the interweaving of single-, double-, and triple-loop feedback across the first-, second-, and third-person scales that it requires multiple, gradual transformations of a person's or organization's worldview and pattern of enactment before the person, organization, or science becomes truly committed in practice to continual

Figure 2 Enactment and single-, double-, and triple-loop learning across the four territories of experience



quality improvemen; to becoming a learning organization; or to becoming a real-time community of inquiry (Fisher and Torbert, 1995). According to third-person developmental research, only a minority of adults (approximately 30%) currently evolve to the Achiever stage (see Table 1), where they achieve the capacity to digest single-loop feedback regularly and respond to it effectively. A much smaller minority (less than 10%) currently evolve to the next stage—Strategist—where they achieve the capacity to occasionally digest and respond to double-loop feedback. And only a tiny minority (less than 1%) of adults currently develop a taste for continually offering and receiving timely, transforming triple-loop feedback at the Magician/Witch/Clown stage (Alexander and Langer, 1990; Miller and Crook-Greuter, 1994; Fisher and Torbert, 1995, ch. 11).

Developmental Theory, Seen From the Perspective of Action Inquiry

Let us review the bidding together to this point, and then try to count to *Eight* together. The early pages of this article point to the radically different spirituality, politics, ontology, epistemology, theory, and method of inquiry that Developmental Action Inquiry involves by contrast to other contemporary quantitative, qualitative, and action research paradigms. In the past several paragraphs, the reader has for the first time heard some concepts that relate directly to issues of work, management, and social science as we have heretofore known these (concepts such as feedback, learning organization, visioning and strategizing, and advocating and inquiring). The foregoing paragraph introduces the personal scale of developmental theory and points, through the analogical use of the term feedback, to the way in which each action logic (e.g. relatively reliable responsiveness to single-loop feedback at the Achiever stage) is lodged within a wider systems structure initially taken as fixed.

The distinctive feature of developmental theory (by comparison, say, to the Myers-Briggs Jungian typology) is that it shows (Kegan, 1982) how each such fixed structure of assumptions to which a person may be subject can become object for a newly evolving subject who evolves through exercising a more voluntary, more intense, more mutual action logic (e.g. how the goal-orientation of the Achiever can evolve to the more mutual occasional vulnerability and responsiveness to double-loop, structure-changing feedback at the Strategist stage). At each later stage or action-logic, the person becomes able to make one more significant distinction among primary aspects of reality and to balance the new relationships.

Let us see how we as humans can become capable of counting to *Eight*. The (*One*) undifferentiated Impulsive child comes to divide *self* clearly from *outside world* (*Two*) at the Opportunist stage, seeking control of outcomes (see Table 1). Next, usually in the pre-teen and early teen years, the youth evolves to the Diplomat perspective which further differentiates (1) *social/emotional expectations/norms* from (2) *one's own behaviour* from (3) *outside world* (*Three*), seeking to coordinate one's own behaviour and social norms for good results. At the Technician stage, the person ceases to be entirely subject to social norms and evolves an independent *thought-logic* which provides guidance amidst conflicting *norms*, *behaviours*, and *outside events* (*Four*). At the Achiever stage, the independent thought-logic ceases to be regulative and becomes a variable of a *subject* who coordinates *thought*, *norms*, *action*, and *outcomes*

(*Five*), but without regular questioning of frames. At the Strategist stage, the subject itself divides in two (now making *Six*). There is an implicate, observing, reflective, creative, frame-recognizing, future-oriented subject and an explicate, acting, habitual subject constrained by her or his own past experience. In Magician/Witch/Clown moments (*Seven*), three alchemical movements (active, passive, reconciling) interact in the four territories of experience. Then, a new octave begins with the generative Ironist who births and guides the developmental octave of children, adult volunteers, or new organizations (*Eight*).

Organizations do not today generally help individual adults develop capacities beyond Stage V. This is because the organizations themselves rarely develop the capacity for digesting and responding to double- and triple-loop feedback. General inspection of the organizational field, along with years of research and consulting (Torbert, 1976, 1987, 1991; Fisher and Torbert, 1995)—as well as the fact that most organizational theories do not mention anything like the later organizational development stages (*Seven* and *Eight*—*Six* is much espoused, rarely practiced long)—all support the inference that organizations are about as unlikely as persons to digest and respond to double- and triple-loop feedback. There is no quantitatively-validated third-person measure for developmental theory as applied to organizations; Rooke and Torbert (1998), to be discussed briefly below, comes closest to date.

It is important to highlight that this developmental octave is meant to be analogically applicable, not just to psycho/social/scientific phenomena, but to phenomena of all kinds—such as the musical octave, the colour spectrum, and to the nature of number itself, as is touched upon above (Bennett, 1983; McClain, 1978; Theon, 1979). Again, in Developmental Action Inquiry *analogical* theorizing about wholes and their relations of nesting, struggling, and cooperating (not *deductive* theorizing from axioms about variables, nor *inductive* reasoning) is taken as primary because this kind of thinking can be ridden beyond itself in each moment of thinking toward a wider awareness of the four territories of experience—both toward the phenomenal world and toward the noumenal working of our own attention. Moreover, as already mentioned, judgments about whether a given strategy or action is harmonious with, or discrepant from, a given purpose also require analogical thinking.

This emphasis on holistic, analogical, self-transcending thinking in real time is no doubt a key difficulty that obstructs more social science colleagues from taking an interest in Developmental Action Inquiry, even though such thinking is open to debate and empirical testing. For, first of all, analogical thinking is out of fashion in science and often considered sloppy and primitive. Second, American Academy of Management thought (unlike large areas of education, political philosophy, and psychology in the US and unlike European, Asian, Latin American, and African scholarship [when it is not merely an American derivative]) is peculiarly alienated from, and hostile to, the incomparably elegant and richly contested tradition of developmental theory, research, and practice. This tradition not only reaches back from Kegan (1994) through Piaget and Hegel to Plato and to Socrates' dialogues amid everyday life, but also through the Hindu and Buddhist traditions of eight stages of life, through tai chi to Taoism, etc. (Alexander and Langer, 1990; Wilber, 1995). Today, developmental theory (usually as formulated by Piaget or Kohlberg) is often dismissed as individualistic or hierarchical, when in fact, in the formulation

offered here, each later stage permits a practice that is more ecological (in both social and natural terms), more relational and mutual (in both political and spiritual terms), and more open to the unknown than earlier stages. Moreover, the analogy among personal, organizational, and epistemological logics-in-action highlights how critical any given organizational and cultural surround—and the action-logic of each political act—is in either encouraging or discouraging transformation by participants towards first-, second-, and third-person research/practice that generates single-, double-, and triple-loop feedback. Also, ironically, the sharper analogical awareness inherent in later action-logics sees the actual fragmented and chaotic swirl of action-logics from moment-to-moment within and around oneself, dissolving any pre-relativistic sense of individualism and hierarchy.

The significance of cultivating a double- and triple-loop action inquiry capacity in oneself, organizations, and social science is that, theoretically, only leaders and other organizational participants, consultants, or scholars with such capacities can reliably help organizations to transform toward such capacities and trace such transformation. In today's world the capacity to self-transform—while more closely aligning mission, strategy, performance, and outcomes—is arguably the key competence for continuing success in turbulent environments—whether we speak of businesses in the market, of approaches to social science at universities, or of our own personal, lifelong inquiries with our closest friends.

Data about, and Practice of, Developmental Action Inquiry

Recent studies provide some empirical confirmation for these theoretical propositions. Bushe and Gibbs (1990) found that eleven internal consultants measured at the Strategist stage in the Washington University Sentence Completion Form were perceived as more competent by other organizational members, and as playing more of a change management role, than fifty-three other consultants who scored at earlier stages of development. Torbert and Fisher (1992) and Rooke (1997) describe self-reflective activities in mini-communities of inquiry that managers or any other adult volunteers can engage in to support development from Achiever to Strategist, along with statistical results supporting the developmental efficacy of those activities.

Rooke and Torbert (1998) found that, in ten organizations observed over an average of 4.2 years, the five CEOs measured at the Strategist stage of development supported 15 progressive organizational transformations, with dramatic increases in business indicators of success, while the five CEOs measured at pre-Strategist stages supported a total of 0 progressive transformations and several instances of serious deterioration in business indicators. The developmental changes were measured independently by three trained raters who achieved a level of reliability beyond 0.9.

But let us look beyond third-person data to two much closer illustrations of practice guided by the Developmental Action Inquiry approach. First, how might a Developmental Action Inquiry consultant respond to the case, in Joe Raelin's Preface to this issue, of the Manufacturing Manager who visits the team that is supposed to be developing innovative procedures?

A Developmental Action Inquiry consultant or participant might first note the simple *Three*fold dynamics among active, passive, and reconciling in the short

exchange between the Team Leader and the Senior Manufacturing Manager. The Team Leader begins by representing the first, active force—the vision of a new way of working. The Senior Manager's first move is as second, passive, object-ing force. Then both of them continue in second-force mode, objecting to one another. More first force initiative and more third force reconciling are needed in the situation. Intervention by the consultant and/or the team members is needed. There has as yet been no true meeting—no alchemical transformation involving the three forces.

Looking more specifically, the Developmental Action Inquiry perspective shows the Team Leader oscillating between Strategist-stage rhetoric about empowerment and using the team for live quality improvement, on the one hand, and, on the other hand, Diplomat-stage withdrawal from conflict with the Senior Manager, instead of improving the quality of the exchange on the spot. The Senior Manager primarily exhibits Technician-stage characteristics in his categorical claim that the proposal won't work, in his emphasis on a precise plan to cut . . . costs, and in his lack of action initiative to improve the present interchange. His espoused commitment to working with things as they change has an Achiever-stage quality about it, but in practice he is not doing so (yet) in this situation.

The Developmental Action Inquiry consultant has a wide array of possible interventions, depending on many elements of his/her contextual and implicit knowledge about the developmental timing of the company, the team, and the project. Each effective intervention will be conducted as a form of inquiry as well as a form of influence. For example, if there is a long-term vacuum of legitimate, transformational authority in the company, the consultant may take a rather parental role, saying:

> Ending the meeting now is just going to crystallize the bad feeling here. If either of you lets it end now, you are guilty of poor quality improvement leadership. While you each consider how you can take a more constructive initiative, we need to hear from the team members. [*Turning to the team members*] Are you strongly committed to the design you've come up with? Do you see it meeting the Senior Managers goals? If not, can it be redesigned without violating its spirit?

As this particular intervention illustrates, the Developmental Action Inquiry approach does not only encourage processing and reflection and empowerment of others, but is also willing to blend powerful action moves with feedback, as participants in ongoing action situations inevitably must.

Next, I offer a second up-close illustration—this one of the interweaving of single-, double-, and triple-loop feedback and transformation. The illustration comes from my personal journal of a conversation at my home when Peter Reason arrived from Ireland for the 1997 Academy of Management meeting in Boston, where the symposium that led to this issue was offered. My brief version of Peter's more textured stories illustrates his interweaving, both in leisure and at work, of a political Participatory Action Research approach, with his own, second-person Cooperative Inquiry approach, and the kind of first-person here-and-now awareness of Developmental Action Inquiry. These stories also illustrate a light-heartedness and a light touch that are cultivated by the humility of repeatedly observing one's own incongruities during the course of the meditative practice of living one's life. I invite readers to hypothesize at what points in the following stories single-, double-, or triple-loop feedback and awareness may be operating:

8/8/97
Peter Reason arrives at my home in Boston lithe and copper, having rowed ashore from his sailboat off the west coast of Ireland this morning, in order to fly here for the 1997 Academy of Management meetings.

In addition to presenting his OD&C Division Invited Address 'Revisioning Inquiry for Action: A Participatory View', Peter is currently engaged in a number of concurrent and overlapping inquiry practices. One is his two-year Cooperative Inquiry with a group of longtime professional colleague/friends into what exquisite performance may entail, not just in the arts or in one's vocation, but also in the interstices of daily life.

Several of Peter's Cooperative Inquiry colleagues were with him on this sailing expedition. He regales us, using exquisite gestures, tones and facial expressions, with the inner challenges he repeatedly experienced as—first, his dinghy was knocked off the sailboat by a swell—next, one friend's cellphone, that Peter had rather objected in principle to having on board, got them the help they needed—then, a day later, when they were caught in a foggy dead calm and Peter tried to start up the sailboat motor, it failed to catch for the first time ever. Fit to burst, but aware of being exquisitely eyed by a Gestalt therapist, a Chan. master, and an organizational consultant, Peter confessed that he felt like throwing a tantrum and bursting into tears. Everyone laughed heartily and that moment passed into the next, without leaving a trace.

A few weeks before that, Peter was in Colombia for the Worldwide Congress on Participatory Action Research, which drew—in addition to the 1,700 participants—Presidential videos from Brazil and political pleas on behalf of PAR researchers murdered only two weeks before and on behalf of the right to a natural death in Colombia (where one-quarter of the population dies violently). As the conference continued, Peter became increasingly concerned with its non-participative, non-collaborative, white-males-at-the-podium quality . . . to the point where he mounted the dais and expressed just what the nature of his concern was. In the midst of his intervention, he realized he had no idea what do next, and then, almost simultaneously, that he needed to pee and it was lunch time. He finished with these points and walked off toward the bathroom. He was halfway along the aisle when the English-to-Spanish simultaneous translation ended and the whole crowd burst into laughter and dissolved toward lunch.

In the hallway, Peter asked an African woman if she would chair the next session (when he was to be one of eight [male] reporters on key issues that had emerged), and then went out shopping. Upon his return, he found the African woman starting the next session, surrounded by sisters from Asia, Europe, and Latin America who brought written notes from the floor. First, key questions were volunteered and rapidly rank ordered by vote of the whole body. The rest followed naturally.

Who knows how many incongruities are suffered and how many instances of single-, double-, and triple-loop feedback and of exquisite performance are exhibited in these cases? Who can imagine by what disciplines to cultivate such attending, thinking, feeling, acting, and effectuating?

So long as social science approaches do not develop theory, methods, data, and reporting vehicles that open toward triple-loop, self-transforming action inquiry, practitioners will do well to question the value of social science for their activities.

Comparing Developmental Action Inquiry to Empirical Positivism, Action Learning, Action Science and Cooperative Inquiry

Just how far is social science currently from opening toward first-, second-, and third-person triple-loop action inquiry? Argyris (1971, 1980) made powerful and cogent

arguments beginning a quarter of a century ago about just how far. Empirical Positivist science is an institution/paradigm primarily dedicated to digesting single-loop feedback, after the act, from third-person studies in order to make universalizable (not timely) conclusions with valid certainty, all under conditions of hierarchical control by researchers of subjects and of dissociation between research and action. According to the developmental octave of social scientific paradigms, Empirical Positivism requires four transformations before it addresses the full field of Developmental Action Inquiry. At the US Academy of Management, integrating quantitative and qualitative methods through a Multi-method Eclecticism is currently in fashion, and Postmodern Interpretivists have been visible and vocal during the 1990s.

I interpret the practice of Action Learning and Action Research as pedagogical and research reactions to Positivism that switch the focus from impersonal research for the sake of valid, general theory to personal learning for the sake of more effective local practice (see Table 1 in the Preface for comparison of characteristics of Developmental Action Inquiry with characteristics of Action Learning and Action Research). Like Positivism, Action Learning often focuses on single-loop learning (e.g. new skills) in second-person research/practice contexts (classes or workshops); when individuals then try these new skills in their own work settings, this often represents first-person, double-loop learning because taking the risk of intentionally experimenting with new behavior on the job may be a radical shift in approach. Depending on the specific setting and researchers, such work contains a mixture of Multi-method Eclectic, Postmodern Interpretivist, and Cooperative Ecological Inquiry qualities.

Argyris' version of Action Science (Argyris, Putnam and Smith, 1985) is intended to encourage double-loop learning among second-persons in real time, as well as third-person data and theory after the act. This is a significant step toward Developmental Action Inquiry. But Argyris (personal communication) is ambivalent about the relevance of first-person, emotional research. He argues broadly against developmental theory (on the grounds that its practitioners make stage attributions without public testing with respondents—an argument that doesn't hold in the case of Developmental Action Inquiry where such attributions are tested directly with respondents and where participants often diagnose themselves in ongoing dialogue in mini-communities of inquiry). Also, as mentioned earlier, Argyris does not explore the notions of triple-loop awareness or timeliness. Moreover, his tight control of theoretical domain of discourse and his bivariate models (Model I and Model II) themselves contribute to win–lose dynamics. Consequently, his work has some elements of Cooperative Ecological Inquiry mixed with Multi-method Eclecticism and a Positivistic tendency toward inductive–deductive theories of relationships among variables and of what constitutes universalizable generalizations. Although his work is also interpretivist in nature (it examines persons' espoused theories and theories-in-use), it is emphatically *not* Postmodern Interpretivist because Argyris' is the only normative interpretive system visible.

