Action Research in
Management Accounting Studies

by Sten Jönsson

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Abstract: New directions in management accounting studies should aim at getting us out of the ontological trap which is provided by the decision making conception of management. The Scandinavian tradition of fieldwork in the area might offer a basis for ontological renewal, which may open up for methodological innovation when we embark on epistemological adventures. The main thrust in this paper is to explore the idea of "modest intervention" in action research with the objective of ontological discovery.

"Inquiry is the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole" John Dewey (McDermott (ed.) 1981)

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Outline of argument.

The claim in this paper is that a renewal of management accounting research is possible and desirable if we focus, for a while, on ontological issues and the research required if we shift our ontological basis from decision making towards organisational learning and management. The argument is first to show how ontology determines which questions are posed and what specifically how our research focus shifts when an organisational learning perspective is applied. Dissatisfaction with the theoretical basis can be expressed by theoretical argument (offering alternative explanations to phenomena, like, e.g., institutional theorists do) or by claiming that empirical observations do not "fit" (like fieldwork in the Scandinavian tradition has given rise to). The empirical route is chosen and an argument for action research with modest intervention is presented.

The ontological trap

Management accounting research is in need of a debate on methods. This need is caused by the rapid changes in the way companies are managed. The traditional manufacturing firm is no longer typical, alliances and other constellations make the issue of what is the unit of analysis fuzzy. Financial accounting approaches seem to gain adherence, and extremely expensive new systems are sold to top management on arguments like integration and quicker payment of bills (to consultants?). Investments that have little chance of earning a decent return. Macintosh (1994) has investigated different alternative views. I have myself argued for approaches which build on trust and co-operation (Jönsson 1996, 1998, Birnberg 1998), and Jönsson & Macintosh (1997) have argued for a dialogue. Gietzmann and Larsen (1998) argue that there are motivational costs involved in emulating the Japanese style of co-operating with subcontractors, just to mention one example of the ontological slippery slope management accounting research finds itself.

My own argument (1998) was intended to align management accounting research with managerial work, and there is overwhelming evidence from empirical studies of managerial work that such work does not include much decision making (Carlson 1951, Mintzberg 1973, Kotter 1982, Luthans et al. 1988). If decision-making is not what managers mostly do – instead they spend most of their activities to inform themselves in order to be able to make good use of judgement, management accounting research may have been barking up the wrong tree. A debate on issues like these is an ontological one; What is it we are studying? and What should we be studying?

First consider the notion that managers' work is to make decisions. Managerial work should add value to the company. Choosing between predetermined alternatives a la textbook cases does not add value (unless some alternative manager would have chosen a worse alternative, but how could he if he is assumed to be a rational decision-maker?). So the value must come from the working out of the alternatives. From conducting the projects which generate the new alternatives or from the governance structure which steers implementation efforts. Or maybe the implementation itself is the value adding work? Anyhow it is clear that the choice between alternatives which are completely specified cannot be considered value adding under the assumptions of rationality. So the choice made by management between the presented alternatives must be seen as a (re-) confirmation of the hierarchical power invested in management to initiate action through decision. Nothing is added through the decision except action intent.

The next step is implementation of the plan implied by the matrix of co-ordinated activities that the decision contains. All the activities for the next period must be decided at the same time, otherwise we might be making non-optimal decisions. But they may not be started at the same time - better do sub assemblies of components before final assembly - and by the time any of the products in the portfolio reaches the market (wherever that is located) other actors (competitors, customers, legislators) may have changed their ways. It might happen that the market (if we can find it) is in disequilibrium. Our problem becomes a forecasting problem with the environment changing its behaviour on the basis of our changes. We are in a game where the rules of the game change when the participants learn how other actors apply those rules. The only way out of this dynamism is to assume that the other actors will behave in a certain way, measure outcomes, and adjust decisions in accordance with a "black box" analysis of what might have caused the deviation from our assumptions - in an eternal hunt for "the right decision".

