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Rethinking Current Conceptualisations of Action Research

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Abstract
Information Systems (IS) researchers are increasingly encouraged to adopt qualitative research approaches, including action research. While action research offers much in terms of addressing the practical concerns of an applied discipline such as IS, there are concerns voiced about the rigour and validity of the findings of action research studies. In this paper, an argument is developed that suggests that a reconceptualisation of action research is warranted in order to enhance the quality, credibility, and academic respectability of its findings. Further, this reconceptualisation serves to add a touch of realism to the sometimes simplistic models of the action research process that are presented in the literature. Specifically, a view of action research is presented that facilitates a clear understanding of the difference between the research interest and the problem solving interest of this research method. This model guides action researchers in promoting the rigour of their research endeavours without detracting from the relevance that stems from the contextual, real world nature of action research.

Keywords: Action research, information systems research methods, qualitative research

1. Introduction

There are many models of action research available. For the purposes of this paper, we rely on the "6" model of action research (Burns, 1994), captured below in Figure 1.

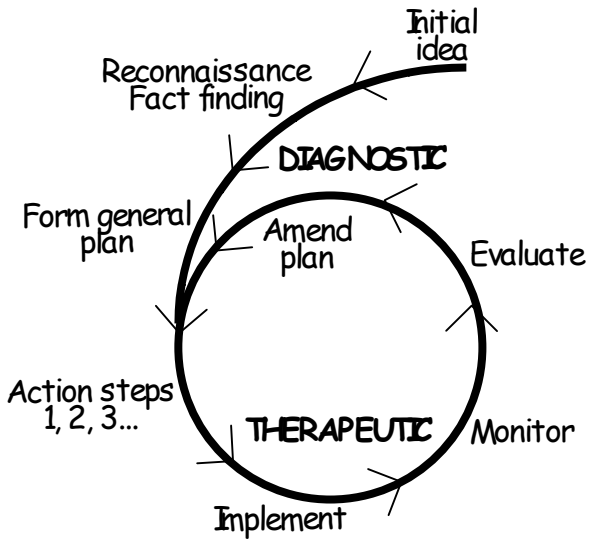

Figure 1. The "6" Model of Action Research (Burns 1994)

The model suggests two broad phases in action research, a diagnostic, fact finding phase, and a therapeutic or remediating phase. The process embraced by this model essentially involves

fact finding, planning and taking action, followed by monitoring and evaluating that action, with iterations of this process until satisfactory outcomes are achieved.

The very essence of action research is encapsulated within its name: it represents a juxtaposition of action and research, or in other words, of practice and theory. Thus, as an approach to research, action research is committed to the production of new knowledge through the seeking of solutions or improvements to "real life" practical problem situations (Elden and Chisholm, 1993; Shanks et al., 1993). However, it is more than just another approach to problem solving, for the action researcher is working from within a conceptual framework (Checkland, 1991; Baskerville and Wood-Harper, 1996) and actions taken to ameliorate a situation perceived as problematic should form part of and stem from strategies for developing, testing and refining theories about aspects of the particular problem context (Avison, 1993; Susman and Evered, 1978).

One distinguishing feature of action research is, therefore, the active and deliberate self-involvement of the researcher in the context of his/her investigation. Unlike the methods of objectivist science where the researcher is argued to be an impartial spectator on the research context (Chalmers, 1982), the action researcher is viewed as a key participant in the research process, working collaboratively with other concerned and/or affected actors to bring about change in the problem context (Checkland, 1991; Hult and Lennung, 1980). Collaboration between researcher and what may be described as the "problem owner" is essential to the success of the action research process. A mutual dependence exists in that both researcher and problem owner are reliant on the other's skill, experiences, and competencies in order for the research process to achieve its dual aim of practical problem solving and the generation of new knowledge and understanding (Hult and Lennung 1980).

Underlying the action research process, therefore, is a rejection of many tenets of more traditional approaches to research which are embodied in the scientific method. The methods of natural science are viewed as both problematic and indeed, inappropriate, when applied in "human" disciplines such as IS, for intelligent human agents can (and tend to) take action which can effect both the phenomena under study and the outcomes of the research (Checkland, 1991).