Peter Reason's and John Heron's Cooperative Inquiry (Reason, 1994, 1995; Heron, 1996) works with a full sense of first- and second-person research/practice, creating mini-communities of inquiry in their practice (such as the Reason inquiry with colleagues into exquisite performance described above) and describing more complete and more profound guidelines for creating such communities of inquiry

Table 2 Seven ways Developmental Action Inquiry is distinctive from other action methods

1. DAI seeks to blend and align first-person, subjective inquiry; second-person, intersubjective inquiry; and third-person, objective inquiry.
2. DAI seeks incongruities and improved harmony among four territories of experience—intuitive vision, rational strategy, artistic performance, and concrete outcomes.
3. DAI operates at the personal, group, organizational, social, and ecological scales.
4. DAI seeks to blend single-loop, double-loop, and triple-loop feedback and learning in ongoing, real-time settings.
5. DAI asks not only about the analytic validity of theory, data, and written reports, but also and equally about their transformational action efficacy.
6. To engage in DAI involves the following steps (each of which becomes clarified, revised, re-committed-to, or abandoned with each further step):
   (a) affirming the Vision of a lifetime of self-transforming action and inquiry in association with friends of similar commitment and with the help of liberating spiritual/performance disciplines that exercise one's attention to encounter and span the four territories of experience from moment-to-moment;
   (b) developing and testing in one's own practice an analogical theory of the timing of processes (such as developmental theory applied to number, music, colour, personal and organizational development, etc.);
   (c) developing a kind of performance artistry in movement, tone, and speech that is simultaneously vigilant and spontaneous, and that blends one's own idiosyncratic passion with archetypal-observational dispassion and with timely compassion;
   (d) developing dialogical and empirical measurement methods for assessing success in the object-ing world.
7. In numerical and quantitative terms, engaging in DAI requires:
   (a) first, foremost, and always, the effort to experience the noumenal—*0* (the origin, chaos, the source, the undifferentiated aesthetic continuum);
   (b) second, the effort to make (and to constantly re-make) a *nominal distinction* (e.g. dividing the attention among the four territories of experience, in order to recount them and test for a primitive, intuitive, analogical sense of alignment or incongruity);
   (c) third, the effort to make *analogical ordinal distinctions* (e.g. among developmental notes, so that one can act strategically in time); and
   (d) fourth, *interval* level distinctions that can be of use in assessing outcomes.

than anyone else has. They also develop a notion of interactions among four types of knowledge very similar to (and interestingly different from) the action inquiry notion of four territories of experience. They name their four: Experiential, Presentational, Propositional, and Practical knowledge—a way of distinguishing that highlights the spectrum between implicit and explicit knowing and is thus particularly helpful for supporting development to the Strategist and Magician logics-in-action. This is a giant step toward Developmental Action Inquiry and constitutes the fullest realization of the Cooperative Ecological Inquiry paradigm of which I am aware. But Reason and Heron have attended less to third-person research/practice, either in the sense of influencing whole organizations or in the sense of developing tightly linked, quantitatively rigorous empirical tests of theory—a challenge that

Developmental Action Inquiry does choose to address and seeks to interweave with the encouragement of first- and second-person research/practice. Bradbury (1998) is the first to name her work on the Swedish Natural Step Cooperative Ecological Inquiry, and she explores the links between creating micro-communities of inquiry and macro-societal-global change.

Developmental Action Inquiry deals with all the Action Science and Cooperative Inquiry concerns and owes much to Argyris, Reason and Heron for their ways of conceptualizing and enacting their forms of research/practice. At the same time, it attempts to interweave first-, second-, and third-person research/practice in ways that open ordinary, everyday settings to such research/practice, while simultaneously recognizing the long, paradoxical, ironic, multiply-transformational, developmental journey required before one can expect widespread personal, organizational, or public commitment to such notions.

Action Learning, Action Research, Action Science, and Cooperative Inquiry all proceed through alternations between action and reflection. This seems to be a useful way to begin cultivating persons' capacity for reflection related to their own actions. By contrast, Developmental Action Inquiry understands all human action as a blending of action and reflection, the ultimate challenge at all levels of organizing being to develop a clearer awareness of how they *actually* blend and how they *optimally* blend in this time and place, so that one can intervene now.

By way of summary and conclusion, Table 2 highlights the distinctive characteristics of Developmental Action Inquiry.

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Integrating Action and Reflection Through Co-operative Inquiry

Abstract *Co-operative inquiry is a radically participative form of inquiry in which all those involved are both co-researchers and co-subjects. The methodology of co-operative inquiry is set out in a 'Layperson's Guide' which might be used to introduce the method to a new group. This is followed by a reflection on the learning process of an inquiry group, particularly the process of research cycling, the importance of the peer group, and the paradoxical self-reflexive quality of attention. Finally, co-operative inquiry is compared with other action approaches.*

Co-operative inquiry is an inquiry strategy in which all those involved in the research endeavour are both co-researchers, whose thinking and decision-making contributes to generating ideas, designing and managing the project, and drawing conclusions from the experience; and *also* co-subjects, participating in the activity which is being researched. The arguments which support this approach—the participative worldview, the human person as agent, critical subjectivity, the political, epistemological ecological and spiritual dimensions of participation, etc.—have been explored extensively in earlier writing; the methodology itself and the choices facing an inquiry group have been described in considerable detail (Heron, 1996; Heron and Reason, 1997; Reason, 1998a). Later in this article I shall discuss how co-operative inquiry compares with other approaches to collaborative or participative research.

Those who advocate co-operative inquiry (and other forms of collaborative action research) are in pursuit of two important purposes. The first purpose is to articulate and offer democratic and emancipatory approaches to inquiry—relinquishing the monopoly of knowledge held traditionally by universities and other institutes of 'higher learning', and helping ordinary people regain the capacity to create their own knowledge in the service of their practical purposes. At the same time our purpose is to contribute to a complete revision of the western mindset—to add impetus to the movement away from a modernist worldview based on a positivist philosophy and a value system dominated by crude notions of economic progress

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toward an emerging 'postmodern' worldview.[1] This article aims to point in both these directions by providing first a brief or 'layperson's'[2] guide to co-operative inquiry, which could be used as an introductory document for one wishing to establish a co-operative inquiry group. This account is intentionally non-technical: the reader concerned with epistemological and methodological issues is invited to consult other publications as referenced. The second part of this article draws on experience of co-operative inquiry to explore some of the qualities of an effective inquiry group which, I argue, help us point toward some principles of learning and of creating practical knowing from experience.

A Layperson's Guide to Co-operative Inquiry

What is Co-operative Inquiry?

Co-operative inquiry is a way of working with other people who have similar concerns and interests to yourself, in order to:

- understand your world, make sense of your life and develop new and creative ways of looking at things;
- learn how to act to change things you may want to change and find out how to do things better.

Research is usually thought of as something done by people in universities and research institutes. We think there is a researcher who has all the ideas, and who then studies other people by observing them, asking them questions, or by designing experiments. The trouble with this way of doing research is that there is often very little connection between the researcher's thinking and the concerns and experiences of the people who are actually involved. People are treated as passive subjects rather than as active agents.

We believe that good research is research *with* people rather than *on* people. We believe that ordinary people are quite capable of developing their own ideas and can work together in a co-operative inquiry group to see if these ideas make sense of their world and work in practice.

A second problem with traditional research is that the kind of thinking done by researchers is often theoretical rather than practical. It does not help people find out how to act to change things in their lives. We believe that the outcome of good research is not just books and academic papers, but is also the creative action of people to address matters that are important to them. Co-operative inquiry is thus a form of what is called action research: it is concerned with revisioning our understanding of our world, as well as transforming practice within it.

In co-operative inquiry a group of people come together to explore issues of concern and interest. All members of the group both contribute to the ideas that go into their work together, and also are part of the activity that is being researched. Everyone has a say in deciding what questions are to be addressed and what ideas may be of help; everyone contributes to thinking about how to explore the questions; everyone gets involved in the activity that is being researched; and finally everybody has a say in whatever conclusions the co-operative inquiry group may reach. So in co-

operative inquiry the split between 'researcher' and 'subjects' is done away with, and all those involved act together as 'co-researchers' and as 'co-subjects'.

These are some examples of co-operative inquiry groups:

> A group of general medical practitioners formed a co-operative inquiry group to develop the theory and practice of holistic medicine. They built a simple model of holistic practice and experimented with it in their own practice. Building on this work, a group of general and complementary medical practitioners worked together to explore how they might effectively work in an interdisciplinary fashion (Heron and Reason, 1985; Reason, 1988, 1991; Reason et al., 1992).
>
> A group of obese and post-obese women explored their experience together, looking in particular at how they were stereotyped in society, and how it was difficult for them to obtain appropriate attention from doctors and other medical people (Cox, 1996). This is one of several inquiries in which groups of people with a particular physical or medical condition have worked together to take charge of how their condition is defined and treated. Co-counselling, a form of peer self-help psychotherapy, has also used co-operative inquiry to deepen understanding of its processes and methods.
>
> Two black social work teachers established inquiry groups of black social work students, practitioners and managers to explore their experience. They looked at relationships between black people at work, particularly the experience of black managers and subordinates working together; and how a creative black culture could be generated (Aymer, in preparation; Bryan, in preparation).
>
> Several inquiry groups have met to explore ceremony, mystical and subtle experience in an attempt to create forms of spiritual practice which are appropriate to present times (Heron, 1998).
>
> Several groups have formed to explore questions of gender, in particular experience of women and men at work. One inquiry looked at how black women might learn to thrive, as well as survive in British organizations (Douglas, 1999); another explored the experience of young women managers in primarily male organizations (Onyett, 1996); and another is looking at whether men in organizations need to explore questions of their gender in the workplace (not published).

How a Co-operative Inquiry Group Works

Co-operative inquiry is a systematic approach to developing understanding and action. And while every group is different, each one can be seen as engaged in *cycles of action and reflection*, each made up of four *phases*, which go something like this.

After a group of people with a common interest have got together (how this can be done is discussed later) the first task for this group of 'co-researchers', what we can call Phase One, is to agree the issues they wish to explore. They talk about their interests and concerns, agree on the focus of their inquiry, and develop together a set of questions or propositions they wish to explore. They agree to undertake some action, some practice, which will contribute to this exploration, and agree to some set of procedures by which they will observe and record their own and each other's experience.

> For example, a group of health visitors in south west England were invited by one of their colleagues to form an inquiry group to explore the sources of stress in their work. After much resistance to the idea that they could be 'researchers', the group decided to explore

> the stress that comes from the 'hidden agendas' in their work—the suspicions they had about problems such as depression, child abuse, and drug taking in the families they visit, which are unexpressed and unexplored (Traylen, 1988, 1989).

In Phase Two the group apply their agreed actions in their everyday life and work: they initiate the actions and observe and record the outcomes of their own and each other's behaviour. They may at first simply watch what it is that happens to them so they develop a better understanding of their experience; later they may start trying out new forms of action.

> The health visitors first explored among themselves their feelings about these 'hidden agendas' and how they managed them at present. They then decided to experiment with confronting them. They practised the skills they thought they would need through role play, and then agreed to try raising their concerns directly with their client families.

In Phase Three the co-researchers become fully immersed in their experience. They may become more open to what is going on and they may begin to see their experience in new ways. They may deepen into the experience so that superficial understandings are elaborated and developed. Or they may be led away from the original ideas and proposals into new fields, unpredicted action and creative insights. It is also possible that they may get so involved in what they are doing that they lose the awareness that they are part of an inquiry group: there may be a practical crisis, they may become enthralled, they may simply forget. This phase is in some ways the touchstone of the inquiry method, and is what makes it so very different from conventional research, because here people are deeply involved in their own experience, so any practical skills or new understandings will grow out of this experience.

> The health visitors' experience of trying out new ways of working with clients was both terrifying and liberating in ways none of them had expected. On the one hand they felt they were really doing their job; on the other hand they were concerned about the depth of the problems they would uncover and whether they had adequate skills to cope with them. The woman who had initiated the project, in particular, was anxious and had disturbing dreams. They found they had to keep in good contact with each other to provide support and reassurance as they tried out new behaviours.

After an agreed period engaged in Phases Two and Three, the co-researchers re-assemble to consider their original questions in the light of their experience—this is Phase Four of the inquiry. As a result they may change their questions in some way; or reject them and pose new questions. They then agree on a second cycle of action and reflection. They may choose to focus on the same or on different aspects of the overall inquiry. The group may choose to amend or develop its inquiry procedures—forms of action, ways of gathering data—in the light of its experience of the first cycle.

> The health visitors came back together and shared their experience, helping each other understand what had taken place and developing their strategies and skills at confronting hidden agendas. After several cycles they reflected on what they had learned and wrote a report which they circulated to their managers and colleagues.

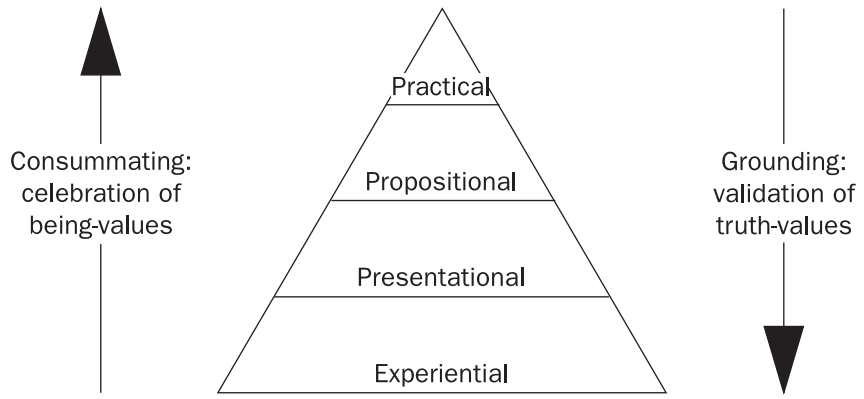
A co-operative inquiry often engages in some six to ten cycles of action and reflection. These can take place over a short workshop or may extend over a year or more, depending on the kind of questions that are being explored.

The Types of Knowledge a Co-operative Inquiry Group Can Create

Co-operative inquiry involves at least four different types of ways of knowing. We call this an 'extended epistemology'—*epistemology* meaning a theory of how you know, and *extended* because it reaches beyond the primarily theoretical knowledge of academia.[3] *Experiential knowing* is through direct face-to-face encounter with a person, place or thing; it is knowing through empathy and resonance, that type of in-depth knowing which is almost impossible to put into words. *Presentational knowing* grows out of experiential knowing, and provides the first form of expression through story, drawing, sculpture, movement, dance and so on. *Propositional knowing* 'about' something, is knowing through ideas and theories, expressed in informative statements. *Practical knowing* is knowing 'how to' do something and is expressed in a skill, knack or competence.

In co-operative inquiry we say that knowing will be more valid—richer, deeper, more true to life and more useful—if these four ways of knowing are congruent with each other; if our knowing is grounded in our experience, expressed through our stories and images, understood through ideas which make sense to us, and expressed in worthwhile action in our lives. You can see that this was so for the health visitors in their work together. The relationship between the four ways of knowing is portrayed in Figure 1.

Figure 1 The relationship between the four ways of knowing



Source After Heron, 1996.

Other Ways to Improve the Quality of Knowing and Action

You will see by now that co-operative inquiry is a radically different way of doing research. It is based on people carefully examining their own experience and action, in collaboration with others who share similar concerns and interests. But, you might say, isn't it true that people can fool themselves about their experience? Isn't this why we have professional researchers who can be detached and objective? The answer to

this is that certainly people can and do fool themselves, but we find that they can also develop their attention so they can look at their beliefs and theories critically and in this way improve the quality of their claims to knowing. We call this 'critical subjectivity'; it means that we do not have to throw away our living knowledge in the search for objectivity, but are able to build on it and develop it.

We have developed a number of procedures that can be part of a co-operative inquiry which can help improve the quality of knowing. These are some of them.

1. Research cycling It should be already clear that co-operative inquiry involves going through the four phases of inquiry several times, cycling between action and reflection, looking at experience from different angles, developing different ideas, trying different ways of behaving. The health visitors went through four or five cycles as they experimented with different ways of relating to their clients. Research cycling can be *convergent*, in which case the co-researchers look several times at the same issue, maybe looking each time in more detail; or cycling can be *divergent*, as co-researchers decide to look at different issues on successive cycles. Many variations of convergence and divergence are possible in the course of an inquiry. It is up to the group to decide which one is appropriate for each piece of research.

2. Balance of action and reflection Too much time in reflection is just armchair theorizing; too much time in action is mere activism. But it may be important, particularly in the early stages, to spend considerable time reflecting in order to gather together experience; and it may be important later to concentrate on trying out different actions to see how they work. Each inquiry group needs to find it own balance between action and reflection, depending on the topic being explored.

3. Developing critical attention Co-researchers need to develop the ability to look at their experience with affectionate curiosity with the intention of understanding it better. They need to be not so attached to what they have been doing that they cannot look at it critically. The process of research cycling is a discipline which helps people develop this ability. As the group matures it may be helpful to use constructive challenge in order to hone people's critical attention. For example, in the Devil's Advocate procedure each person takes a turn in saying what they believe they have discovered, and other group members challenge their statements, trying to find other explanations for their claims, or evidence which shows their claims are not based in experience.

4. Authentic collaboration It is really important that members of a co-operative inquiry group develop ways of working which are collaborative. You cannot really call it co-operative inquiry if one or two people dominate the group, or if some voices are left out altogether. This does not mean that everyone has to have exactly the same role: it may be that one person in the group has more knowledge of the subject, another knows more about the inquiry method, and yet another may really help the group learn together. But it does mean that specialist knowledge is used in the service of the group. In order to develop equal contributions within a group it may be useful to rotate formal leadership round the group; to have 'rounds' in which everyone can have a say about the topic being discussed while the rest listen; and regular review periods where all group members can say how they feel about the way

the group is working. (It is also important to note that there may be people outside the inquiry group who are affected by what it does; while they cannot be full co-researchers, they too should be approached in the spirit of co-operation and dialogue.)