We might, of course, add the assumption that our assumptions about the behaviour of the other actors were the correct ones - after all they were based on the best available evidence! - and demand better competence and discipline from organisational members. Then we can assert our will and gain market power. But if we made a mistake in our judgement of the capability of our own organisation to carry out our intentions, is it not likely that we have also made errors of judgement about the other actors, whose organisation we do not know as well?

The decision-making paradigm leaves us with a functional model of management accounting, which provides data to a decision model, which, in turn, produces "the right decision". Since the decision model is always correct (deduction) the data will control the decision. The

right data leads to the right decision. Wrong data (measurement error or lack of relevance) will generate the wrong decision.

Figure 1. Management accounting and decision making.

From MAS Decision-making Output

$$\text{Max } f = \Sigma \ a(i)x(i)$$

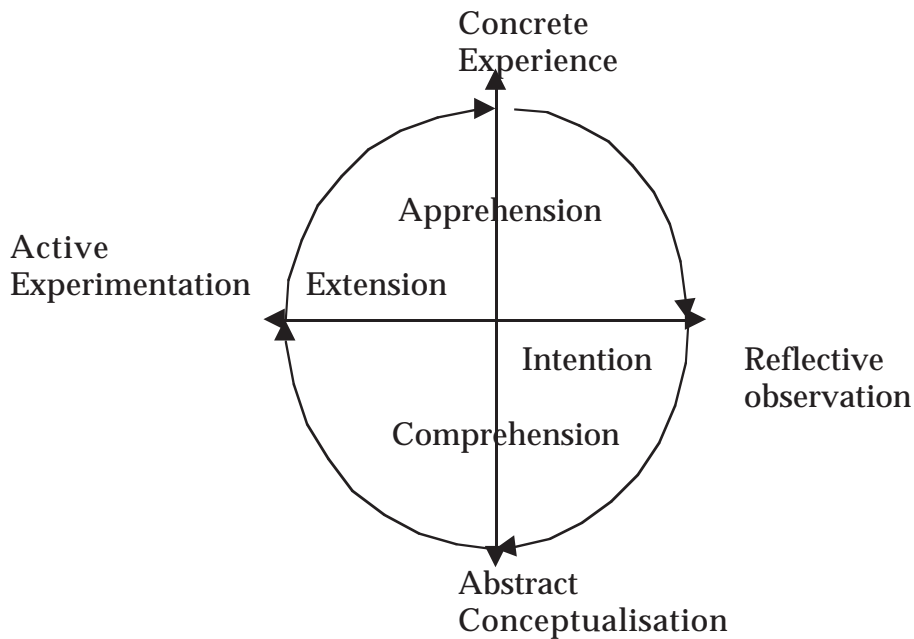DATA Subject to "The Right Decision"

$$x(i) < C(i)$$
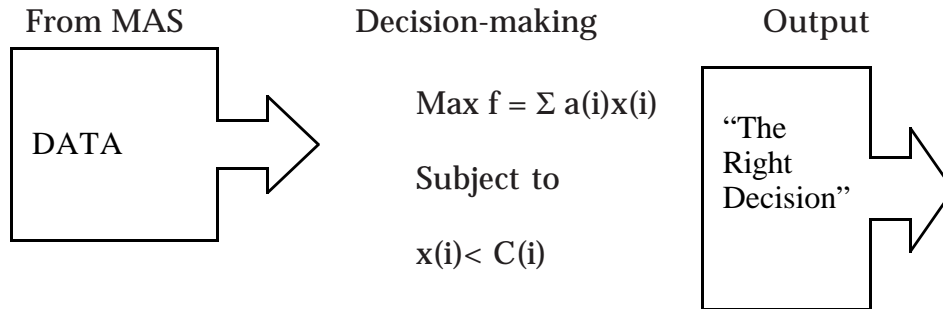
The problem with this approach is that the decision making mechanism cannot learn (it has to be replaced with another model if we are not satisfied). This is the ontological trap. It might be possible to find solutions in a stable environment where law-like behaviour could be expected and the tools of scientific inquiry could be applied (c.f. Popper 1968, 1979). In a dynamic environment where markets are not in equilibrium learning is the only option. This is a belief statement - a conjecture as it were.