Given the above considerations, a fulsome (albeit cumbersome) definition of action research is offered by Hult and Lennung (1980) who write that:

> *"Action research simultaneously assists in practical problem-solving and expands scientific knowledge, as well as enhances the competencies of the respective actors, being performed collaboratively in an immediate situation using data feedback in a cyclical process aiming at an increased understanding of a given social situation, primarily applicable for the understanding of change processes in social systems and undertaken within a mutually acceptable ethical framework."*

Within IS therefore, action research offers many positive features thus rendering it a powerful tool for researchers who are interested in finding out about the interplay between humans, technology, information and socio-cultural contexts. For example, unlike other research approaches, such as laboratory experiments, which struggle to maintain relevance to the real world, the "laboratory" of action research *is* the real world, thus avoiding the potential separation of research and practice (Baskerville and Wood-Harper, 1992; Susman and Evered, 1978; Avison and Wood-Harper, 1991). The dual aim of action research, being both

a mechanism for practical problem solving and for generating and testing theory provides a win-win scenario for both researcher and participants in an action research study (Elden and Chisholm, 1993). In addition, action research is viewed as a means for enhancing the skills and competencies of both the researcher and the participants (Hult and Lennung, 1980).

Nonetheless, action research is not without its weaknesses as a research approach, nor is it without its critics. Arguments are expressed, for example, which suggest that action research may be regarded as being little more than consultancy (Avison, 1993). When interventions are deemed successful, some would argue that causal connections and explanations cannot be safely made (Baskerville and Wood-Harper, 1992). Researchers are questioned over a perceived lack of impartiality and bias (Avison and Wood-Harper, 1991). The supposed lack of scientific rigour and discipline in action research, the lack of validity of data (Baskerville and Wood-Harper, 1996), and the difficulty of generalising results from action research studies have lead to it falling into disfavour in some academic circles, and in action researchers finding it difficult to attract research funds (Avison and Wood-Harper, 1991).

2. Action Research in Practice

The action research project which will be used as the basis of discussions in this paper involved an information requirements determination (IRD) problem at the local Port Authority. As researchers, we were interested in the effectiveness of using the Strategic Options Development and Analysis (SODA) approach (Eden, 1989), together with its associated technique cognitive mapping (Eden, 1988), to support and facilitate the IRD process. The problem centered on the Workers' Compensation Systems (WCS) which was the subject of many complaints from users. Although the WCS basically supported the process of administering the payment of workers' compensation, there were known faults with the system: some of the functionality simply did not work (and indeed, had never worked as intended), some of the computations and outputs of the WCS were known to be erroneous, and users felt that the system was not able to satisfy their needs for specific information. The users were highly supportive of the idea of revisiting their information requirements prior to redeveloping the system, as they were keen to *"iron out the bugs",* and they also appeared supportive of our research objectives. It was thus agreed that we would work with the three users concerned with the WCS to ascertain their requirements for the new WCS. It was also understood by users that we would be adopting a particular approach to IRD (Cognitive Mapping within the SODA method), necessitating their involvement in individual interviews and group workshops, and they expressed a willingness to participate, although some concerns were voiced about the commitment of their time that we would require. We assured them that we would do whatever we could to minimise the time taken, and that we were sensitive to their work pressures. It was also made clear to them that we would need to make audiotape recordings of most of our sessions together. Thus, the scope of our involvement (to support and IRD for their new WCS), the process that was to be followed (SODA and cognitive mapping), our research interests and requirements, and our reporting responsibilities (to the Occupational Health and Safety Officer) had been identified, clarified and agreed upon by all parties, establishing an agreeable ethical framework within which to operate.

One of the major outcomes of this study revealed that the "real" problem was not actually the WCS: cognitive mapping work with the participants involved in the study revealed that they felt much more concern about issues associated with safety management. This ultimately lead to a recognition of a need for a Safety Management Systems (SMS) to help overcome

some of their concerns. This provides the required backdrop for readers: for the purposes of this paper, however, it is planned to focus not on the content nor outcomes of the study, but on the process of this research (action research).

Involvement in this study quickly revealed to us the delightful simplicity of this model of action research. This deceptively simple articulation of a simple, cyclical process consisting of fact-finding and reconnaissance, forming an action research plan, implementing that action, monitoring, evaluating, and then, depending on the evaluation, either exiting or amending the plan, re-implementing, and so on, did not completely reflect our behaviours nor our perceptions of the process of the intervention. Real-life proved to be much more complex than depicted by this model. Perhaps this is not really surprising, as by definition, models are representations and/or abstractions of perceptions of reality, and thus would necessarily simplify the real world. But we felt that this model could be amended, without becoming overly complex, and thus provide better guidance for the action researcher. Before discussing and drawing of these amendments, the concept of a cycle in action research needs to be discussed.