5. Dealing with distress Co-operative inquiry can be an upsetting business. If the co-researchers are really willing to examine their lives and their experience in depth and in detail, it is likely that they will uncover things they have been avoiding looking at and aspects of their life with which they are uncomfortable. Indeed, many inquiry groups are set up to explore these kinds of issues. So the group must be willing to address emotional distress openly when it arrives: to allow the upset persons the healing self-expression of grief, anger or fear. Further, it may well be right for a group to spend time identifying the emotional disturbances within the group which have not yet been expressed, and providing space for this to happen. If the group does not pay attention to distress management, it is likely that the findings will be distorted by the buried emotions.

6. Chaos and order[4] Clearly co-operative inquiry can be seen as an orderly process of moving through cycles of action and reflection, taking account of experience in one cycle and applying it to the next. And so it is. But co-operative inquiry is also about intuitive discovery, happenstance and synchronicity. It is sometimes about throwing all caution to the winds in a wild experiment. The best inquiry groups find a balance between chaos and order. If the group is really going to be open, adventurous and innovative, to put all at risk to reach out for the truth beyond fear and collusion, then once the inquiry is well under way, divergence of thought and expression is likely to descend into confusion, uncertainty, ambiguity, disorder, and perhaps chaos, with most if not all co-researchers feeling lost to a greater or lesser degree. There can be no guarantee that chaos will occur; certainly one cannot plan it. The key validity issue is to be prepared for it, to be able to tolerate it, to go with the confusion; not to let anxiety press for premature order, but to wait until there is a real sense of creative resolution.

Practical Issues in Setting Up an Inquiry Group

Initiation Most inquiry groups are initiated by one or two people who have enthusiasm for an idea they wish to explore. They are quite often engaged on a research degree and are attracted to co-operative inquiry as a means of doing research; but they might just as well be members of an interest group—a patient's group, a women or minority person's group, a professional interest group—who see that co-operative inquiry might be a way of moving forward their interests.[5]

Establishing a group The initiators' first task is to gather together a group of people who will be interested in joining the project. Sometimes the group is self-evidently formed, but more often it is recruited by some form of invitation—face to face conversation or a circular letter. For example the black social work teachers mentioned earlier invited social work managers, practitioners and students to a day-long meeting to discuss mutual interests and propose the establishment of inquiry groups. Groups of up to twelve persons can work well. Below six is a little too small,

cutting down in variety of experience. Groups above twelve need more time and particular care to develop a collaborative ethos.

Contracting This is possibly the most important aspect of the establishment of a group: it is really important that as far as is possible people have an opportunity to define the inquiry agenda and establish the process of the group. But this does not mean that they have to start from a blank sheet: usually the initiators put forward some proposal in a letter inviting people to a meeting to discuss the possible formation of a group. The meeting can explore the following agenda:

(a) Welcome and introductions, helping people feel at home.
(b) Introduction by initiators: what we are interested in researching.
(c) People discuss what they have heard informally in pairs, followed by questions and discussion.
(d) Introduction to the process of co-operative inquiry.
(e) Pairs discussion followed by questions and discussion.
(f) Decision time: who wishes to join the group?
(g) Practical discussion: dates, times, financial and other commitments.

It may be that full discussion of items (a) to (e) is as far as a group can go in one meeting, and a second meeting is needed for decision-making and practical arrangements.

Devising an overall research plan Most groups agree to a programme of meetings arranged so there is sufficient time for cycles of action and reflection. A group wishing to explore activities that are contained within the group, such as meditation skills, may simply meet for a weekend workshop which will include several short cycles of practice and reflection. But a group which involves action in the external world will need to arrange longer cycles of action and reflection with sufficient time for practical activity. The holistic doctors' group met for a long weekend to reflect after every six weeks of action on the job; the health visitors for an afternoon every three weeks or so. An inquiry into interpersonal skill met for a weekend workshop at the home of two of the participants and then for a long afternoon and evening every month to six weeks, finishing with another residential weekend workshop.

Roles It is helpful to agree early on how roles will be distributed. If the initiator is also to be group facilitator that should be made clear. It may be helpful to identify who has skills in group facilitation, inquiry facilitation, management of differences, working with distress and so on and share out roles appropriately. Decide if you wish to be fully democratic and rotate leadership, or if you would prefer one or two people to facilitate on behalf of the group. And so on.

Groundrules You may wish to agree groundrules, particularly to establish equality of contribution among members, and to preserve confidences within the group.

Writing It is helpful to decide who is the audience for your research early on. Is it just for yourselves, or do you wish to influence some outside persons? If you want to produce a written report or article, it is worth discussing who will write it and on what basis. Do all members of the group have to see and agree it before it can be sent out?

Or is it acceptable for one or two people to write their own report based on the group experience? We have found it helpful to adopt the rule that anyone can write whatever they like about the group, so long as they state clearly who was the author and whether other group members have seen and approved the text.

The Learning Process of an Inquiry Group

The previous section has set out in non-technical terms the basic structure and process of a co-operative inquiry group. I now turn to a reflection of what I feel I have discovered about the process of learning that takes place in such a group. I have initiated and facilitated some six long-term co-operative inquiry groups and numerous short co-operative inquiry workshops. In addition my educational practices are based on the philosophy of mutual inquiry. From this experience it seems that three simple yet subtle processes form the basis of practical learning in co-operative inquiry. They form the essence of what may be called a learning organization or community of inquiry. First, inquiry involves a *process of iteration*: learning takes place through inquiry cycles of action and reflection. Second, this iterative learning takes place best in a context of a *co-operative peer group* that can provide mutual support and challenge. Third, over time, co-researchers may develop a quality of *self-reflective inquiring attention* which shifts their focus from seeking a desired outcome to the process of learning itself.

Cycles of Action and Reflection

The cycles of action and reflection of a co-operative inquiry can take many different forms. Thus the inquiry with medical practitioners into the theory and practice of holistic medicine (Heron and Reason, 1985; Reason, 1988) took place over six cycles, with residential workshops for reflection and theory building interspersed with six weeks of reflective action in the surgery. Since a major purpose of this inquiry was to explore the possibility of holistic practice in the context of the British National Health Service, it was essential that the action phase took place 'on the job' in the doctors' surgeries. In contrast, inquiries exploring transpersonal experience, meditative practice and similar disciplines can be held in workshop or retreat settings at which both action and reflection can take place, as for example the inquiries into transpersonal experience initiated by John Heron at the International Centre for Co-operative Inquiry in Tuscany, Italy (Heron, 1997). The principle of research cycles can also be applied to educational programmes which embrace inquiry principles: for example our postgraduate programmes at the Centre for Action Research in Professional Practice at the University of Bath are structured so that students bring accounts of their practice to each workshop, and leave with an appropriate plan for further inquiry (Centre for Action Research in Professional Practice, 1998).

Research cycling is fundamental not only to co-operative inquiry, but more generally to the strategies of action research and action learning represented elsewhere in this special issue, as well as to descriptions of experiential learning and psychotherapy (e.g. Hampden-Turner, 1970; Kolb, 1984; Perls et al., 1951). Action science writing contains references to single and double-loop learning, but the emphasis on cycles of action and reflection seems less explicit, while Torbet's writing

on action inquiry (see his contribution to this special issue) places more emphasis on the quality of interpenetrating attention in the moment (Torbert, 1991).

Systemic thinking also has this kind of cyclical character. Gregory Bateson, in the article 'Conscious Purpose vs. Nature' (Bateson, 1972: 443), argued that natural ecosystems are composed of many parts, all of which are capable of exponential growth in their numbers. They live together in competitive and collaborative interaction so that this primary Malthusian capacity is held in check, and the ecosystem achieves an equilibrium through feedback interactions which have a circuit structure. (See also Meadows's [Meadows et al., 1992] use of system dynamics to study the 'the state of the world', and Senge's [Senge, 1990; Senge et al., 1994] description of the system 'archetypes'.) Bateson argued that Mind is not the property of the human brain, but is *immanent* in the circuits of such ecosystems. In contrast, the conscious mind of human persons is guided by purpose which, Bateson argues, 'is a short-cut device to enable you to get quickly to what you want' (p. 433) and thus tends to cut through the wider circuits of Mind. Conscious mind is only a part of the wider whole: it is tautological that the part cannot encompass the whole. And conscious mind, working within a modernist mindset which exalts human rationality and control over and above the natural world, coupled with powerful technology, provides a recipe for human and ecological disaster.

> On the one hand, we have the systemic nature of the individual human being, the systemic nature of the culture in which he lives, and the systemic nature of the biological, ecological system around him; and, on the other hand, the curious twist in the systemic nature of the individual man whereby consciousness is, almost of necessity, blinded to the systemic nature of the man himself. Purpose consciousness pulls out, from the total mind, sequences which do not have the loop structure which is characteristic of the whole system systemic structure. (Bateson, 1972: 434)

Complexity theory also suggests that the form of whole complex systems emerges through an iterative process:

> Complexity theory describes novel, emergent form and behaviour as arising through cycles of iteration in which a pattern of activity, defined by rules or regularities (constraints), is repeated over and over again, giving rise to coherent order. The order arises as a rich network of interacting elements is built up through the iterative process . . . The order that emerges in a complex system is not predictable from the characteristics of the interconnected components and can be discovered only by operating the iterative cycle, despite the fact that the emergent whole is in some sense contained within the dynamic relationships of the generating parts. (Reason and Goodwin, 1998)

And we have argued (Reason and Goodwin, 1998) that the characteristic form of human groups and societies can be seen as emerging through this process of iteration.

An effective co-operative inquiry process establishes this iterative process as the basis of its work as the co-researchers pose questions which concern them, act in the world to explore these questions, gathering experiential 'data' which they then use for further reflection. I think it is arguable that this helps to move people away from linear cause-and-effect thinking into a cyclical, ecological mode. There is some sense in which this reconnects people with what Bateson would describe as the circuits of

mind rather than the arcs of conscious purpose. The world becomes more complex, interconnected and holistic, and reductionist thought becomes clearly inadequate.

Research cycling also leads the inquirers systematically through the extended epistemology of experiential, presentational, propositional and practical knowing: ideas are explored and taken into practice, which leads to encounters with the otherness of the world about which stories can be told. Thus the co-inquirers experience directly the interrelationship of the four forms of knowing so that they find at first hand how these are interrelated. This guards against one way of knowing becoming dominant.

Thus research cycling is an emergent discipline, akin to martial arts or meditation. A discipline is a method or a training, a set of rules, exercises or procedures that educate a person toward particular ways of being and doing. As I engage with a discipline I freely consent to abide by its practice rules as a process of inquiry into both the discipline and its teachings. In doing this I commit myself to a process of liberation—and the learning is in the process rather than in any planned purpose or outcome.

> A discipline is a practice that develops mind, body and spirit: it draws attention to intuitive or spiritual questions of purpose and meaning; to intellectual questions of understanding; and to practice questions of behaviour; and it places these in the context of the practitioner's physical and social environment. Further, a discipline is necessarily self-transcending: while the initiate may productively 'follow the rules', the mature practitioner uses rules in order develop a quality of attention and behaviour which, while born out of and nurtured by the practice and its rules, moves beyond them. (Reason, 1994: 40)

It does feel very odd to write about the importance of inquiry cycles: it is terribly obvious and simple, so as to be almost naive to write about it. It is part of the discipline of action research that Lewin wrote of in the 1940s (see Dickens and Watkins in this issue) and Freire in the 1970s (see Park in this issue). Yet the cyclical nature of knowing offers a fundamental truth that seems not to be easy to see. For example, we intended that the symposium where the articles in this special issue originated should take the form of cycles of presentation and discussion (American Academy of Management, Boston 1997). But we ran over time early on, and although we had announced and agreed this cyclical form for the session everyone in the room colluded to ignore the agreement, so that instead of a cyclical exploration we simply ran through a straight line of one presentation after another, almost without comment. It would appear that straight line cause-to-effect thinking is endemic in our culture.

Peer Group

It is evident that a person needs the support and challenge of peers similarly engaged in an inquiry process—for example the other members of a co-operative inquiry group. A group can establish an agreed programme of meetings which contain the cycles of action and reflection. Other group members can provide both support and encouragement and challenges to blind spots and defensiveness. But beyond this the group can provide a living container for the emergence of new order—new ideas and new practice. For if it has developed to contain sufficient diversity of viewpoint and complex internal communication we can, following the

arguments of Goodwin (1994) based on complexity theory, see the group as having the qualities of an 'excitable medium' in which pattern arises spontaneously. In an excitable medium the parts are richly interconnected within the whole; these interconnections are complex and non-linear; and this produces *a dynamic field which is self-organizing*. A group exhibiting the qualities of an excitable medium will find itself settling into a dynamic equilibrium on the edge of chaos, following a strange attractor between ordered inquiry and a more chaotic regime. What is important about a living system in this state is that new order arises because of the quality of interaction of the parts, not because of any programme built a priori into the system. These systems, Goodwin says, produce something out of nothing:

> If [the system] moves into the chaotic regime it will come out again of its own accord; and if it strays too far into the ordered regime it will tend to 'melt' back into dynamic fluidity where there is a rich but labile order, one that is inherently stable and open to change. (Goodwin, 1994: 169)

Essentially this means that the co-operative inquiry in full flight is moving between order and disorder, poised between stability and chaos. It needs to be provided with sufficient form to survive instability of its early days—the instability that comes from everyday human anxiety concerning association with others, and from the inevitable lack of shared meaning and task focus of a new human group—but not with so much stability that it rigidifies into frozen form. In contrast, for the group to move creatively beyond this early structure it needs to develop a network of rich connections between members and a degree of ironic ambiguity about its long-term form and purposes. These need to be left open for imaginative debate so that there is space for chaotic interaction between members: it is from this that novel forms of co-operation will emerge (see also Reason, 1998a). This line of thinking is surprisingly close to the intuitive assertion that John Heron and I made several years ago about co-operative inquiry groups:

> From our early inquiries we came to the conclusion that a descent into chaos would often facilitate the emergence of new creative order. There is an element of arbitrariness, randomness, chaos, indeterminism, in the scheme of things. If the group is really going to be open, adventurous, exploratory, creative, innovative, to put all at risk to reach out for the truth beyond fear and collusion, then once the inquiry is well under way, divergence of thought and expression is likely to descend into confusion, uncertainty, ambiguity, disorder, and even chaos, with most if not all co-researchers feeling lost to a greater or lesser degree. (Reason and Heron, 1986: 470)

John Heron sees inquiry groups as taking an Apollonian or Dionysian form—drawing in Nietzsche's original distinction and Ruth Benedict's application of this in anthropology:

> The Apollonian inquiry takes a more rational, linear, systematic, controlling and explicit approach to the process of cycling between reflection and action … a rational cycle of sequenced steps–plan, act, observe and reflect, then re-plan.
>
> The Dionysian inquiry takes a more imaginal, expressive, spiralling, diffuse, impromptu and tacit approach to the interplay between making sense and action … group members share improvisatory, imaginative ways of making sense … future actions … emerge as a creative response to the situation. (Heron, 1996: 45–6)

Some of the qualities of a mature inquiry group could be seen in a recent co-operative inquiry group exploring the nature of high quality personal behaviour; its members were mainly professional consultants, educators and psychotherapists. I noticed early on how the group moved in and out of chaos, as it were, or between Dionysian and Apollonian modes. When we were establishing our purpose together, agreeing the focus of our work and discussing alternative perspectives we engaged in periods of quite confused interaction, with lots of overtalk and competition for airspace with many contradictory perspectives expressed. After a while a sense of direction would emerge: one member might offer a proposal for the next steps, which would be taken up and refined by others and adopted with little further debate. The group would then follow this direction for several hours of disciplined engagement and careful attention, exploring it thoroughly. This would usually then be followed by another chaotic period.

On reflection we identified several qualities of the group which had supported our ability to inquire together and in our everyday lives. Co-researchers described how the group 'held' the inquiry and provided a 'sense of space' in which their experiences 'mattered' to other co-researchers:

> Philip: [the group] ... created a lot of space for me to explore freely and without pressure ... Having a sense of other people not so much peering over my shoulder checking that I'm doing it right, as having a general benevolent interest in my continuing what I'm doing, and a willingness to give more active support and encouragement.

> Jenny: I think it's partly the sense of being *witnessed* and *mattering* to people ... I don't feel any of you are going to tell me off if I come back and say, I've dropped that now, or if I don't even mention it ... But that it *matters* to you as much as it matters to me ... And that we would be trying to act with our best intent, it's unique in this group for me, to be allowed to talk about these things

The group was described as developing a 'positive attitude' to possibilities, which was expressed as 'journeying with' each other in an 'exploration of hope':

> Dave: [we have had] quite a challenging level of support, a challenging level of interaction, but ... within this a very clear notion of support. It has felt like somebody going on a journey with me, noticing how the journey has been for me but not questioning my journey.

> Sara: Annie and I echoed that quite remarkably. She said the group, she noticed has held very positive energy and ... 'we've chosen to hold to an exploration of hope'. This has been enormously positive and empowering for individuals and for the collective as a consequence.

(It is worth noting the connection between the positive energy expressed here and the process of appreciative inquiry (Cooperrider and Srivastva, 1987), which is based not on solving problems but on building on the positive, life-enhancing aspects of a situation.)