The Action Approach.
If we want to include learning in our model, we have to include action since it is action, which causes change in the world, and we can reflect upon concrete experiences of the world. An excellent way of learning is to make an experiment and see what happens. We can test our hypotheses against outcomes if we carry out the action of the experiment (the decision to do an experiment is not enough). Kolb (1984) provides a theory of learning from experience which is intuitively appealing. The gist of his argument, it seems, is that learning is a cycle of concrete experience, reflection, conceptualisation, and active experimentation.

Figure 2. Kolb's (1984, p. 42) experiential learning.

Concrete
Experience

Apprehension

Active
Experimentation

Extension

Intention

Reflective
observation

Comprehension

Abstract
Conceptualisation

Kolb is firmly positioned in American pragmatism (James, Pierce, Dewey, Mead, for a critique see Diggins 1994) which could be characterised for our purposes as claiming 'if it works in your experience; if, after having been frustrated you are ready to act on the basis of this information, then it is true in a pragmatic sense'. There are two axles in the Kolb cycle; the apprehension-comprehension axle where comprehension represents conceptual interpretation and symbolic representation (the decision model is one). Apprehension is perceiving and recognising in a direct mode. Apprehension is a primitive form of learning, which includes imitation. The other axle is intention-extension. The intended object is the phenomenon we focus our attention on. What is that bulky thing moving behind the bushes? Is it a moose? My hunting partner will help me in my reflections. When I ask him: "Do you see the moose over there?" he will say "For God's sake don't shoot! It is Peterson!" and a mistaken classification can be avoided. Reflecting on this experience I might conceptualise something about my regular check-up at the optician's, or about the principle of shooting only when the whole of the moose is in clear sight. Next I can apply my new conception in active experimentation (I can make the social experiment of telling the gathering hunting team that I have learnt that a good way of avoiding shooting Peterson is to count the legs and see what happens. I can also keep quiet about the incident (hoping that the partner will be loyal) and test whether counting the number of legs before shooting applies to other situations as well.

It is a basic assumption upon which the argument in this paper is based that effective learning (meaning change in "Ways of working") requires whole cycles. This claim thus maintains that learning by imitation or by conversion in an act of faith (trusting your consultant) are not proper examples of learning since the change in ways of working which might follow is the result of experience with the first application (when the whole cycle is completed).

Action
Humans are well equipped to attribute meaning to acts; in fact it is the meaning that turns events into acts, because acts are caused by actors. There is an intent, and, consequently, responsibility. If the actor can give a reason (account) for the act and if the actor is following a rule (and thus will behave consistently in the future), then the act is meaningful or has a sense (Winch 1958, Wittgenstein 1953). The criteria thus are that the actor is seen as knowing what she or he is doing, and that the behaviour is principled. The account we give for our action must not necessarily be accurate but it should be recognisable as a reason. If our behaviour is embarrassing we may be excused if we say "Sorry, I was just playing around without paying attention". The second criterion would then be to show commitment to a better rule (be more attentive) for the future.

The most basic use of action is to determine who we are. The world around us will only tell us who we are as reaction to action. It provides a mirror where we can see ourselves (Arendt 1978). As humans we are torn between two urges; to establish our identity through action, and avoid disappointment. Trouble is that in seeking one we risk the other. Arendt (1978) points to two extreme strategies:
1) Try to dominate the environment in order to control reactions
2) Avoid action (join the crowd).

(Argyris (1982; Argyris et al 1985) may have identified a third strategy in pointing out undiscussability as a strategy. The claim of Argyris is in summary that "people cover up and they cover up that they cover up which makes some things undiscussable". This amounts to not participating in communication on managerial issues, at least not truthfully, and at least not in a co-operative mode. Rather it invites to a game inside an agency theory setting with moral hazard.)

Both strategies mentioned by Arendt are doomed, if we try to control the reaction of the environment we will get a distorted view of ourselves, and if we do not act we give up our identity. What is left is to choose Courage!, prepare to endure the slings and arrows and risk losing face.