Our reading of the action research literature suggests that common to all discussions of action research is its cyclical or iterative nature. But what actually constitutes one cycle, and how does the action researcher know when a cycle has been completed? Looking at figure 1, one might be tempted to triumphantly say that a cycle is complete when evaluation is complete, and a decision taken as to whether satisfactory outcomes have been achieved (and hence the action researcher can exit from a situation) or whether additional action is warranted. So in the case documented in this paper, we could assert that the cycle involved taking action (interviews, mapping, discussion at revision of maps) leading to the realisation that the expressed problem was not the major underlying issue experienced by the participants, and at this point, we entered into the process of reflection and evaluation of this process. Figure 2 below tries to capture this.

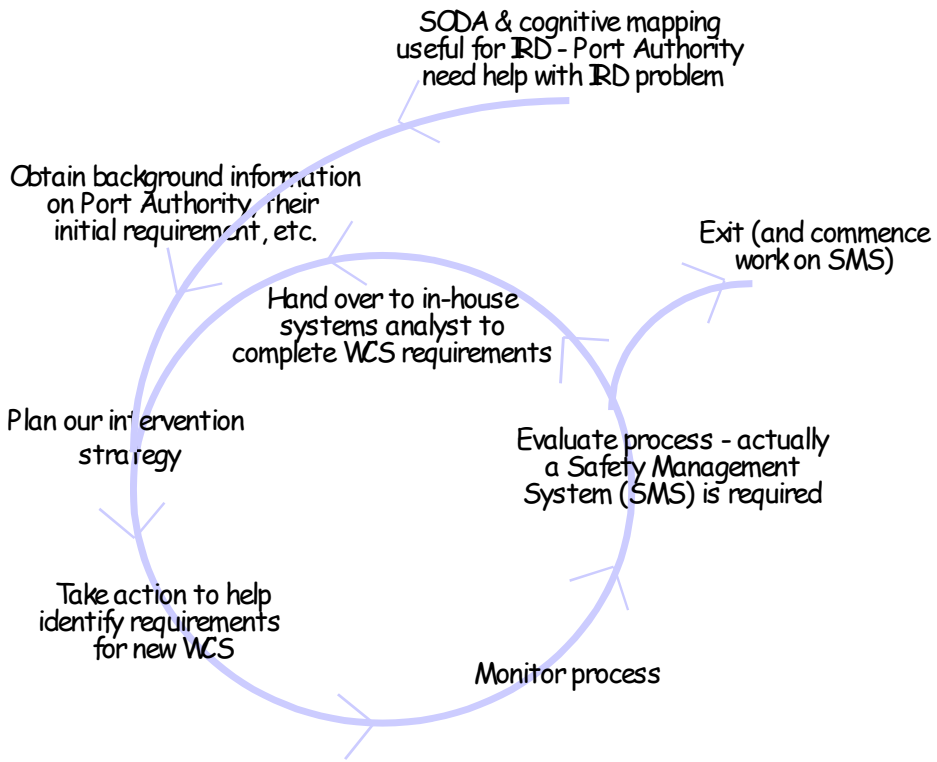

Figure 2. An Overview of the Action Research Cycle at the Port Authority

Figure 2 does provide a high-level view of what took place, but simply fails to capture the reality or essence of what we were actually doing. An inexperienced researcher looking at this diagram would be left with a quite unrealistic view of the action research intervention. For to us, it seemed as though we were **constantly** monitoring, reflecting and evaluating what we were doing, the progress we were making, the issues we were facing, and so on. Thus, there were "mini-cycles" within the cycle, which were significant, we believe, in that they altered the course we took, and must therefore have had some impact on the final outcome. Let us attempt to illustrate this idea in Figure 3