Thus the co-researchers felt themselves held in their exploration by the existence of the group, not only in the practical sense that they could discuss their inquiries both at group sessions and in between, but also that the presence of the group provided a container—maybe it could be described as an alchemical vessel:

> Annie: whether or not group [members] are consciously thinking about you, somewhere the group's energy is with you and behind you … You can tune into the group and it doesn't matter if they're thinking of you or not, that entity is there for you as a resource, I think that's the difference … It's not a question of *will* that the … feeling of this group is here when I need it. It's nothing to do with that. It pops up. I think it's not just the theory or the concept, it's the entity that we've made here [that's] warm and supportive. It's an entity that's hanging around and available to each one of us.

Self-reflective Inquiry

The third essential feature of a community of inquiry is attention to who it is that is inquiring—the self-reflective dimension. While traditional academic inquiry is based on an outsider perspective in a search for some objective truth, co-operative inquirers are engaged in a self-critical examination of their own experience and practice, and indeed of the very ground on which they are standing (Reason, 1999). Thus questions such as 'How do I know what I know?'; 'Who am I that is engaged in this knowing?'; 'Do I actually do what I think that I do?' are central to the process of inquiry and discovery. These questions are akin to the Zen koans my friend John Crook invites participants on his western Zen retreats to explore: 'Who am I?'; 'What is life?' and so on. Such questions are paradoxical and unanswerable through sequential logic; if pursued with persistence (on a Zen retreat or in an inquiry group) they subvert the rational mind and throw the human being into a deeper process of inquiry.

Some of this can be exemplified from the co-operative inquiry group mentioned above. I set the scene for an inquiry at some depth in the letter of invitation I wrote:

> I am thinking of the qualities of action that are required of those who wish to live creative and unusual lives, who wish to honour and respect themselves and others, and who wish to influence the healthy development of the communities to which they belong. My aim in taking this initiative is to contribute to the question I keep asking myself, 'What is worthwhile?'

Two specific questions that were proposed for the group were

- How do we learn to be aware of the frame through which we are perceiving events and to be aware that others may hold different frames? How do we learn to fashion new frames and new perspectives which offer creative new understanding of situations?
- How do we learn to be willing and able to enter into democratic relationship with others, to initiate the formation of dialogue together and nurture its development?

In the course of the inquiry the co-researchers became fascinated with the idea that their behaviour became of higher quality—they were more able to see the multiple possibilities of the situation, less compulsive, more democratic, more able to use power appropriately—if they learned to pay more attention to *what they were learning* in a situation than to *what they were trying to achieve*. Thus Jenny reported, in relation to difficult professional negotiations with an academic board:

> Inquiry into what is worthwhile and especially how I can learn to take initiatives that I think are worthwhile has shifted my attention from desired outcomes to the process of learning *how to*. This has (for fairly long spells) changed my experience from one of anxiety to one of absorption and attention. It has lowered my sense of success or failure. If I am learning about how to do something, then whether I succeed or fail in terms of the outcomes is much less important—because I can learn either way. And as this sort of learning has become my intent, I will always be able to succeed in the sense of being able to learn.
>
> . . . the outcome doesn't become totally irrelevant, because I am choosing to do my inquiry around projects in the world which I think are worthwhile, so obviously they are important to me . . . So far I have been reasonably successful in terms of outcome, too. But it is important to me not to shift the emphasis back.

And Annie told of how this way of thinking had shifted her attitude to the drama of her life:

> I think the most useful thing that I've acquired is looking at things that happen in my life as an inquiry . . . But I am much less caught in the drama because . . . here is a co-operative inquiry observer who's *fascinated*. So when I was robbed in Romania, there was a lot going on, a lot of emotion and difficulty, but I kept on observing it and enquiring it and thinking 'how does this fit in and how am I behaving?'
>
> How I'm dealing with the mess [*resulting from the robbery*] is that I keep on standing back and looking at it and saying 'Here's the mess, how far have I got in and can I pull myself back out?' It's something about drama. If you look on life as an inquiry, you don't get caught by the drama. Each play that unfolds, you're interested . . . to see what you can learn from it and that's a way of not just being caught up in it and sort of rolled by the big wave up the horribly scratchy beach. You know how a big wave can roll you up the sand?

There is of course an interplay between the quality of this private internal reflection and the public reflection in the inquiry group which is part of the research cycling. My sense is that as the group develops a culture of supportive yet disinterested curiosity—journeying with each other's inquiry—so individuals are encouraged to be less concerned about 'getting it right' and thus can be more lovingly curious about their own behaviour. My guess is (I have no firm evidence) that this culture within an inquiry group helps develop the kind of consciousness in the midst of action that Torbert is concerned to develop.

Living the Learning

These three learning/inquiry processes are themselves interconnected. The deeper inquiry afforded by the koan-like self-reflection brings new experiential knowing to the cycles of action and reflection. This cycling provides an appropriate balance of experiential, presentational, propositional and practical forms of inquiry, so that the inquirer is less likely to become stuck in any one mode. This cyclical non-linear process feeds the excitable medium of the inquiry group and is thus an important contribution to the emergence of a dynamic field. And this in its turn invites the co-researchers to deeper self-reflection. And of course it can all go horribly wrong, so that the inquiry group goes round in circles rather than creative cycles, struggling fruitlessly with the impossibility of intimate support and with the impossibility of knowing.

The Manufacturing Manager Comes to Visit

It will be clear from the above that co-operative inquiry can make little immediate comment on the short case study, except maybe to remember the old Irish joke and say, 'I wouldn't start from here'! The kind of fruitless interaction portrayed in the case might provide a stimulus for the establishment of a co-operative inquiry process among the team members themselves, or of an inquiry group of team leaders, which could begin to explore how to behave in creative ways in the face of such difficult circumstances. Co-operative inquiry is a long-term strategy for the development of practical knowing, which starts with the creation of a community of inquiry as an arena for reflection from which the participants can journey out into their worlds to notice new things and engage in experimental action, holding an awareness of the support and challenge of the group. The circumstances of this case require an immediate and highly skilled confrontation, probably by an outside facilitator or consultant.

Co-operative Inquiry in Context

My experience of the term 'action research' is that it means so many things to so many people that it is methodologically useless to distinguish one strategy from another. However, it may be politically useful (as in our Centre for Action Research in Professional Practice) as a description of a general field of activity. I am attracted by Torbert's proposal of 'research/practice' as an alternative name and am interested to see if we can get this to catch on.

I locate co-operative inquiry as one approach within a whole family of approaches to inquiry which are participative, experiential, emancipatory and action-oriented. Judi Marshall and I have proposed that all good research addresses three sets of needs;

> All good research is *for me*, *for us*, and *for them*: it speaks to three audiences . . . It is *for them* to the extent that it produces some kind of generalizable ideas and outcomes which elicit the response 'That's interesting!' from those who are concerned to understand a similar field (Davis, 1971). It is *for us* to the extent that it responds to concerns for our praxis, is relevant and timely, and so produces the response 'That works!' from those who are struggling with problems in their field of action. It is *for me* to the extent that the process and outcomes respond directly to the individual researcher's being-in-the-world, and so elicit the response, 'That's exciting'—taking exciting back to its root meaning, to set in action. (Reason and Marshall, 1987: 112–13)

We would probably write this rather differently now, but we have found that this scheme has been a useful heuristic for graduate students in thinking through the purposes and dimensions of their work. These three dimensions of research/practice, for me, for us and for them, are of course nearly identical with Torbert's first-, second- and third-person research/practice. Thus we can think about the range of schools and methods along three dimensions.

'For me', first person approaches are aimed at the development of an inquiring individual actor: these include Argyris and his colleagues' approach to action science

(Argyris et al., 1985), for which see Putnam's contribution to this special issue, Schon's approach to reflective practice (Schon, 1983), and the first person dimension of Torbert's developmental action inquiry. We can also draw on a whole range of disciplines and practices not normally seen as research but which at their best are predicated on an inquiring approach to life: meditation, prayer, martial arts, ceremony. In my teaching at Bath I tend to draw on Torbert's work since I find his concern with developing collaborative relationships, and with the development of an inquiring consciousness, fits best with the ethos of co-operative inquiry.

'For us', second person approaches are those in which the inquiry is focused through a group which is normally established for the purpose of collaborative learning and inquiry. I see co-operative inquiry as the most fully articulated form of second person research practice; other forms include inquiry based on dialogical interviews and looser communities of inquiry. We can also draw on a whole range of disciplines such as action learning (see Marsick in this issue; I see action learning as concerned with developing good practice rather than as developing new forms of research/practice, but the line is a very fine one to draw), T-groups and encounter groups, consciousness raising groups, meditation retreats, community based education, indeed, the whole range of experiential learning groups which are based on an ethos of inquiry.

'For them' third person approaches aim to mobilize inquiry in a wider community or organization. These include participatory (action) research (see Park in this issue) those forms of action research based on democratic dialogue (Toulmin and Gustavsen, 1996), some aspects of organizational learning (Senge, 1990), and some uses of large groups' structure such as open space, future search, etc., for example the work being conducted through the London Health Partnership at the King's Fund in London using large group events to systematically develop understanding and action in the primary care of elders in inner cities (Pratt et al., in press 1999).

Of course, these dimensions are interrelated and one can start from any position. The co-operative inquiry strategy starts by building a second person community of inquiry, as described above, around a set of shared practice questions—for example the holistic medical inquiry group mentioned at the beginning of this article. As the co-researchers move into the action cycles of the inquiry they will need to practise a form of first person research practice—the doctors returned to their surgeries, paid new attention to their work, experimented with new forms of practice, which they then brought back to the inquiry group. This second and first person inquiry can then support third person inquiry in the wider community, either in intentional forms of participatory research, or as a direct impact of individual action—the British Holistic Medical Association was formed in part as an outcome of the holistic medical inquiry. Thus, co-operative enquiry represents one strategy within a range of approaches to action research.

Notes

1. I do not take the word 'postmodern' as synonymous with the deconstructive movement derived from Derrida's work, but would include a wide range of emerging perspectives,

based on Lyotard's proposal that the essence of postmodernism is 'an incredulity toward metanarrative' (Lyotard, 1979). The postmodern sentiment includes the realization of links between ways of knowing and social power structures; systemic and ecological rather than linear thinking, and the influence of feminist and indigenous perspectives. My inclination is to think of an 'ecological postmodernism' (Spretnak, 1997) and to see these trends in terms of emerging participative worldview (Heron and Reason, 1997; Reason, 1998b).

2. By 'layperson' I mean to emphasize that practice of co-operative inquiry is not the monopoly of professional researchers, but rather that anyone can initiate and take part in the explorations that constitute co-operative inquiry, and that while some people may have more experience and understanding of the method than others, all those who participate as co-inquirers, if they are to be truly adventurous in this work, must bring the openness of a 'beginners mind' (Suzuki, 1988) to the process.
3. For a fuller and more technical exploration of the extended epistemology and its relation to a participatory worldview see especially Heron (1996) and Heron and Reason (1997).
4. The whole field of chaos and complexity theory has opened up in recent years and is a particularly fruitful metaphor for thinking about inquiry groups. See Reason and Goodwin (1998).
5. Co-operative inquiry was developed within the tradition of collaborative education which argues for balance and integration between the demands for authority, collaboration and autonomy. For a full discussion see Heron (1989).

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Letters

Action Research: Letters to Linda Dickens and Karen Watkins and their Response

Dear Linda and Karen,

Your article, about approaches to action research since Lewin, provides a useful review of the literature that backgrounds the more in-depth presentations of particular action methods and theories provided by Park, Putnam, Reason, and myself. I agree strongly with your summary criticisms that the literature generally provides little information about internal action research team processes and fails to clarify the interdependence of action and research. Moreover, I also agree with the questions you raise right after declaring that 'in action research, truth is in the process of inquiry itself', and I further agree that they are 'unlike those that guide most research'. But: how so?

My most significant feeling of criticism about this review is that although you hint at differences between positivist research and action research, and hint as well at difficulties within action research itself, you rarely confront these issues head-on in a way that motivates the imagination of the reader (or at least of this reader). I think action research questions are different because they confront us as active human beings, and as members of social groups, about the *harmonies or incongruities across different qualities of reality as we act in the present* —from our own or our organization's intuitions of what we value, to our espoused strategies and priorities, to the actual pattern of our actions, and our effects. In other words, in action research, properly understood, the world is not seen as a single, out-there, third-person territory that is mapped by theory and empirical research. Rather, as both Reason and I have charted in different languages, the world consists of at least four distinct territories that interweave in the first-, second-, and third-person present as we act/inquire (each action an inquiry, whether recognized as such or not, and vice versa).

You point out, as a criticism of action research (and the criticism is actually even more pertinent of most positivist research), that it is often not *timely*, that problems can change under one's feet while one is doing in-depth, iterative search. I agree and would put the matter more dramatically. I would say that any social theory and data that do not include a theory of, and practical sensitivity to, issues of *timely action* will perforce mislead us.

Finally, I was astonished by your sentence, 'The validity of the theory (in action research) is judged by a simple criterion'. This sentence is followed by, not one, but three extremely complex criteria that are potentially in tension with one another: (1) improvement and (2) change within the context, and (3) development of new, generalizable knowledge. I believe that nothing less than what I call Developmental Action Inquiry, held and practiced lightly from a late-stage perspective earned through

an adulthood of experiential inquiry, can bring all the concerns of these three paragraphs into ongoing constructive contention with one another. Thank you for your contribution and your participation in this exemplary, public feedback process.

BILL TORBERT

Dear Linda and Karen,

I read your article with admiration for the sweep you bring to your discussion. By using an understanding of action research that can be traced to Lewin, you include under action research different forms of collective activity that consist of research–action–reflection cycles involving problem solving and change. Used in this sense, it is a convenient generic term, which serves to refer to action-oriented research of all kinds. This is certainly the way the term is often used by most people, both professsional and lay. In my view, however, this global terminology militates against a focused account of the diversity prevailing in the practice of action-oriented research and makes it difficult to come up with a general characterization applicable to all models and to make useful distinctions among them in terms of definition, objective, emphasis, process, and theory. You explicitly acknowledge this difficulty in your article. It makes it especially difficult to discuss the particular model under consideration, call it the Lewinian model, in contradistinction with the others which are all referred to as action research. In a sense your article might have served as a general overview of the project to which this special issue is devoted, since all the so-called 'action strategies' discussed in it involve research, action, and change, with different degrees of emphasis.

Your article starts with a nice quote from Kemmis and McTaggart describing, in a stirring emancipatory tone, what you call participatory action research. And you also subsume under action research what I am calling participatory research. But participatory research does not derive from the influential Lewinian tradition, however much it may share with it certain objectives and procedures. It rather draws its theoretical inspiration from Paulo Freire's philosophy of liberatory education, which cannot easily be contained in the Lewinian framework of experimental approaches to problem solving. All the same, you think of these types of action-oriented research as extensions of the Lewinian model, in that they entail participation rather than involvement. You thus seem to imply that participation is not an integral part of the Lewinian model of action research but rather something that goes beyond it.

I am wondering to what extent action research in the Lewinian tradition is practiced with emancipation as an explicit goal, inasmuch as participation, as opposed to involvement, is apparently not part of it. I think of participation entailing self-determination as a defining characterization of emancipation. And for me emancipatory research activity includes people defining their own problems in terms of the social forces that stand in the way of achieving human necessities and dignity, working on their solutions through collective investigation, and coming to understand and act upon social imperatives for the realization of viable community. The distinct impression I get from your discussion, by contrast, is that action research, in the narrow sense of the term, by and large addresses problems defined by the exigencies of the organization and it is the research team, presumably composed of members with qualifying characteristics of an instrumental nature, that conducts the investigation and makes recommendation for action to be carried out as an experiment. To be sure concepts such as change at the societal level and empowerment are mentioned in your discussion of action research, but it is unclear what meaning can be attached to them in terms of human emancipation, since the changes you focus on are at the behavioral and organizational level.

I am sure action research as you describe it serves useful purposes in democratizing the workplace, which could have a strong organizational endorsement for its potential as a means to better management and productivity. It might even benefit the workers involved in such efforts by giving them a degree of freedom in decision making. But to understand this activity in terms of the same characterization as participatory research as I define it is, I submit, to erase any useful distinctions among different kinds of action-oriented research.

PETER PARK

Dear Linda and Karen,

In reading over your article, we found your discussion of the various formats for action research to be very enlightening, and found ourselves agreeing with your conclusions about the other variants having their roots in action research—action research actually being an 'umbrella' technology. We would add to your illustrations based on connections we see in the ideas of communities of practice and cycles of action, reflection, and learning. In keeping with this 'umbrella' concept, do you try to separate the technologies when you engage in an action research intervention, or do you go in under the umbrella of action research and also incorporate action research or action learning? What problems, or challenges, do you experience in combining any of the technologies?

We also would like your reaction to one of the issues raised to us. We note that you feel action learning focuses on transformation through individual and collective reframing of the problem. Several others in this volume might see this change as single-loop learning, and therefore, transactional at best. We think that AL can result in transformation, though may not always do so. What do you think about this issue?

We liked your thorough discussion of the literature, and we're also interested in what your own experience has been. What definitions and processes fit with your own practices? Do you stay with one method, or adapt as you go along? Which methods do you feel have the most value for you?

Finally, as we were preparing our letters, we were wondering about the degree to which we, the participants to this special issue, were or were not crossing boundaries in our dialogue. It seemed especially interesting that the cross-talk fell into pre-existing patterns of communication, and that by coincidence, this also led to a bit of a gender divide in commentary. We also wondered whether this division stemmed from action research and action learning representing 'older' action approaches, and therefore, less likely to give rise to new debate. Or, that AR and AL are often implemented in a more transactional, and less liberatory, mode, which might also be less intellectually interesting. We are curious about your thoughts on this, especially since—as our different responses to the manufacturing manager case illustrate—action strategies seem well suited to surfacing conversations behind the conversations.