This kind of reasoning is central to the establishment of a conception of action since our attribution of meaning to the acts of others also

includes evaluation of the person's competence and trustworthiness. If we are true to our identity or role the others can more easily behave rationally in relation to our expected behaviour, and communication is simplified (c.f. Jönsson 1998). (It is left to the reader to consider in what way the suggested strategies can be applied in research and specifically action research.)

Having thus established that identity formation (including team formation) is always present in action, at least as a by-product, we can state that action has intention and manifests itself in a change in the world, as we perceive it. Action is cause by an actor who is made visible through action. We make sense of action by attributing various relations to it, not least expected outcomes.

Action Research
When scientists "engage with participants in a collaborative process of critical inquiry into problems of social practice in a learning context". (Argyris et al 1985, p. 237) is the description of action research pursued here. Engagement, collaboration, critical inquiry, practice, and learning context provide a complex of criteria that may only be approximated in the individual project. A similar view is expressed in the Finnish "development inquiry approach" (Tamminen 1993, Pellinen 1997), where a stated requirement is to develop a solution to a practical problem which is implemented and then confirmed working by the partner from practice. Given such a strong success criterion it is obvious that ontological discovery must be a primary task. It is not enough to impose one's favourite theory and then blame inadequate adaptation to the requirements of the theory as cause of a failure. This is what was used to explain why Program Budgeting failed all over the world in spite of its rationalist structure. Wildavsky's (1975) conclusion when evaluating the experience of that top-down reform can be summarised: We have only one world and Program Budgeting has been applied in it. It did not work!

The orientation implied by the definition above is toward practice as the measuring rod. This means that the epistemological requirement is given (Does it work in practice?) while ontology has to be discovered. Usually research goes the other way, i.e., ontology is given (decision-makers are rational) and epistemological discovery is sought.

Action research, then, attempts to initiate learning cycles of Kolb's kind, where learning takes place as stated by Argyris et al. (1985, p. 52): "Act and reflect upon your action". The problem is to initiate "natural" learning processes. Natural should not be taken literally here because a first requirement is that there is recognition of a problem. In this sense the context of study is not natural, things are not as they were supposed to be. But the recognition of a problem, outcomes do not match

expectations, may be based in unrealistic expectations as well as unsatisfactory outcomes. In both cases an open-minded study of causes is in order. Experiments in a stricter sense are not possible and the substitute is to reflect on concrete experience. Such reflection, remember Weick's (1995) advice "Talk your walk" (p. 182), is better conducted in dialogue. Firstly because it provides a convenient way of eliminating error (Do you see what I see?), and secondly because the group is a good environment for learning in judgement tasks.

Moscovici and Doise (1994) have shown that groups when allowed time and freedom to arrive at a common judgement on a complex task tend toward extreme positions. This is called "group polarisation." If a group of people with prior opinions were supposed to arrive at a common judgement one would assume that some kind of compromise would be tried. Instead they tend to converge toward the extreme opinions in the group. Furthermore, if a format has been used, participants tend to stick to the new opinion in post-experiment debriefing. If, on the other hand, there are restrictions, like time limits or a set structure, the group will tend towards compromise and participants will return to their original opinions after the experiment (no learning). If these results are valid then it is advisable to try to emulate a free format for the collective decision on what is the problem. This calls for a "modest intervention"[1], i.e., when the researcher assumes a role which does not lead to restrictions on the group polarisation process which may inhibit learning. Should the researcher assume a "teaching" role, and thus impose a specific world view on the client, then the research should be described as consultancy and the results viewed as proof of the researcher's teaching ability. This could boost the self-confidence of the researcher, but not our knowledge of organisational learning.

This conception of action research also specifies the problem to be developed in the remainder of this paper: What can be considered "modest intervention"?

Modest intervention.
The purpose of a modest intervention is to help initiate a learning process (Kolb 1984) given that there is a preliminary conception of an organisational problem. The recognition of a problem is a necessary pre-condition for the interaction between researcher and organisational member to emerge at all. An organisational member on one level might start communication with the researcher on the premise that there is a problem on another organisational level, but it is still necessary for the researcher to agree with members of the focus organisational unit that there is a problem (even if it is still unspecified).