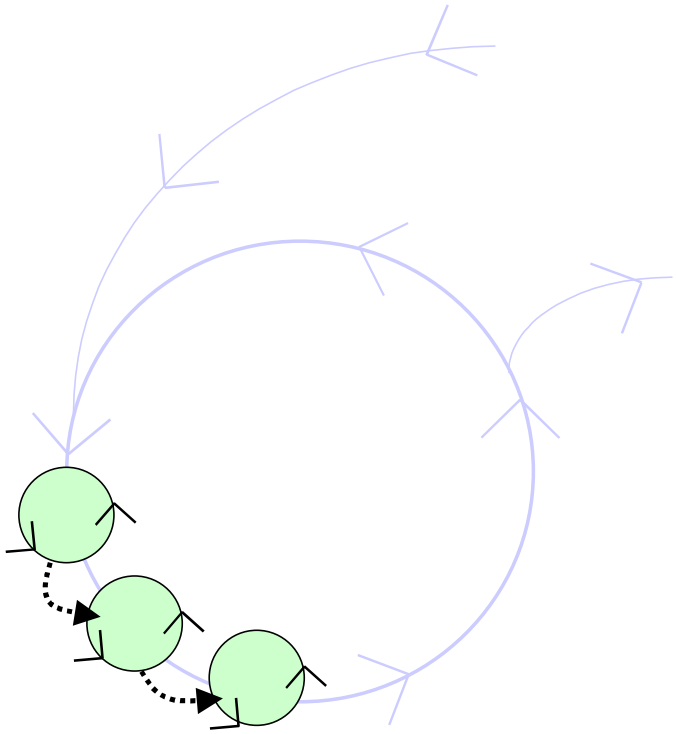

Figure 3. The Constant Iterative Nature of Action Research

Space constraints do not allow for a full discussion of these mini-cycles, but readers will recall that we had planned to audiotape meetings and discussions. However, we felt that these tapes in fact become an impediment to cognitive mapping, and thus made a decision to abandon the taping. What was the process involved here? We would argue that we were going through a mini cycle, captured below in figure 4.