VICTORIA MARSICK and JUDY O'NEIL

Response from Linda Dickens and Karen Watkins

Dear Bill, Peter, Victoria and Judy,

We have been both humbled and intrigued by the level of dialogue encouraged by the letter portion of this special issue. To begin, one issue noted by all three of the letters to us has related to the more literary nature of our article compared to the description of

specific practices more typical of the others. An earlier version of this article did contain a lengthy description of an organizational action research project to illustrate our practice, but it was felt that this was not as important as the framework provided by the broader overview. This then led to the question of the nature of our own practice, which draws on action science and action learning and is focused on organizational intervention. What it means to us to be an action researcher is to invent in the moment, to act reflectively, to continually examine our practice and then change it in order to improve it—and in so doing, to create a unique version of action research since none of us can replicate purely the practice of another.

Both Bill and Peter suggest that we somehow undermine or erase the uniqueness of their work in presenting a broader, historical framework for action research. Instead, it seems to us that it places their work in a tradition and makes possible a comparison with other forms. We described a generic action research process. Peter characterizes essentially the same process but with the affective and philosophical qualifications unique to participatory research. For example, he sees our use of the process of self-determination as potentially focused on the exigencies of the organization and the action research group, while he sees self-determination as 'people defining their own problems in terms of the social forces that stand in the way of achieving human necessities and dignity'. While we like his way of putting it, we believe that people in organizations defining their own issues of focus are in fact doing precisely the same thing. We admit that participatory research goes beyond the Lewinian tradition, particularly with its incorporation of Freire's liberatory educational principles. We would also note that in our experience in organizations, the reality is that the authoritarian culture which is paying for the action research project often overrides the emancipatory intent with which the project begins. This may make organizational action research less likely to live up to the liberatory educational principles of Freire than more community-based approaches.

Victoria and Judy's question of whether there was a gender divide in this special issue particularly intrigued us. While there may be, the more likely (though related) influence on our letter writing is probably our differing disciplines. We belong to different disciplines and those in the same discipline tend to meet often at conferences, talk regularly, read each other's work in progress, etc. Our disciplines also frame what we pay attention to, what issues we take up with one another, and what threshold of common knowledge is created. The ease with which we responded to Victoria and Judy's letter, compared to the fits and starts in thinking through the others, suggests that unfamiliarity made a difference at least to us. We felt there could have been a gender difference when Bill suggested that we were too 'bland' to stir his imagination, while his approach seemed a little idiosyncratic to us (individualism?). Peter is concerned that we have positioned action research as an 'umbrella framework' that might somehow overshadow the more unique practices (individualism?). Yet, both liked our approach and appeared to value, as we do, seeing our practice as part of a whole; of a long, inclusive tradition that traces back to Lewin (concern for community?). These concerns constitute the contrasting dimensions of individualism vs community; concerns that do not always fall on gender lines, but often do. We do not believe that there is anything less intellectually interesting about either action learning or action research. The way in which we each express ourselves, our differing preferences for uniqueness or inclusiveness, our focus on individual, group, organization, or communities, even our comfort talking with some people over others; these may certainly be influenced by gender.

This has indeed been a rewarding opportunity. Thank you, Joe, for your role in bringing us all together—and particularly for giving each of us voice through this unique vehicle.

Participatory Research: Letters to Peter Park and his Response

Dear Peter,

You describe participative research as a way of working with disadvantaged communities to improve living conditions. This is noble work. My concern, as I read your article, is with an accompanying ideology that in my view misses what is possible in organizations and may prevent our different forms of research from contributing to each other.

The work that I know is usually with people in professional or managerial roles and is undertaken to improve organizational effectiveness. The work engages these participants in reflecting on how their own habits of thinking and acting contribute to organizational patterns that they find undesirable. It helps them create relationships within which they and their colleagues can reflect productively on contentious issues. While this is not 'participative research' as you define it, it is fertile ground for generating interpretive, relational, and reflective knowledge. I would hope that we could learn from each other in exploring these epistemological frontiers.

In distinguishing participative research you use phrases such as 'the people' and 'the needs of the community' that imply a high degree of consensus. Perhaps in a mountain community or other settings typical of participative research this implication is valid. The settings I know are characterized by diverse interests and perspectives. An important aspect of the work is helping people to deal with this diversity across organizational boundaries. It seems to me that the lens you use to look at organizations leads you to miss this diversity and to see only 'the rank and file' or 'the workers', on the one hand, and the managerial hierarchy on the other. The former qualify as 'the people', as I read you, and the latter do not. I would think this orientation would make it enormously difficult to create research relationships that involve those who you do not see as the people.

In describing the role of the researcher you make the important distinction between documenting the specific ways that a problem affects people's lives and understanding the causes of the problem. You point out that in everyday discourse the two are conflated. The same is true in organizational settings. People often describe a problem in terms of what they believe are its causes, and therefore presume that they already know the solution (e.g. 'The problem is that we don't have a good product development process'). My question is, what does the participative researcher do when people think and talk in this way? It is part of the researcher's expertise to know that a more effective way of proceeding is first to document how the problem affects people's lives. How does the researcher bring this expertise to bear without being 'an expert' in the pejorative sense that would undermine people's ownership of the research? My guess is that in the handling of such situations there is much overlap and much to learn from the practices of researchers in the several forms of action-oriented research.

BOB PUTNAM

Dear Peter,

I want to begin by highlighting and celebrating your identification of four distinctive types of knowledge—representational, hermeneutic, relational, and reflective—especially your vivid portrait of the unique qualities of relational knowledge. I see these distinctions as approximately and preliminarily paralleling the distinctions I make among Multi-method Eclecticism, Postmodern Interpretivism, Ecological Cooperative Inquiry, and Developmental Action Inquiry paradigms of social science. As you say, modern science simply doesn't engage the issues of relational and reflective knowledge.

Developing these types of knowledge in a disciplined fashion can legitimately occupy global civilization for the next 500 years.

I also see a close analogy between your notion of first-, second-, and third-order change and my discussion of single-, double-, and triple-loop feedback. But here I simultaneously experience the greatest gap in tone between our two approaches, at least as articulated in this particular article of yours. When you discuss double- and triple-loop change, your rhetoric and brief examples focus outward and toward macro phenomena (e.g. science itself, drug policy). My experience suggests to me that I need to attend in a balanced fashion to double- and triple-loop learning opportunities *within myself* and *within the community with which I am working*, as well as within institutions that impinge on 'us' from the larger society. Without this balanced circulation of attention 'inward' as well as 'outward', 'we' quickly fall into justifying ourselves and blaming 'them'. We also lose our sense of empathy for how difficult such changes are. And we do not develop the capacity to truly help ourselves or others.

To my way of thinking, the challenge of generating a true community of inquiry (characterized by single-, double-, and triple-loop feedback—Stage 7 in the developmental theory in my article) has never been met more than momentarily in human history. Contrary to the 1960s motto 'If you're not part of the solution, you're part of the problem', I think it more useful to emphasize 'If you're sure you're part of the solution, you're certainly part of the problem'. Realizing that participatory research is usually engaged in by those with few resources to organize in the face of organized oppressive power that is all too sure that it is the solution, I nevertheless miss the note of continual internal self-critique that I see as essential to full-fledged emancipation.

BILL TORBERT

Dear Peter,

I most enjoyed reading your article on participatory research. Can I raise some issues for this debate?

I was sorry to see that you think that 'in collaborative inquiry, the action component is muted' (p. 142). First of all, I assume you mean 'co-operative inquiry' which is the term John Heron and I use for our particular way of approaching collaborative research. Second, I explicitly say that the point of co-operative inquiry is to help people 'understand their world and learn how to act to change things'. The purpose of human inquiry is the flourishing of human communities: 'This kind of flourishing is practical knowing ... to enhance personal and social fulfilment and that of the eco-networks of which we are a part. Such human fulfilment is consummated in the very process of choosing and acting. So in the participatory paradigm, practical knowing is an end in itself; and intellectual knowing is of instrumental value in supporting practical excellence' (Heron and Reason, 1998: 287). I thought your emphasis on research as arising from the felt needs of the community was very well expressed. However, I do wonder if you make an unnecessary polarity between participatory research in a community context and that in an organizational and professional context.

Clearly, some organizational research is strongly contained within traditional organizational 'bottom line' concerns, as you say. Yet there are early but hopeful signs of a movement toward wider concerns for creating organizations that are responsive to social and environmental issues as well as to profit: what John Elkington (1997) has called the 'triple bottom line', which involves working actively with stakeholders in the community. None of this work is beyond criticism, but I think we need to develop ways of using participative inquiry approaches both inside organizations and in the community.

I am also concerned when you say that what participatory research does is 'not so much a job as a vocation' and that for the rest of us it is a 'job-related activity'. I protest! Many of us 'other practitioners' start from strong value positions which, while not identical with yours, seem to me to be pretty vocational. To take an example from my own writing: 'It seems to me to be urgent for the planet and for all her creatures that we discover ways of living in more collaborative relation with each other and with the wider ecology. I see these participative approaches to inquiry and the worldview they foster as part of this quest' (Reason, 1998). While I have immense respect for the work of participatory researchers in disenfranchised communities, I don't see that this is the only way of acting vocationally, and I am not too happy about you colonizing the moral high ground in this way!

I did appreciate your exploration of the different forms of knowing that make up participatory research. At first I was tempted to try to project your scheme on to mine, to say, 'well, his relational knowledge is like my experiential knowing . . .' but I soon decided that what was important, and what we shared, was a sense that knowledge is a much broader and wider and deeper thing than is usually seen in the academic world, and how we describe this isn't as important as celebrating the richness of perspective.

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PETER REASON

Response from Peter Park

Dear Bob, Bill and Peter,

Although there are certain themes that run through your letters, I find it easier to respond to each letter separately.

Bob, I would first like to thank you for agreeing with me about the difficulty that people have in separating the manifestations of a problem from its causes, which make them believe they already know the answers, with the consequence that they often end up repeating the same old, ineffective solutions. The role of the participatory researcher as a facilitator in such a situation is not to be an expert, as you say, but to help people themselves document problems in painful detail and in their own way.

It is a historical circumstance that participatory research as we understand the term began in communities rather than in organizations. Admittedly, the term community is problematic in terms of both definition and application. I, however, use the term to refer to a collection of people loosely connected to one another, with shared interests, outside an organizational setting. This distinction is important to keep in mind in understanding the objectives of participatory research, which are not dictated by corporate needs, such as making profits for stockholders. This is the reason why participatory research as I understand it is not carried out in organizations. When it is, it in effect becomes what I have termed participatory action research, which must take into account organizational constraints. In this sense, workers who get involved in such projects are different from the people who do participatory research in communities in terms of the kind of constraints within which they have to operate.

Bill, the beauty of your theoretical edifice is that it is connotatively rich and I can read a lot of interpretations into it. For instance, your Cooperative Ecological and Developmental Action Inquiries tantalizingly suggest something of relational and reflective knowledge, respectively, in my terminology. I don't want to draw too close a parallel between your framework and mine, since each of your inquiries/stages seems to combine ontology, epistemology and methodology, whereas my three forms of knowledge constitute a purely epistemological typology. But it could very well be that my knowledge types are embedded in your inquiries/stages here and there, the representational showing up primarily in the first six. In my scheme of things, hermeneutics—which resonates with your Postmodern—produces interpretive knowledge, which is not a distinctive, fourth epistemological type, as you seem to imply, since it is still representational.

You correctly point to the similarities and differences in our understanding of the orders of change. While agreeing with you on the important role of individual learning in bringing about changes at any level, my concern is with macro level change. This is the ultimate goal of participatory research. That is, its objective is eventually to bring about changes at the structural level. I don't believe that second- or third-order changes at the individual level linearly add up to social change which has dynamics of its own and inexorably affects individual lives.

Peter, first, let me apologize for carelessly referring to cooperative inquiry as collaborative inquiry. Second, I agree with you that there is no need to polarize participatory research and other forms of action-oriented research. This is certainly true of the question regarding vocation. I am willing to admit that I may have overstated the case. I assure you I didn't mean to 'colonize the moral high ground' with my statement. I was simply thinking of participatory researchers who put in long hours and sometimes make personal sacrifices while working on community projects for no apparent professional or monetary rewards. I have met many such people in this country and in the so-called Third World.

Similarly for the question regarding action. To the extent that learning involves change at some behavioral level, any inquiry that is motivated by helping people to 'learn to act to change things',' as you say of cooperative inquiry, must be seen as enabling action, even if it is only a potential that is being created at the individual level. What I had in mind, however, when I made the statement that you contest is that participatory research explicitly includes action in the collective sense as an integral part of its process. That is, it is not content just to create the capacity for individual behavioral changes but also aims, as part of the research operation, to bring about changes in the social structure that affect a collectivity of people, i.e. social change. It does not always succeed in producing significant changes in this sense, but all the same that is the goal.

I am glad there are 'signs of a movement' among organizations to heed the 'triple bottom line'. But the fact that these organizations exist to make profit under the productive logic of capitalism sets a specific kind of limit to the degree to which organizations can practice the emancipatory principles informing participatory research, internally or in the community. At present, we are witnessing dramatically increasing wealth at the top of the corporate ladder at the expense of the steadily declining earning power of ordinary workers, not to speak of sweatshops and other deplorable conditions produced by the system. Even middle-level corporate managers are constantly threatened with job insecurity through restructuring, mergers, and other mechanisms aimed at increasing corporate profit. In this climate, I can only hope that the kind of movement you are talking about will one day create conditions conducive to participatory research within business organizations.

Action Learning: Letters to Victoria J. Marsick and Judy O'Neil and their Response

Dear Victoria and Judy,

Your exploration of action learning presents tensions that many practitioners in the field of organizational learning also face. A great strength of your approach lies in the power of action learning to bring about change at once at the individual, group, and organizational levels. Yet, we also find a number of puzzles in action learning concerning learning and action.

First, your article presents a tension between learning while doing and learning from past experience. You state that action learning evolved from theories of learning from experience. Much of the theory upon which you draw encourages critical reflection on action as a way to create learning. Yet the action learning theory, as you quote from Pedler, also presupposes that the task is the vehicle for learning; that participants learn while they are engaged in action. We therefore question where the more significant learning occurs—during task or reflection?

This leads to a second tension: where is the action or change dimension in action learning's roots? How do proponents of action learning define action? Table 2 notes that case interventions take the form of 'reflect', 'ask', 'reframe', 'acknowledge', 'examine', 'focus' and 'probe'. One box in the table suggests action through analyzing data; another suggests 'role play'. Where is the action in the redesign of the case? What do action learners do to realize more informed action, beyond asking questions?

It is difficult to ascertain how practitioners learn the skills that result in more informed action. Your assertion that the social process brings peer learning to its highest efficiency suggests a high level of skill among practitioners. You also note that each person is helped by the others to think differently about the situation (p. 164). But how do action learners learn these skills, particularly in models that downplay the role of a facilitator, such as that espoused by Revans?

You state that many programs emphasize that the learning is more important than actual results, and that action learning provides a safe environment in which to learn from mistakes (p. 173). Is learning really more important than results when attempting to solve a real and significant organizational dilemma? If you have not solved the problem, then has learning taken place?

LINDA DICKENS and KAREN WATKINS

Dear Victoria and Judy,

I found your article immensely helpful in understanding the place that learning occupies in intentional activities that result in personal, interpersonal and systemic changes. I think it might be said that what you and others are calling action technologies all have in common action or experience, investigation or reflection, and learning. But your article makes it abundantly clear that the emphasis on these elements is different among the action strategies we are dealing with in this issue. At least in action learning the emphasis is decidedly on learning—primarily at the individual level.

I also found your distinction among the three schools of action learning—scientific, experiential, and critical reflection—illuminating. The predominant impression I came away with from reading your article is that, in simplified terms, the first is characterized by an emphasis on systemic and analytical approaches, the second by experience-based cycles of reflection, and the last by examinations of the deeper layers of reality. In all three cases, however, the nature of action in producing this kind of learning is unclear to

me. I am not sure in what sense the scientific school makes use of action to produce learning, unless it is somehow captured in the single word you use under System Beta, namely 'experiment'. Similarly, I am not sure how action, the starting point in the Kolbian cycle, is initiated. Is it any kind of unmeditated action, or even unintended experience, resulting from no prior learning, that sets off the cycle of learning? Or, is it something that is introduced as a kind of experiment, as in Lewinian action research? Apparently, Action Learning is understood as taking place in the context of Action Research in some cases but not always. How then does action come about in the Experiential School in situations not allied with Action Research?

My question concerning the Critical Reflection School in a sense touches core assumptions lying behind Action Learning as an action strategy. My concern here applies to the other schools as well, but it can best be raised in connection with this particular variety of Action Learning because of its objectives, which have more clearly identifiable implications for the organization in which Action Learning is understood to take place. You speak of 'the potential for stirring up the organizational waters', but it is unclear to me how this is accomplished. Is it sufficient that people who are involved in an Action Learning program engage in critical thinking and reflection concerning the prevailing organizational practice, and to uncover hidden 'misconceptions, norms, and expectations?' I do not underestimate the importance of critical education in potentially motivating people to take corrective actions for ameliorative or even radical change, but this seems to put too much reliance on the assumption that action will follow from learning. An assumption that I find problematic, especially since you explicitly state that learning is often more important than resulting action. It is precisely this kind of assumption that lies behind traditional educational programs and research activities, which separate theory from practice and research from action. But for me the exciting epistemological assumption underlying 'action strategies' is precisely that it explicitly links deliberate action to investigation and learning. And it is the realization of this assumption in our practice that liberates human sciences from the positivist paradigm.