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[1] This term was offered by Peter Checkland as discussant of an earlier paper of mine (Jönsson 1990)

The starting point of an intervention can probably be any part of the Kolb cycle (Concrete experience, Reflective observation, Abstract conceptualisation, Active experimentation) and the joint task is to provide for a completion of the whole cycle which may require negotiation with surrounding organisational units. The modesty of the intervention lies in the fact that the cycle is under the control of organisational members. This does not preclude the researcher from making suggestions or presenting counter arguments. The ideal relation between researcher and organisational member is the one depicted by Habermas (1984). The parties should aim at reaching an understanding through the acceptance of better arguments. If the starting point is a concrete experience the two parties might engage in a sense making exercise (Do you see what I see?). Have observations been made the first thing might be to conceptualise this into a model. Is the model already there the discussion could be on how an experiment to test its validity could be designed (an approach recommended by Argyris (1982) to make undiscussable things discussable.)

Modest intervention, in order to be successful, probably requires a start in simple problems that have a fair chance of getting solved in a short time. Once successful cycles have been completed the team will be motivated to take on more challenging problems. Furthermore success will be recognised by the environment and the goodwill thus generated will improve the odds for success in later learning cycles.

Data collection
No stricter requirements in data collections apply to action research than to other approaches. If a survey is included it should be done according to the book. Interviews should be made professionally etc. What is specific to action research is the need to document the research process. This should be done through a diary with appended documents. It is what researchers do in other disciplines and it must be done in action research. A researcher in Molecular Biology will keep notes of the progress of her experiments in a bound note book with data counts on cell status (or whatever data are significant) appended so that the research process can be retraced (cf. the Baltimore case, Hull 1998). The same goes for action research. Even if this material is not reported in the papers that come out of the project the researcher must have this back-up information.

Reporting action research
The distinguishing features about action research are that it
1) Deals with a process and that time is a significant variable, and
2) That the causalities of the process are uncertain as a consequence of the ontological discovery purpose.
From this follows that the normal mode of reporting will be in narrative form. The only way of making the findings meaningful is by

telling a story in context, again because the purpose normally is ontological discovery. The alternative is to refer to a specific theory for definitions of variables and relations between variables, but this is often not a useful approach because the theory is built on given ontological assumptions and the discoveries of deviations from those assumptions are not permissible. The classical defence of economic theories against empirical observations have been and will continue to be the "ceteris paribus" clause. This means that the narrative appeal, the flow and dynamics of the story, will play a role for the success of the report. Following Bruner (1990), an early champion of the human information processing approach but now one of its sharpest critics, we can claim that there are two types of cognitive systems that give meaning to our experience; the paradigmatic, where the organising principle is conceptual, and the narrative where the organising principle is narrative. In the latter case it is the components of the story itself constitute the meaning, and the reader sees the point. In the former case the frame of reference in terms of the constellation of concepts give meaning to observations. In both cases the observer "works out" a meaning, even if the approach is different.

The typical action research results, reported in narrative form, are preparadigmatic by definition, either because the research area has not developed a paradigm (Kuhn 1964) yet, and this would be the case in management accounting studies, or because the results is challenging existing ontological beliefs. In both cases further studies testing hypotheses derived from the new findings are necessary before generalisations are appropriate. What may be claimed, however, is that a concept which is given meaning by the narrative may be applicable to other cases, and even generally applicable. In this sense a good action research report is perfectly compatible with the Popper (1968) view of conjectures and refutations as the structuring feature of scientific progress. One should not mix the two elements up.

Modest intervention in practice

In this section a number of narratives illustrating modest interventions that succeeded will be presented.

After studying, for 3 years, how teams in automated component production took command over their work Grönlund (Jönsson and Grönlund 1988) found that interest in financial information was temporary. Only when they had a problem did team members feel a need to look into and interpret such information. What happened was that a group member (usually the foreman) would alert the team to a problem? There would be a meeting in the machine group where it was agreed that this was the problem and in order to find a solution this information was needed. Then there would be a fact-finding period when data were collected and fed into the team's PC. When data

were collected they would be summarised (when applicable) in graphic form and a meeting would be called to discuss what action is appropriate. That meeting would allocate responsibility for action on the issue between team members and initiate action. After some time a cost report for the machine group would show that the desired improvement had occurred. Then the matter was closed and the new procedure confirmed.