PETER PARK

Response from Victoria J. Marsick and Judy O'Neil

Dear Linda, Karen and Peter,

Both letters to us query the nature of action in the different action learning schools. Both also probe the relationship of the deeper change that we think individuals gain in the critical reflection school concerning action for organizational change and learning. Linda and Karen also query the way in which practitioners learn the skills needed for more informed action.

Even though there are many differences among these three 'schools' of action learning, we think that the nature of action might, on the surface, look quite similar across the schools. In all three schools, people are encouraged to take action to investigate their thinking. This action, of course, is keyed from either the team or individually based problem. It may occur within the team as participants work towards a problem solution; within the organization as participants test possible problem solutions; through team interaction and feedback as a result of working together; or through eventual reframing of the problem itself.

Sometimes action involves repeated cycles of problem re-formulation, action, reflection and re-assessment, and new action. Sometimes, action is limited to a few steps to check out a problem definition, e.g. focus groups to gather data, meetings with senior

executives to check assumptions, or trial runs of ideas with peers. And sometimes, action involves lengthy, extensive implementation steps. The nature of action is dictated less by action learning type and more by other factors. For example, if the initiative is organizational, the company sets parameters around the nature of action it invites or will tolerate. Program length limits or frees one up for extended action. Individuals working on their own problems may be more free, from that perspective, to take action.

Peter Park also wondered about differences in the way action occurs in the different schools. In all schools, we think it likely that this would be left to the group to decide, but when companies run initiatives, they might well design initial activities to launch action. The learning coach's philosophy in any of the schools might also lead him or her to take a stronger or weaker interventionist stance should the group find it harder to get started. Coaches often capitalize on serendipitous action in the here and now for reflection to catalyze further learning about the nature of that action. The coach may also slow down people who are prone to quick action, but encourage others who typically engage in analysis paralysis.

Peter, we share your deep conviction that critical reflection alone is insufficient for deep learning through, with, and from action. Our point is that an individual's critical reflection necessarily involves questions and actions that challenge the status quo, and therefore, the organization needs to be aware that such initiatives will rattle the culture. Also, learning coaches will want to ensure that individuals are aware of these risks. Coaches need to be willing and able to surface repercussions when they arise, and to help the system make sense of them rather than 'blame the victim', i.e. the program participant who took risks.

This leads us to questions about how practitioners 'realize more informed action' and how they 'learn the skills that result in more informed action'. This does differ somewhat by program type. But, at its heart and in its purity, action learning is a peer experience! Revans downplays the role of learning coach because he believes that managers have an innate ability to learn from their peers. The nature of learning depends on the mix of capacities that people bring to the group (including those of the learning coach), and the extent to which they create a liberating learning environment. The learning coach often sets the tone, especially at the beginning, and often does this through questioning, questioning, questioning.

Finally, you asked if learning is truly more important than results. Yes, in theory, but no, not always in practice, especially when the skills of the group or the nature of the organization's culture does not truly let people learn from their mistakes without being castigated or otherwise punished. However, we have seen groups that gained much more under the right circumstances from analyzing their lack of success than those who more easily solved the problem. They have learned more about their organization through figuring out why they had difficulty in solving the problem, and they have learned about problems within their team that have prevented a solution. Inability to gain results is a disorienting dilemma that often spurs deeper learning.

Action Science: Letters to Bob Putnam and his Response

Dear Bob,

It seems to me that action science has a very powerful and practical theory of knowledge for action, and it has methodologies for exploring this in practice, which I want to honour and appreciate. And my first question therefore is, 'does this powerful and very focused theory of knowledge mean that action science narrows its scope of inquiry to an exploration of Theory I and Theory II?' Suppose our inquiry questions are about how to be better performers (in Goffman's terms) and to understand the nature and consequences of facework? Or suppose our first person research questions are about how to use particular self-healing exercises to manage a particular medical condition? Or how to practise holistic medicine in surgery? Or how to live and act as a person of African Caribbean descent living in Britain? Or how to cultivate the qualities of an ironist (in Torbert's terms)? I am sure that a lot of the theories of knowledge that are part of action science will be relevant here, but I think there may be a wider scope of action research which action science does not address.

My second question about action science concerns the extent to which it facilitates the emergence of an attitude of inquiry. There is a sense in which action science seems to me to be quite prescriptive (i.e. here is a bad way to behave and here is a good way to behave). So does action science go far enough in encouraging people to develop their own propositional models and explore these in practice? Is action science truly 'double loop' learning, or simply the substitution of one single-loop for another?

My point concerns the relationship of action science and co-operative inquiry. You say, and I agree with you, that it is necessary to engage the 'causal factors that lead players to interact as they do', and as far as I can see this involves pointing out to the players the way their practice is inconsistent with their espoused theories. It is here that I believe the discipline of co-operative inquiry would be helpful. It would be interesting to consider how one might establish a co-operative inquiry to explore and develop the theories of knowledge for action which is at the heart of action science. This would involve inviting a group of people to join an inquiry group and engage together in cycles of action (attempting to enact Model II based behaviour) and reflection (making sense of their experience)—I think you can see from my own article how one might set this up.

I am not sure how different this would be from your practice. My sense is that co-operative inquiry emphasizes some things that you don't. First, the cycles of action and reflection provide a discipline and a container for inquiry. Second, the experience of working in a peer group, seeing others going through the same process, sharing things in common and seeing differences provides a kind of feedback which illuminates one's own practice. And somehow—and I don't think it always happens—these two factors combine to bring about the kind of self-reflective inquiry, the kind of paradoxical questions which address the question of who is it that is knowing, what is the nature of my knowing, and so on.

So I would argue that the way co-operative inquiry establishes an inquiry group, with a structure of cycles of action and reflection over a period of time in which responsibility for the inquiry is increasingly owned and managed by the group as a whole, provides an additional dimension which I don't see in the writing about action science. I also think that the validity procedures we have developed (which I touch on in my article) can provide significant ways of exploring distress, self-deception, and other barriers of in-depth inquiry.

PETER REASON

Dear Bob,

As you know, I am an advocate for and a practitioner of action science, so I have had over a decade now to reflect on and to struggle with this phenomenon. I remain convinced that it is a powerful action strategy for effecting deep transformational change in individuals and groups. What I continue to struggle with is the larger system implications of this work. So I wanted to take this opportunity to ask you to help me think through a couple of issues I have struggled with in action science.

You state that 'action science seeks to help members of organizations reflect on and improve social practices that shape inquiry, choice and action.' The social practices are said to reflect values common to western ideology: valid information, informed choice, internal commitment, personal responsibility, competence, and justice. I teach a course in collaboration with a faculty member at the University of Manchester in which we bring students from different cultures together in a T-group followed by action science case work. We work together in an intense face-to-face session for one week followed by five weeks of small group casework, conducted virtually. Groups are made up of students from different cultures, and we have framed our learning of these two reflective practices against a backdrop of cross-cultural communication. The focus on culture seems to make people somewhat more sensitive to nuances of meaning and hence more willing to explore differences in each other's meaning making. On the other hand, the underlying western values of action science also become problematic. For example, Malaysian students have found the focus on individual responsibility over community counter-cultural. Others have noted that face saving is crucial in their culture. How do you respond to these cultural concerns?

Similarly, although action research is intended to be both social and psychological, it has often seemed that each variant is either more psychological than social or vice versa. In the case of action science, the focus on the individual case often leads to a psychological focus, an exploration of what is inside individuals that led them to act as they did rather than what it is in the organization or even in society that constrains individual action. Your interventions in the case focus on what the senior manager, the team leader, or the group might do differently to raise the difficult perspectives that each holds about the other. At a different level, however, there are social justice dimensions to this case that you do not address. In this instance, the power differential between the team and the senior manager is key. You suggest that the underlying causal factor in this case is that both parties have spontaneous, genuine emotional reactions that inhibit competent acting. It is clear from the left-hand column that the team leader is angry. But getting the senior manager to share his reasoning does not address the organizational fact that in this and in most organizations, if a senior manager says it does not work, he has more power to kill the plan than the team do to argue against it. In order for the team to enact their plan, they have to have the cloak of authority only the senior manager can bestow, and they are already powerless even to get him to respond to their messages or to come to the meeting. Addressing an individual team member's sense of helplessness addresses a control dynamic at one level, but does not address the underlying power issue that makes this dialogue so emotionally explosive. This issue is even more potent when the case writer is also dealing with systemic discrimination—issues of race, gender or class, or societal issues such as sexual harassment. How do you address these more systemic root causes through the lens of a case such as this one?

KAREN WATKINS

Response from Bob Putnam

Dear Peter and Karen,

Each of you raises questions about the scope of action science. Peter asks about the range of topics that can be explored. The domain of action science is how people design action in relation to one another and what kind of behavioral world they create. We have a theory of practice for conducting inquiry in this domain which is partially captured in the shorthand 'model II'. Sometimes the focus of inquiry is how people develop this theory of practice. Other times our theory remains in the background as we help a client system inquire into its topics of concern. For example, we have helped educators reflect on their teaching practice, engineers on how they manage project commitments, and executives on how they make strategic choices. Peter's example of how to use self-healing exercises, on the other hand, does not seem like our kind of question. Facework is an interesting case, because an inquiry into its consequences probably requires violating its rules. Otherwise actors would not get the feedback they would need. We might begin such an inquiry by challenging its presuppositions.

Peter seems to suggest that prescriptive theory is inconsistent with an attitude of inquiry. Yet Peter's theory also is prescriptive: create cycles of action and reflection, do not leave research to the experts, foster inquiry. In action science we often facilitate inquiry in settings in which it is rare, and we often help people develop their ability to inquire.

Karen asks about the relevance of action science in non-western cultures. Our experience is primarily in North America and Europe, and we might well have to modify our practice to work effectively in other parts of the world. But the fundamental principles should be relevant across cultures. Concerns about face saving and the risks of openness are not limited to Asia; we find them in the US as well. The socio-emotional reflexes of everyday life often clash with the values of valid information and personal responsibility, and in this sense action science is counter-cultural everywhere! The key is that whatever the culturally embedded values of face saving and politeness, people also give allegiance to values that create a basis for reflective critique of social practices that constrain learning. I am optimistic that we could find this in most cultures.

Karen also wonders how action science addresses social issues that go beyond individual and group transformation. The short answer is: by working with those who by their actions create and maintain social reality. In the case of the manufacturing manager, this includes both the team members and the senior manager, as well as others in the organization. As Karen points out, the senior manager has power over the team members. They could change the nature of this relationship by mutual consent if, for example, the senior manager saw the team as acting for the good of the organization. But to have this conversation, often it is necessary for the more senior people to work first among themselves. They should consider: what are the norms of responsible leadership to which we will hold ourselves accountable? If we are going to foster empowerment, how do we respond when people come back with what we consider bad ideas? What is it about how we currently lead that may get in the way?

Sometimes people with power over others act unjustly. In such cases it makes sense for those others to protect themselves. The risk I would highlight, however, is that such attributions can become self-fulfilling prophecies. Self-protective behavior contributes to reinforcing cycles of mistrust and blame. One role for action science is to help people create valid tests of their attributions and to reflect on their own contribution.

Developmental Action Inquiry: Letters to Bill Torbert and his Response

Dear Bill,

We have read some of your work, and have seen you 'in action', but as we read your letter, we imagined ourselves as neophytes to Action Inquiry. We think that the neophyte might find Action Inquiry mysterious. Can you say more descriptively what Action Inquiry looks like when it is practiced? How does the consultant work with it in his/her organizational interventions? The 'mystical' tone of the first few pages of the article recalls for us the belly-based bellow with which you started your presentation at the Academy of Management symposium originating this special issue. We personally found that bellow mysterious as well as tantalizing, but this somewhat magical quality of Action Inquiry may also be dis-inviting unless one has a 'calling' to it, or otherwise experiences the benefits of working in this way. This also leads us to think that it could be difficult to implement in many organizations because the culture would perceive it to be too great a leap beyond current capabilities—whether or not that is true.

So, while we can see how you can implement Action Inquiry in your graduate curriculum—where students are informed of what they will experience, and agree to it in advance—we wonder about how you introduce it in an organization. How can one use Action Inquiry as a wide scale intervention in an organization, given that—as your research suggests—so many of the people who are likely to be involved in an intervention will find Action Inquiry beyond their current developmental level? Do you adjust the way in which you use Action Inquiry to the readiness of different participants? Do you simply assume that a number of people will not fully catch on, but that it is worth it to bring the others to a new level of insight and understanding? Do you choose not to offer Action Inquiry in certain organizations based on the process not meeting the organization's needs?

Finally, we agree with your assessment that Action Learning is often *implemented* as 'single-loop learning'. But, we also find that some Action Learning practitioners intentionally seek double-loop learning, and that when they do, their work with a set (and as you indicate, subsequent action) can lead to personal or organizational transformation. We (and our colleagues) have written about the critically reflective potential of Action Learning based on our research, informal observations, and some of the initiatives in which we have also been personally involved. We have found that Action Learning can effect deep change, depending on how it is implemented. We have also used the notion of a liberating structure that you and Fisher propose to analyze the ways in which Action Learning creates space for transformative learning. We conclude that Action Learning can provide a first step toward transformation—in part because it is designed to start with single-loop learning, which is less threatening even though it may not go far enough—precisely because it does not challenge deeply held assumptions. So, we see this is a paradox. Deep change may need to start with shallow change. And even shallow change can cause distress in an Action Learning program because it begins to move pieces of the organization in new directions, which then have an impact on other pieces of the organization. Would you explain this phenomenon as a manifestation by arguing that the people involved are probably themselves functioning at a higher developmental level, and because of their capability, bring others along with them?

VICTORIA MARSICK and JUDY O'NEIL

Dear Bill,

I was dazzled by the comprehensiveness and the complexity of your fascinating article. Your Developmental Action Inquiry indeed comes across to me as a holistic enterprise which comprises individual inquiry into one's social and psychological surroundings, creating communities of inquiry, and effecting ripples in larger social circles, all with the potential for transformative changes. This is a kind of trinity that I can relate to in terms of my own fondness for number three in talking about different forms of knowledge. But this is only the beginning of your numerology which has left me dizzy counting. In addition to the three questions which point to these elements of DAI, there are three orders of learning, or three different kinds of feedback with one, two, or three loops; four territories of experience; four levels of inquiry consisting of noumenal, nominal, ordinal, and interval; and eight stages of development.

While this kind of counting serves the purpose of reassuring me that DAI is indeed holistic in every sense imaginable for individual and social change, it leaves me wondering if indeed there is anything a priori about these numbers, as you seem to imply. You invoke the qualitative meanings attached to single digit numbers, 0, 1, 2, 3, and 8 to justify your own enumeration of conceptual components. But without a more detailed excursion into the philosophy of numbers, for which you obviously did not have space in this article, I am not sure if numerical postulations can be accepted as foundational, however appealing they may be. For example, it is tempting to say that there is something about number three which makes it unlikely that there is such a thing as fourth-order learning or quadruple-loop learning. But at least in the way you define the orders of learning, there does not appear to be a compelling reason to stop with the third-order. Similarly, it is attractive to say that the developmental stages are like octaves in a musical scale. Among other things, it implies that the stages will repeat themselves in a spiral, toward a higher stage of fulfillment. Numbers extend to infinity, but what are the existential limits to human development?

It is tempting to think that we develop styles of inquiry as we mature individually or as members of an organization, as you postulate. But this formulation carries troublesome implications. One is that a later-stage style is, in some sense, more evolved, meaning superior in quality, and another that it is contingent upon earlier ones. Quite aside from the problematic tagging of the stages by age hierarchy, this implies that a later-stage inquiry such as Cooperative Experimental Inquiry, has to pass through others at earlier stages. I cannot speak for this particular school of action-oriented research per se, but at least in terms of some of the evocative concepts you mention for this stage of development, such as love and friendship, it is distinctively possible that this way of relating to the world may occur early in the life of the individual, leaving aside the organizational analogy for now. Your hierarchy looks suspiciously looks biased toward western culture and the male gender. I conceive of inquiries that lead to communal relationships as being concurrent with, if not antecedent to, other approaches to generating knowledge, such as behaviorist or gestalt, which you put earlier in your scheme, and liberatory practices, which come later as a kind of crowning accomplishment. I applaud the holistic nature of DAI, but I prefer to think of its constitutive elements as mutually complementary and supportive moments rather than hierarchical stages of development.

PETER PARK

Dear Bill,

As usual, I much enjoyed and much appreciated your article. And it also infuriated me! Parts of it are clear and parts of it seem almost wilfully obscure—and I can't believe that this is just because of my lack of vision and understanding.

For the first few pages I am absolutely with you. You are articulating well the characteristics of action inquiry that have left me fascinated with your work since the late 1970s. But I am completely floored by the 'analogic' reasoning that you plunge into around about page 194. I find I am reading the rest of the article 'through' your analogic, almost brushing it aside to find the bits I can understand and do value. With some relief I find myself at *Four* and the four territories of attention, and for the next few pages I am back on safe ground. Then you plunge me again in to a numbers-emphasized discussion of the developmental theory and I can just about follow some of the connections, but it is too fast and I can't quite see why the emphasized numbers are supposed to help me at all, and I don't see why it is a developmental 'octave'. And yes, I see there is an important point here about the nature of analogical theorizing: 'wholes and their nesting, struggling, co-operating', but you have given me too much new food too fast and I am not digesting it!

My reaction might suggest why developmental theory is so much objected to in the social sciences. I have grown to see that while we expect 'development' to mean 'better and better' from your perspective it means 'more and more complex and paradoxical'; and while we might normally expect 'late stage' people to be 'powerful leaders', in your way of seeing things, they work more 'in service' of other folks.

My second concern is with how you use 'data'. The stories you tell about me are just not 'accurate'. Sure, they are reasonably correct in spirit, but they gloss over so much and in an important sense are simply not me! I am curious that you didn't use any of the stories I sent you about these incidents, and whether any of this matters.

I think you are absolutely right in emphasizing the importance of interweaving research/practice into 'ordinary everyday settings' and on blending action and reflection moment to moment. As you know, I try to do that. But I think where we differ is in my emphasis on cycles of action and reflection within a co-operative inquiry group. I believe this process provides a discipline and a container; and the energy and supportive presence of the group provides, at its best, a nexus in which individuals can realize developmental leaps: I quote Annie as saying something like this in my article. I think if you give people (yourself and others) too much of the 'paradoxical, ironic, mutliply transformational developmental journey' without also offering a simple container—an inquiry group and cycles of action and reflection—the danger is we will all get lost.

PETER REASON

Response from Bill Torbert

Dear Victoria, Judy, and both Peters,

Thank you so much for your honest and thoughtful letters. What an invigorating process this particular type of cooperative inquiry is! It has been so much more productively challenging than the usual anonymous, attacking, defensive byplay of academic exchanges. Unfortunately, more questions were raised than I can respond to within our limit.

All of you comment on the dizzying reach, range, and complexity inherent in

Developmental Action Inquiry, and you wonder whether this makes DAI hard to implement in many organizations. My response is that DAI theory and practice *implicitly* informs as much of my perception, conception, attention, and action as I can allow it to in my consulting, teaching, and even family activities; but developmental theory itself suggests that theory and practice become *explicated and explicitly linked to one another* only at a relatively late stage (Stage VI) of any process. Therefore, I do not introduce DAI as a theory (except in bits and pieces that are directly relevant to some specific dilemma) early in my consulting interventions and often not at all. Without explicitly sharing DAI, I am likely to build a picture from executive interviews of a next-stage vision for the organization that gains clarity from my knowledge of the organizational stages. Or I am likely to spot early candidates for modeling vulnerability to feedback and personal transformation on the basis of my clinical judgment that they are attuned to the Strategist action-logic (for many up-close descriptions of my practice, see, in the reference section of my article, Torbert, 1987, 1991; Fisher and Torbert, 1995; Rooke and Torbert, 1998). One of the great paradoxes of life is that children and early stage organizations must go through repeated, upending, double-loop transformations before they become capable of reliable single-loop learning (at Stage V), much less begin to conceptualize and intentionally facilitate double-loop transformation (at Stage VI). I agree with Victoria and Judy that deep change often begins with surface change, and I believe that developmental theory is the first coherent account of how single-, double-, and triple-loop change can interplay over time.

Peter Park is quite right to label my 'age tagging' of the developmental stages 'problematic', and that is why the tags are accompanied by so many question marks and open-ended dashes, indicating that any of us may cease transforming to later stages at any point (the age tagging is simply intended as a heuristic). With regard to the developmental categories of science, he is again quite right to point out that neither social scientists nor persons conducting less formal research need evolve through all the types of science named there. There are two differences between this set of categories and the personal and organizational stages that account for this. The first is that people don't become formal scientists until their early twenties, so they may very well already be practicing an action-logic in their personal life that corresponds, say, to Cooperative Ecological Inquiry. They may therefore be predisposed to adopt such a methodology formally from the start. The second point is that the sciences labeled in the table are explicit epistemologies of formal modernist, third-person sciences ('graduating' at the later, postmodern stages toward reintegrating first-, second-, and third-person types of inquiry). They are not reconstructions of how people actually interweave more or less consistent and explicit first-, second-, and third-person inquiries in everyday life.

Last, I would like to respond, inadequately, to both Peters' comments about the mathematical base I propose, far too briefly, for DAI. Just as we need to rebalance our relationship to our planet from one of industrial rape, and to rebalance our political/organizational relationships with one another from unilateral, hierarchical power toward mutual, transforming power, so also we need to rebalance our relationship to number from one of counting to one of analogical wondering. Whether and how number may be foundationally constitutive of all our experiencing, only further inquiry can tell. For now, DAI simply asserts that the language and action turns in social science do not 'leave mathematics behind', but rather can offer us a more profound, relational, transformational mathematics (including the new fractal geometries) than the earlier stage scientific epistemologies.

Thanks to you all for joining in this extended forum, and especially to Joe Raelin for creating and sustaining this work.

Co-operative Inquiry: Letters to Peter Reason and his Response

Dear Peter,

We found your discussion of Co-operative Inquiry (CI) to be clear, enlightening and provocative. As we have no direct experiential sense of CI, not surprisingly, we read about CI using our own experiential lens of Action Learning (AL).

As you noted, we also find that the family of action strategies in this volume have more in common than not. We also find that—with some exceptions, notably Action Science and Action Inquiry—they can be difficult to distinguish in practice based on their label alone because the form they take on is highly influenced by the life experiences of the people who practice them. In fact, Judy found in her research on action learning coaches that the interventionist's belief system may be the primary differentiator between one or other form of how AL is practiced.

We have seen some AL groups naturally use some of the CI procedures and practical steps that you identify, and when they have, they have achieved much deeper results. The degree to which they do so seems to depend on the degree to which people have voluntarily come together, as well as their willingness to push the boundaries of their thinking. We assume that in CI, participants discuss both of these conditions in some depth on initiating their journey together, and that they continue to re-contract around these conditions as they encounter conflict in views and expectations. Is that your experience?

In AL, some groups are ready to go into deeper waters of critical reflection on self and system than are others. The beauty of CI is that the procedures you identify, in and of themselves, create a more consistent structure for peerness and critical reflection. As with CI, in AL groups, people have to voluntarily agree to the inner and outer limits of their learning. We see a paradox in AL because, when implemented in organizations, participation may be voluntary in name but not fully in fact. We recognize that many AL groups can agree to NOT engage in the depth of critique that CI participants reach. In respecting these boundaries, an AL 'coach' can (and might) attempt to move a person or the group to another level, but must respect the participants' self-identified limits. Have you encountered such limits in CI groups, or does the nature of the practice preclude such dilemmas?

It seems that, in embracing CI, a person makes a choice to only work in a medium that is conducive to reaching what is for them a more satisfying, critical depth. We assume that people in CI still find it difficult to see their own blind spots, and that negotiating conflict among positions strongly held can generate a good deal of acrimony even when people have voluntarily entered into the contracted arrangement. Yet, it seems that it takes a certain basic level of self-awareness to even make the choice to work in a CI group. In contrast, people might move into an AL group with the expectation of solving problems at a simpler, more single-loop level, and then become drawn into a deeper level of critical reflection that may or may not further embrace. Would you agree?

VICTORIA MARSICK and JUDY O'NEIL

Dear Peter,

I'd like to compare co-operative inquiry as you describe it with what I think is a similar experience in my work in action science, which is my learning relationship with my partners, Phil McArthur and Diana McLain Smith, over the past eighteen years. This has been the most important context for what I'll call the personal side of our professional development.

You speak of the need for an initial structure for the group and also of a 'descent into chaos' in moving to a new creative order. We began as a study group to develop our skill in model II and adopted the case reflection structure that we had learned from Chris Argyris. After about two years the group began to feel stale. We decided that we either had to raise the stakes or disband. We chose to shift from reflecting on cases from our outside activities to reflecting on our interactions in the group, and especially on those frustrating moments that we referred to as 'being in the muck'. Over the next six months we discovered that each of us had characteristic ways of responding when we felt ourselves in the muck. Each of us was trying to help; each of us saw the others as making things worse; and our various efforts combined to keep us in the muck. We gained appreciation both for each other's integrity and for our different emotional responses and how we triggered each other.

My story points to the role of self-reflective inquiry, which I agree is essential. In our case we work within the framework of action science, which I think offers a strong methodology for reflection that is connected to action. My impression is that co-operative inquiry is less prescriptive about how to do self-reflective inquiry, which I would think is both a strength and a liability. It may allow more receptivity to approaches that action science would find wanting. On the other hand, I see a lot of well-intentioned reflection that is quite unproductive, and I would think that co-operative inquiry groups could be vulnerable to thrashing around and getting discouraged at the lack of progress.

You do not mention the possible role of a mentor or consultant who is an influential outsider to the co-operative inquiry group. This has been important for us. In the early years we had Chris as mentor and advisor, although he did not consult to the group as a group. In later years we have maintained a relationship with David Kantor, a family systems theorist and therapist, both as a consultant to our relationship as partners and as a contributor to our ongoing work in developing our models of practice.

You mention the importance of critical subjectivity to correct for the possibility that we are fooling ourselves, and you also mention the role of the peer group in providing both support and challenge. I put these together because the most common ways in which people provide emotional support tend to reinforce self-deception. One person says to another, 'You won't believe what Craig did today!' and the other responds, 'Isn't he impossible!' while choosing not to say, 'And you brought it on yourself'. Developing the capability to be supportive in ways that do not collude in self-deception is, I believe, a major journey, and most groups don't make it. In thinking about how our two approaches address this situation, it seems to me that action science leads with more of a critical stance while co-operative inquiry is more accepting. The sense I get from your article is that everyone can do co-operative inquiry, although of course you describe the challenges of the process. I wonder to what degree those who are attracted to co-operative inquiry may not realize how far they have to go in order to do it well.

BOB PUTNAM

Dear Peter,

I want to begin by dignifying you in comparison to the two persons whom I a few years ago advocated as fitting recipients of the Nobel Prize in Economics. One was Amartya Sen, this year's recipient. Sen is the only major economist keen on Adam Smith's *Theory of Moral Sentiments*. He is a re-integrator of philosophy, politics, and economics, a re-analyst of the very notion of rationality, who has taught us that, bounded though rationality may ordinarily be (à la Simon), it can be bounded in numerous different ways (roughly five, from Opportunist through Strategist in developmental terms). I am pleased that the social sciences, as symbolized by the Nobel in Economics, have canonized a practitioner of multiple ways of knowing (à la Reason).

The second person whom I advocated as a fitting recipient of the Nobel in Economics, after Sen, was Chris Argyris. Argyris is the only major contributor to a wide range of social science literatures (economics, psychology, political science, sociology, education, management, and more) who has devoted an entire career to theorizing about, attempting to enact, and documenting the possibility and significance—for persons, for society, and for science—of the as-yet-little-appreciated human ability to re-bound one's own and others' rationality. (As Putnam describes in this issue, this re-bounding from one type of rationality to another is described as occurring through double-loop feedback that can help one discover and heal incongruities between one's propositional rationality [espoused theory] and one's practical rationality [theory-in-use].)

You, of course, spread your net still wider, wishing to catch the whole of persons, in the whole range of our moment-to-moment lives, from relatively unreflectively active to relatively inactively reflective, inviting us into a more vivid dialectical dance of action with inquiry in our meetings with others, as in our time alone. You invite us to observe, participate in, and re-bound the multiplicity of rationalities that interweave within any one of us and in any meeting among more of us. You are one of the pied pipers of a democratic, spiritual, mutual, non-elitist social science and social action universe altogether alien to at least 9,999 of every 10,000 social scientists and lay people.

One of the delightful qualities of all your writing in recent years is that it exudes the simple, attractive, and wise aesthetic of a slightly older brother offering guidance in an adventure that no one can take for, or in the same way as, anyone else. Or, as Ursula LeGuin translates the opening lines of the Tao Te Ching, 'The path that can be followed/Is not the real path'. Indeed, not only your writing exudes this aesthetic, but your life as a whole in its multiple and deep collaborative commitment dances, in its idiosyncracy, and in its ordinariness.

What's missing from this attractive universe? Well … number, time, money, organizations, and other large third-person aggregates to name a few, not to mention any methodology recognizable to mainstream science today, other than the softest of qualitative testimonies. You simply eschew what you don't like (e.g. my use of number, or in response to the case about which we were each asked to comment: 'I wouldn't start there'). But you do so artfully, and there is a great deal to be said for that.

And you've been my best friend in our profession for the past twenty years, which is certainly a challenge, and which I certainly celebrate!

BILL TORBERT

Response from Peter Reason

Dear Victoria, Judy, Bob and Bill,

Victoria and Judy ask about how participants in co-operative inquiry start their journey together, and how they continue to re-contract along the way. I think that my experience with all kinds of collaborative work in groups is that the contracting, in task and process and on rational and emotional terms, is possibly the most crucial phase of the enterprise. My experience of successful co-operative inquiry groups is that there will be two, maybe three, exploratory sessions before it is agreed to 'become' a group. People need to feel comfortable with all the questions that hover at the beginning of a group: will I be included, will people like me, will the group meet my personal needs? It takes time to properly explore these issues. Not to say that the exploration is ever completed, and I think these questions are always revisited in the process of the inquiry with the cycles of action and reflection—and the process time we have usually built in—encouraging this. Once I rushed these contracting stages, when I was working in an organizational context and wanted to show that co-operative inquiry could deliver; we ran into interesting and difficult conflicts about the purpose of the group and who was exerting power.

My feeling is, then, that the structure of the inquiry cycles, the regular meetings, the developing comradeship with both support and challenge, provides a container which helps people go deeper than they first imagined they might. I think this is similar to the point Victoria and Judy make in their letter to Bill when suggesting that Action Learning may provide a first step toward transformative learning, and that deep change may need to start with shallow change as people become drawn into a deeper level of critical reflection. Similarly, Bob suggests that people who are attracted to co-operative inquiry may not realize how far they have to go in order to do it well. This is why I find the co-operative inquiry process such a powerful process, one that leads people into the kinds of developmental change that Bill describes in Developmental Action Inquiry.

Bob then asks if anyone can do co-operative inquiry. I think the important answer is 'Yes!', and this is where I am with Peter Park and his assertion to Linda and Karen that participatory forms of research are essentially emancipatory. What has thrilled me most has been when I have heard of someone who has been influenced by my writing using co-operative inquiry in their own way with ordinary people facing their everyday issues; or when one of our graduate students sets up a process which liberates his or her own and other people's creative intelligence. That is why I think it is important that this work faces two ways: toward simple, liberating disciplines that anyone can use; AND toward radical challenge to the roots of western epistemology. Pedagogy of the oppressed and pedagogy of the privileged! Yes, anyone can do co-operative inquiry, although I am sure that the process is helped along by people with democratic facilitation skills who are prepared to use their knowledge and authority in the service of increased democratic inquiry, people who are able to inquire moment to moment, on line, into their practice, people who are drawing on skills which are developed through action science and action inquiry.

I much appreciate Bill's wonderfully paradoxical good comments about my contribution. I like the idea of being a Pied Piper (not least because I love dressing up). But do I 'simply eschew what you don't like'? Yes and No. I seem to flourish in the margins of academic and organizational life, both respectable and deviant, influential and ignored. I think this is where I need to be as a man and that this is where our forms of action practice are, and probably where they need to be. Goddess forbid that we become mainstream, but let us be sufficiently respectable that we cannot be ignored! And in doing this let us hold hard to the diversity, the differences, the mutual challenges that have been represented in these letters!

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Reviews

Books

Developing Strategic Thought: Rediscovering the Art of Direction Giving
BOB GARRATT (ed.). London: HarperCollins, 1996. 316 pp. £9.99. ISBN 0–006–38679–2

Henry Mintzberg may have saved my sanity, but made me damn near unemployable. His *Rise and Fall of Strategic Planning* confirmed my doubts about that process, but failed to impress my clients. Indeed, on one occasion I was unceremoniously dumped for a less argumentative consultant.

Is this book going to make me employable again? Will I be able to explain what strategy is all about to my planning oriented friends? Perhaps not, but don't let that put you off reading this always engaging, often insightful, if somewhat rambling book.

Pragmatically, the editor, Bob Garratt has rather loosely melded and moulded 12 very different contributions. His own contributions, at the beginning and the end of the book, do however help keep the bulging contents in place. The introduction focuses on the criticisms of traditional strategic planning; the need for divergent as well as convergent thinking; the role of rigour and the power of reflection. His closing contribution ('Helicopters and rotting fish: developing strategic thinking and new roles for direction-givers') may have been an attempt to pull the book together. If so, it fails, but not to worry, the chapter stands on its own merits. Garratt puts forward a convincing strategy development process, and makes some important points about the need for organizations to understand that strategic thinking implies debate and lots of it. I enjoyed his wry comment about the shock many successful managers receive when they realize that thinking strategically is essentially an intellectual exercise.

What actually holds the book together is the hidden hand of Henry Mintzberg. His presence is everywhere in this book, and his short contribution ('Strategic thinking as seeing') is for me its fulcrum. Short and tucked rather oddly in the middle section, it is a welcome relief from the often overargued prose of some contributors. For him strategic thinking is not just the 'helicopter-view' we hear so much about. After all, from above, a field looks like a carpet—make that mistake at your peril! For him strategic thinking combines thinking above, behind, below, ahead, beside, beyond and through. Get it? Got it? Simple.

At the other extreme, Jerry Rhodes ('The process of thinking strategically') first confronts you with a model of 25 'thunks' of strategic thinking. Thankfully he focuses his attention on just seven—'set level', 'distinguish', 'symbolize', 'pretend',

'look in/out', 'code', and 'value'. Baffling as some of these concepts may seem on this page, his exploration of their role is clear and concise.