In this case the learning cycle was initiated by the declaration: "We have a problem!" It was usually the leader of the group who directed the attention to a phenomenon, but sometimes a machine operator would point out that, e.g., this specific brand of cutting tool causes quality problems in the lathe operation. The operator would sound the alarm on the basis of concrete experiences; the foreman would locate problems from operating statistics and cost reports, by comparing to established norms. Most of the time no alarms were sounded and operations were run normally. Learning occurred in spurts of increased attention and would normally result in some change of a routine.

But there was also cascading problem discoveries. In the drive shaft line the initiating event was the statement "We are too high on cutting tools!" The first meeting focused on whether the standard was reasonable, and a counting exercise was started. How many drive shafts are processed before a tool has to be exchanged for quality reasons? This focus on tools led to the insight that the individual cutting tool costs money. Half empty boxes of cutting tools were found in all kinds of unlikely places and as a by-effect cost awareness improved, when members saw the benefits of using all cutting tools in the box. Furthermore a routine for checking cutting tools was established. Later on, when a representative of one of the cutting tool suppliers announced the arrival of the new wonder tool, the operators could run it in comparison with the other brands and decide that it kept what it promised. Even if it cost twice as much more than double the number of shafts could be processed before it went dull. The operators took the decision to shift to a better cutting tool (and the team had to see to it that the purchasing department got it right).

There were other learning cycles as well. When one of the teams had been recognised as a competent problem solving team they, increasingly, used relations with neighbouring departments in their pursuit of improvement. One example was the discovery that sloppy sand blasting, by the foundry, of the blanks for the brake drum line caused higher cutting tool costs. If the team could keep the foundry alert to the need to do proper sand blasting they could keep their own costs down and quality up. This latter approach, improving the context in which operations were run and as a consequence efficiency, by influencing the environment, constituted an expansion of the sphere of influence of the learning team. A further expansion appeared when

the foreman of the focus team was asked by the division head to design a one-day course in teambased cost management. By then the team was managing itself and the foreman could do the course design at home. If there were any trouble the team would call. This course was then given at least 25 times in different production plants around the company (by the foreman).

The modest intervention in this case was for the researchers to convince the division head that team based learning is an interesting approach, and the union that the benefits of improvement effects would be negotiated, and the team that this would be something that they could control. The team was provided with a PC with some standard software and the team got some training in how to use the computer and they were asked to go ahead with improvement work as they saw fit.

Another modest intervention (Jönsson and Solli 1993) was to have a two day training conference where 6 managers of the Social Services department were taught the basics of financial concepts, the structure of the municipal budget, and how one could design one's own financial reports. The conference ended with the participants designing their own reports to provide the information they needed with the layout they preferred. The researchers' purpose with the study was to see how the use of accounting information would be effected by the individually adapted design of reports. In order to collect data on the use of accounting information the 6 managers were visited upon the arrival of the monthly reports and a conversation on the economic situation was held where the starting question was "How are you doing?" (Financially). The challenge, it was thought, would be that these unit managers were the kind of professionals which are most unlikely to have much understanding for applying financial concepts to their work. It turned out that the respondents were concerned with definitions of their area of responsibility initially (Is this kind of cost really my responsibility?). About halfway through the year focus tended towards obstacles to rational management. (The municipality was this central purchasing contract which forces me to buy low quality at a high price, when I could get what I needed cheaper if I only....!). The researcher could take the message to the top of the hierarchy and a decision to exempt units from the central contract demonstrated support for rational management. Towards the end of the research period the managers tended to talk about possible projects to improve operations. "What-if" –reasoning with the researcher as a friendly listener allowed the respondent to articulate half-baked ideas and get some feed back. All 6 units had better efficiency development than comparable units. Maybe the most interesting aspect of this action research study was that the participants valued the talks higher than conceptual training and individualised cost reports. This author started to play with the thought that economic judgement is a kind of

reasoning (constructing projects), preferably in conversation with others, rather than taking the shortest route to a decision (cf. the Dewey quotation on p. 1).

In a series of action research studies (Jönsson 1996, chapt. 9) conducted during recent years we have used video sequences as, possibly not so modest, interventions to stimulate reflection in teams. Regular meetings of project teams or management groups have been videofilmed. From the original tape sequences of one or two minutes were edited onto a second tape, which was then used as input stimulus in interviews. For each sequence shown individually to each participant in the team the question was asked, "What is going on here?" and the response was audiotaped and transcribed. For each sequence there would thus be 15 understandings in a team of 15. From the beginning the research team was amazed by the frequency of misunderstandings in serious management meetings. It has been possible to study in detail how misunderstanding or personal conflict emerge in multi-person meetings. The strength of the videofilm as stimulus to reflection lies in its ability to focus attention. Numerous respondents have said that they see more in the video feedback then they do in the meeting itself. This seems to initiate a need to give complete backgrounds to the event on the screen, which in turn gives multi-facetted contexts to the event.

Methodological criticism has been given which claims that participants will not behave normally in front of a video camera. We have found this not to be the case for the following reasons (beside our own observations): Participants are in a real management situation working with competent colleagues. It is not possible to behave outside the ordinary role because there is a camera and maintain the respect of colleagues. Also the participants act in front of scrutinising audiences all the time and the purpose is then as well as in the study to get confirmation that a certain activity should be undertaken, an activity which will influence real outcomes for the organisation. Individual participants as well as teams have expressed satisfaction with the improvement in work climate which have come from reflecting on concrete communication situations without an outsider (the researcher) pretending to know better.

These are some examples of what could be meant by applying modest intervention. They seem to add up to the point that modest intervention means not to impose some theoretical construction on the organisation, but instead to use theory to explain the phenomena, (which is the most worthy cause of scientific inquiry).

Summary and conclusion

This paper argues that action research is a useful approach when the purpose is ontological discovery and explanation of management

control phenomena. The starting point, in the ontological perspective, is that action research deals with action (not the making of the right decision) because it is action that changes the world. The actor in focus learns from experience. Hence Kolb's model of experiential learning.

A research problem then is how to initiate learning processes that can be observed. It is suggested that modest intervention is a preferred way to get "natural" processes started. (We do not want to study the impetus of the researcher as consultant on organisational change.) Modest intervention seeks to focus attention on a problem of the actor's choice and help get first action started. This can be achieved by providing some new tools, like a computer at the disposal of the team, or a conversation partner.

As far as the scientific status of action research is concerned the same criteria for data collection apply as in other kinds of research. No action researcher would claim general applicability of conclusions. Therefore it is beside the point to criticise action research because it does not produce general or universal truths. It does not and it does not pretend to. What it attempts is ontological discovery and explanation of observed phenomena. In order to secure reliability and traceability of the findings it is suggested that there should be a firm requirement of action research that the researcher keeps a detailed research diary so that the project events can be traced. This same requirement is operational in laboratory research in the biological sciences. The diary should be bound and kept chronologically (same as invoices are recorded in the book of first entry journal in accounting.

Modest interventions can be introduced at different points of the Kolb cycle (concrete experience – active experimentation), but an important aspect of action research with an organisational learning perspective is that a complete cycle should be observed. Usually this will give a documentation that is rich on dimensions and allows the application of multiple theoretical perspectives in analysis. Therefore the action research report should be expected to contain a narrative giving an overview of the process that was studied, and a justified choice of theoretical perspective to be applied in the analysis.

Since ontological discovery and careful observation are the core characteristics action research will tend to a critical view, critical towards established theory and conventional wisdom. If successful companies do things that are at odds with what textbooks proclaim to be the right thing to do, then action research will tend to claim that the textbook author has a problem. It is easy to agree that action research is best enjoyed in moderate doses, because it needs to be complemented with tests of wider applicability of its discoveries.

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