The explicit assumption underpinning many of the contributions, especially those from Bob Tricker, Bob Garratt, Phil Hanford, Mike Pedler, Colin Swarder and David Wilkinson, is that strategic thinking is about leadership. What I found slightly surprising for apparently 'radical' organizational thinkers, is that they implicitly appear to consider leadership primarily as a function for the upper half of an organization's hierarchy. Strategy as an elite process may be a common view, but other thoughts are beginning to emerge. Colin Swarder's contribution ('Hearing the baby's cry: it's all in the thinking') probably gets nearest to those ideas. He views strategy development as a more bottom-up activity. The role of senior management is to create the space for the strategic direction to develop, and to harness it once it has. Despite the top-down emphasis, I found Hanford's tools for developing strategic thinking competencies one of the most practically useful parts of the book.

Max Boisot ('Preparing for turbulence: the changing relationship between strategy and management development in the learning organization') is another bottom-up person. He focuses on how environmental turbulence, and environmental understanding affect the strategic process. Unlike many in the strategy field, he acknowledges a role for strategic planning (in conditions of high understanding and low turbulence). Importantly he points out that high environmental understanding during conditions of high environmental turbulence needs skilled and strategic organizational learning processes.

Like any compendium of strong willed experts, the product is a bit of a curate's egg at times. Christopher Lorenz ('Design as a strategic management resource') has a single insight. Tucked away in your 'design team' are some of your best strategic thinkers. Use them. Simple, valuable, profound, but hardly worth 20 pages. The contributions from Sue Canney Davison ('International Teams: avoiding the pitfalls and creating an international strategy') and Fons Trompenaars ('Developing the international manager strategically') are fascinating explorations into cross-cultural relationships, but despite their titles, the relevance to strategy took a couple of reads to emerge. Eventually it occurred to me that Trompenaars' use of Charles Hampden-Turner's framework for assessing cross-cultural dynamics was not just a means of assessing people's orientations towards strategic thinking, but a strategic approach in itself. What I also found interesting was that relatively small psychometric differences can give rise to profoundly different cultural expressions—for me an important strategic issue.

Hampden-Turner's own contribution ('Strategic dilemmas occasioned by using alternative scenarios of the future'), along with Bill Weinstein's, 'The use of scenario thinking: can a scenario a day keep the business doctor away', dominate the centre portion of the book. Hampden-Turner, during 40 or so pages, introduces us to two more of his frameworks, and uses them to analyse three scenarios about the future of capitalism. I found the approach rather contrived, but it works well as a demonstration of how to develop and use scenario stories. His view that strategy development is essentially about cycles of learning, rather than a product, is a critical, and often ignored, point. Weinstein deals rather more succinctly with the key considerations, benefits and potential traps in scenario planning. I suspect I will find his contribution on scenario development ultimately more useful.

In the end does this book pass my 'so what' test? I always hope that books like these

exceed the sum of their parts. It doesn't, and wisely Garratt has not even tried. The sheer diversity and quality of the individual contributions are the book's strength, and trying to pull them all into a line would have been a mistake. So what you see is what you get—a pot-pourri of interesting, valuable and potentially useful articles on a complex and much misunderstood topic. So on balance, yes it does pass my test, and it might even make me more employable.

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Managing in Organizations that Learn
STEVEN CAVALERI and DAVID FEARON (eds). Oxford: Blackwell, 1996. 539 pp. ISBN 1–55786–660–0

Organizational Learning: The Competitive Advantage of the Future
GILBERT PROBST and BETTINA BÜCHEL. Hemel Hempstead: Prentice Hall, 1997. 185 pp. £21.95 (pbk). ISBN 0–13–462326–6

In both of these books the claim is made for organizational learning to become a new noun and the next management paradigm, supplanting the dominance of TQM and BPR. Peter Senge's book *The Fifth Discipline* (1990) is seen as the seminal starting point. This bold claim is advocated in both volumes with great enthusiasm, bordering on the proselyte. It is, to some extent, a position that underpins the rationale of this journal. So it is important to ask to what extent can this claim be substantiated and, stepping back from the detailed argument, can a broader consideration of this new management fashion tell us something about current perceptions of coping with the inherently contradictory process of management?

The Probst and Büchel volume is essentially a prescriptive guide book, drawing upon both US and European developments. Following the usual justification of the need for organizational learning—global competition, growing sophistication of competition and our constant enemy, time—the book moves into a fairly standard format of definitions, processes of managing change and key levers to establish learning, strategy, structure, culture and human resources. The book is clearly written (and translated from German), reasonably well based upon current organizational learning writing, and every chapter is illustrated by case studies and backed by activities called 'worksheets'. Much information is packed into the 186 pages. In short, a fairly good introductory text.

The Cavaleri and Fearon volume is more expansive, discursive and possibly more comprehensive. It is an edited collection of contributions from US writers. The contributions are grouped into themes: managing and learning; learning through working; linking teams with systems learning; learning communities; balancing managing and learning; transforming organizations for learning and performance. The intention of the book is to brainstorm the topic and generate some wide and wild thinking about the potentials and problems of creating a learning organization. Contributions are fairly eclectic and often seem to defy their thematic categorization. Repetition is a constant problem and there is a distinctive lack of critical depth. When this is coupled with its encyclopaedic size and qualities, reading is made difficult, but the odd gem is discernible. The authors propose that it might fall

'outside their [the readers] comfort zone'. It often did but not for the reasons they suggest.

A number of key points sustain the 'progressive claims' made for organizational learning in both volumes. Progressive, in this context, means being successful in a global competitive environment. First, social control, especially of the rational command bureaucratic kind, is doomed 'to fade into the dusk of history'. Both TQM and BPR have not sufficiently moved from this stage. Second, leaders in organizations are central to any change and they must be the right people, able to think strategically, brave enough to give up control and able to interact democratically and negotiate their authority. Third, this requires leaders to look deeply into their spirituality and history, articulating who they are and unlearning their past. Fourth, a learning organization is one where 'effective action, over time, ... results from the collective knowing, experience and reflection of all members of an organization'. Essentially this is achieved by the whole organization becoming a team, practising systems thinking—especially the 'soft' variety—allowing the 'tacit, and often highly subjective, insights, intuitions, and hunches of individual employees and making [these] insights available for testing and use by the company as a whole'. Fifth, to put this into structural practice the organization needs to be flat, autonomy and responsibility need to be delegated down in order to create self-organization, job descriptions go, work becomes collective with fluid boundaries, divisive practices such as performance related pay need to be stopped, and managers become facilitators. It is then expected that work becomes such a pleasure that the boundaries between home and leisure time also become fluid, thinking and learning productively continuing through this time. Sixth, if those who control can really let go, a knowledge ecology develops which, Gaia-like, develops its own natural equilibrium. All of this is circumscribed by the belief that all members of the organization—team—accept, that survival is about assuring added value for the customer.

This is indeed a bold strategy. But how plausible is it? There are key weaknesses in the logic of the arguments in both volumes. These are weaknesses that apply to other books of the prescriptive genre. Although they acknowledge their debt to Senge and earlier writers in organizational learning such as Argyris, they seem to exist in an academic and historical time warp. In over 800 pages of writing claiming to supersede TQM and BPR, hardly any references are made to the extensive literature that evaluates these two management fashions. Despite the apparently close relationship with the post modernist criticism of rationality and bureaucratic systems there is not a single reference to these debates. Claims are made to draw upon the tradition of sociology as opposed to psychology, yet not one mention is made of relevant sociologists and overlapping debates that relate to agency and structure and social interaction. Even in terms of organization behaviour, let along the more critical approaches of organizational analysis, these are drawn upon incidentally and are not used to sustain the main thesis. Yet over and again, especially in the Cavaleri and Fearon volume, the various writers find the need to try to avoid purely intuitive argument and search the most surprising sources to find a conceptual underpinning; social biologists Maturana and Varela; Albert Einstein; Jung; Webster's Dictionary; and a variety of 'successful' managers. Ultimately, the arguments are based on intuitive enthusiasms and reasonably systematic common sense. What evidence is presented is based upon growing, successful, and almost exclusively private companies with not a trade union in sight.

Despite the historical and academic isolation it is difficult to ignore the arguments since they do relate to problems and issues that have a firmer grounding. First, for those who are interested in critical management many of the themes are common, e.g. the process of reflective practice is very close to the 'soft' systems form of analysis. Second, there are clearly a number of contradictions in the arguments that reveal the difficulties of sustaining control and maintaining strategies if this fashion becomes influential. Third, the very fact that thinking about effective management has taken the learning organization trajectory perhaps reveals something about the nature of capitalist production that opens the door to rendering legitimate debates about emancipation (Alvesson and Willmott, 1996).

One of the central contradictions is the shift from the Taylorist forms of direct control to more collective forms of responsible autonomy (Friedman, 1977). Clearly the intention is still to tap the tacit knowledge of the worker, but to do so through collective interaction and debate as opposed to imposition by method and work study. This practical shift, together with the emphasis on the central importance of people, starts a process of legitimating the role of labour and collectivization which opens up a range of issues that are difficult to contain within the production limits set by the organization's strategy. The defence mechanisms are already in evidence: in one interview in the Cavaleri and Fearon book a chief executive from Hanover Insurance—considered to be one of the key examples of a successful learning organization by the authors—is quoted saying 'I do not think the actual downward flow of power in institutions is going to change. The change will be in enabling the horizontal flow of power to develop freely'. Both books provide practical evidence that power and revenue distribution could become an increasing issue. In one exemplar, employees are the main shareholders in the company—something mentioned in passing. In the UK context collective bargaining, in this circumstance, could start to be seen as a way of encouraging cooperation within the organization. The more management removes the reifying mystic of its right to control, the more both legitimate and organizational spaces open up to those who wish to resist.

The very act of publishing these books as examples of the key issues that management should consider indicates a growing lack of confidence by those who control and may, in itself, reinforce that trend.

At the heart of organizations that learn the argument is empowerment, teamwork, cooperation and open information. If that applies to the organization why should it not be a feature of the wider society? Where the contract state became the political model of the 1980s as a result of corporate thinking, could this now lead to support of democracy and the limitation of the competitive market? One final feature at the very heart of organizational learning is people 'adding value'. The labour theory of value has an uncanny knack at reappearing in the most unexpected forms!

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High-Performing Self-Managed Work Teams: A Comparison of Theory to Practice
DALE E. YEATTS and CLOYD HYTEN. Thousand Oaks, CA and London: Sage Publications, 1998.
379 pp. $58/£45 (hbk), $29.50/£19.99 (pbk). ISBN 0–7619–0469–7 (hbk), 0–7169–0470–0 (pbk)

This book is a 'must' read for scholars and practitioners interested in managing work teams in organizations. Although the focus of the book is on Self-Managed Work Teams (SMWTs), the coverage of the academic literature on people working together for a common goal is exhaustive. The reference list includes 385 citations of research and theoretical works produced between 1938 and 1997. The book is well organized, well written, and succinct.

The book is composed of 27 chapters organized into six sections with each section prefaced by an overview. The six sections are: *Part I*: Theoretical Frameworks for Understanding the Performance of Self-Managed Work Teams; *Part II*: The Work Process: Actually Doing the Work with Effort, Talent, Procedures, and Resources; *Part III*: The Interpersonal Process: The 6 Cs Plus Trust Within and Outside the Team; *Part IV*: The Environment Surrounding the SMWT Within and Outside the Organization; *Part V*: Team Member Characteristics; *Part VI*: Team Design Characteristics.

Part I (Chapters 1–5, 53 pp.), begins with an examination of theoretical frameworks that inform current understanding of the performance of SMWTs. These theoretical frameworks emerge from four perspectives: the classical organizational theories such as scientific management; the human relations perspective; systems theories, particularly the socio-technical systems perspective; and contingency perspective. Chapter 4 is an excellent chapter that reviews: (1) McGrath's Input-Process Model (1964); (2) Gladstein's Model of Subjectively Rated Effectiveness (1984); (3) The Pearce-Ravlin Model (1987); (4) Hackman's Model of SMWT Performance (1988, 1990); (5) Sundstrom-De Meuse-Futrell Model of Team Effectiveness (1990); (6) Tannenbaum and Salas Models of Team Performance (1992); (7) Campion, Medsker, and Higgs Review of Themes Related to Work Group Effectiveness (1993); and (8) Cohen's Model for Effective SMWTs (1994). The work team theories reviewed in Chapter 4 are synthesized in Chapter 5. The synthesized model is then revised using a multicase, multimethod replication design (Yin, 1989) to render the final model (p. 53). The remainder of the book explicates the testing of the theoretical model. Data from three sources were used. The primary source is 10 case studies of SMWTs funded by a three-year grant (1994–1997) from the National Science Foundation. The purpose of this study was to identify those factors most important to SMWT performance. A second source of data is a three-year study funded by the Texas Advanced Research Program. This study examined the effects of SMWTs on performance and employee attitudes. The third source of 'firsthand information' was the Network on Self-Managed Work Teams established by the authors in 1992. The network is hosted quarterly by different companies using SMWTs. Network members are given the opportunity to ask questions to learn how the host organization is handling various issues.

Part II (Chapters 6–7, 19 pp.), is the shortest section in the book. The model synthesized from prior models by the authors in Chapter 5 does not include the information presented in Part II. Thus this section, although very short, is an addition to the model, gleaned by the authors from their own data, and may provide a beneficial direction for future research. Researchers in the field will find this section worth some thought. It is not clear whether this section is short because little

research has been done from this stance and thus little is known, or because the authors were not able to include this literature in their search before the study. The authors state that

> ... most previous theoretical frameworks have treated the team's interpersonal process, rather than the work process, as having direct effects. However, we found that the interpersonal processes, such as communication and coordination, were enhancing the work process factors and that these work process factors were, in turn, directly affecting the team's performance. (p. 57)

Part III (Chapters 8–11, 33 pp.), is an excellent overview of the literature in an area that has received considerable attention by many theorists and researchers. It is worth restating that these researchers found that the greatest influence of the teams' interpersonal processes was the impact on the team's work processes and suggest that this approach be pursued in future studies.

Part IV (Chapters 12–20, 109 pp.), is the longest section in the book. The section includes factors controllable by management as well as factors beyond management's power to modify or influence. Topics covered in the section include the organization's philosophy, culture, and mission for the SMWT; performance measurement including appraisal and assessment systems; reward systems including types of reward; education and training systems; information systems; management support, encouragement, and roles; support within the organization from unions, customers, suppliers, and other ancillary sources; and the environment outside the organization. This section is very large, almost overwhelming to the reader. In my opinion the model and the organization of the book would benefit from separating environment within the organization (controllable by management) from environment outside the organization (beyond management's direct power) and integrating the chapter on information systems into the second section on Work Processes.

Part V (Chapters 21–22, 21 pp.) is a short section covering team members' talents, values, needs, interests, prejudices, personality and demographic characteristics. The interaction between work and worker can be easily seen by the inclusion of worker talents in the model under both work processes (Part II) and team member characteristics (Part V).

In Part VI (Chapters 23–27, 65 pp.), the authors found that Team Design Characteristics have profound effects on the SMWT's performance. Design factors considered range from goal clarity, to team size, to the appropriate combination of employees. The team leader was found to be crucial to the SMWT's success and the roles and responsibilities handed over to the SMWT greatly affected other dimensions of the team.

Yeatts and Hyten have written an excellent reference work. The book synthesizes a wealth of prior research into a testable model of Self-Managed Work Team performance.

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Prisoners of the Crystal Palace—Mapping and Understanding the Social and Cognitive Organization of Scientific Research Fields
PETER STERN. Umea, Sweden: Borea Bokforlag, 1996. 141 pp.

This short book contains three chapters on the organization of scientific research fields. The first is an extended review of recent work in the sociology of science and scientific knowledge. The second reports some results of a bibliometric study of research fields in economics, psychology and sociology based on 92 articles by Swedish academics. The third consists of some brief reflections on the implications of this study for the analysis of scientific knowledge and its organization.

While much of what is said in these chapters is unexceptionable, and sometimes quite interesting, the precise nature of the intellectual problem that Stern is concerned to address, and why it is important, remains opaque. So too does his contribution to our understanding of the organization of scientific research fields. The conclusion that scientific knowledge is 'socially constructed in the sense of it being subjective to an ongoing process of evaluation where the values associated with rational categories … play a crucial part' (p. 139) is scarcely earth-shattering. Presumably this could lead to an analysis of how different values become established in different fields and result in different kinds of knowledge under contrasting circumstances, but no such study is attempted—or indeed even discussed systematically—in this book.

The analysis of co-citation networks based on the 92 Swedish papers and bibliographically related articles published between 1986 and 1991 does reveal some interesting differences between the three disciplines. Similarly, the analysis of 83 research fields based on overlapping references between papers generates further contrasts between them which do not necessarily reflect the structure of their intellectual bases. In particular, differences between groups of cited authors in psychology are not mirrored in the structure of research fields as indicated by overlapping references, while sociology seems to combine a common intellectual heritage for many authors with sharper distinctions between research fields. While these, and other variations, are partly explored in seven interviews with Swedish authors—why only seven?—they are not systematically analysed or linked to the types of knowledge produced. Indeed, the lofty aspirations expressed in Chapter 1 contrast rather strongly with the limited analysis conducted in Chapter 2. This is a pity since more sustained consideration of the differences between the three disciplines in terms of the organization of research fields would have made the book much more valuable.

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