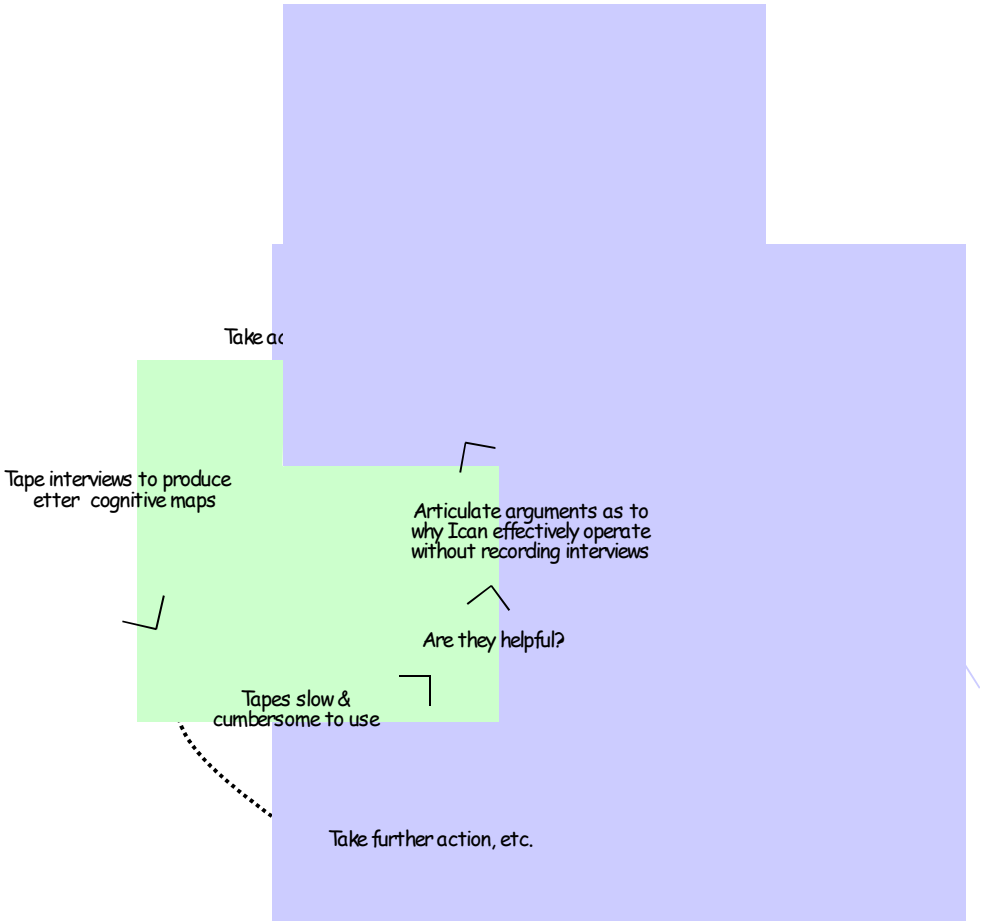

Figure 4. An Example of a Mini-Cycle within the Action Research Process

Likewise, we noticed that throughout the action research intervention, we went through a nearly continual process of doing, reflecting, evaluating, modifying, and so on, and thus our conviction that Figure 3 provides a more accurate reflection of the process that we went through in undertaking this action research project than Figure 1. We acknowledge that the number and frequency of these mini-cycles may well be contextually determined. To some extent, it may also be a function of the cognitive style of the action researcher. But our strong conviction is that the practice of action research may well improve if the models we use to talk about this approach avoid oversimplification of complex and subtle behaviours and interactions that typify action research.

3. Rethinking Action Research

The cyclical, or iterative nature of action research is thus preserved, and we would argue that there is an almost continuous process of doing, reflecting, evaluating, modifying / correcting / re-doing, etc., taking place which we have called "mini-cycles", and which in a sense, must be mapped over the top of the overarching cycle of action research being undertaken. But our experience suggests that something more complex must also be acknowledged. In our earlier characterization of action research in this paper, a duality, a juxtaposition of theory and practice, of action and research was identified. So as researchers, we had a practical, action-taking responsibility to help our clients ameliorate their perceived problem situation, but we also had a theoretical, research interest in the IRD process at the Port Authority. Part of the task of the action researcher is thus to manage this duality. So, conceptually at the very

least, there appears to be two action research cycles, one overlaid on the other, and operating in tandem with one another. The first cycle relates to the researcher's problem solving interests and responsibilities, the second to the researcher's research interests and responsibilities. These ideas require further explication.

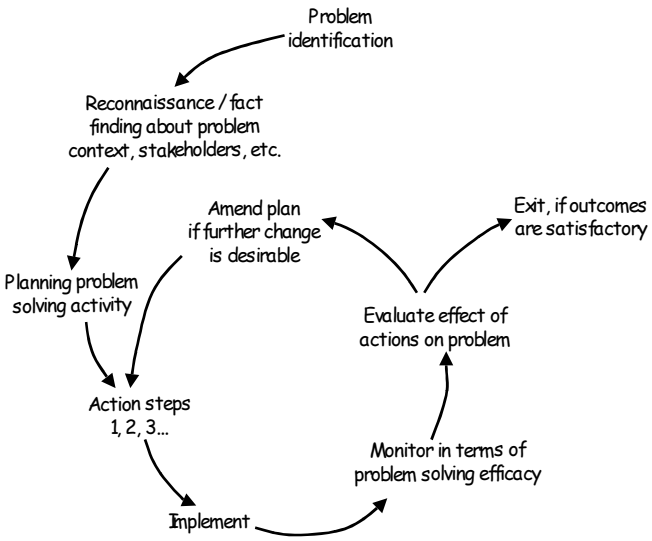

Figure 5. The Problem Solving Interest in Action Research

Figure 5 is a representation of the researcher's problem solving interest. An action researcher must become aware of a real-world problem, one that provides scope for the elucidation of research themes or ideas. Following initial identification, there then follows a reconnaissance and fact finding activity, where the action researcher endeavours to find out more about the nature of the problem and the problem context, who the problem owners are, key stakeholders in the problem solving process, historical, cultural and political components of relevance, and so on. Thus armed, the action researcher, maybe in collaboration with participants in the process, plans a problem solving strategy, and the proceeds to implement a number of action steps. These steps may or may not be guided or informed by a particular problem solving approach (such as Soft Systems Methodology (Checkland 1981) or Multiview (Wood-Harper et al. 1985), or the like). These actions are monitored and evaluated for their impact on the perceived problem situation. At such time as satisfactory outcomes are deemed to have been reached by the stakeholders to this problem context, the researcher exits from the situation, or alternatively, amends the action plan and makes additional changes to the problem context, thus embarking on another action research cycle.

However, there is a second cycle, which we argue is built upon the research interest and responsibilities inherent in action research.

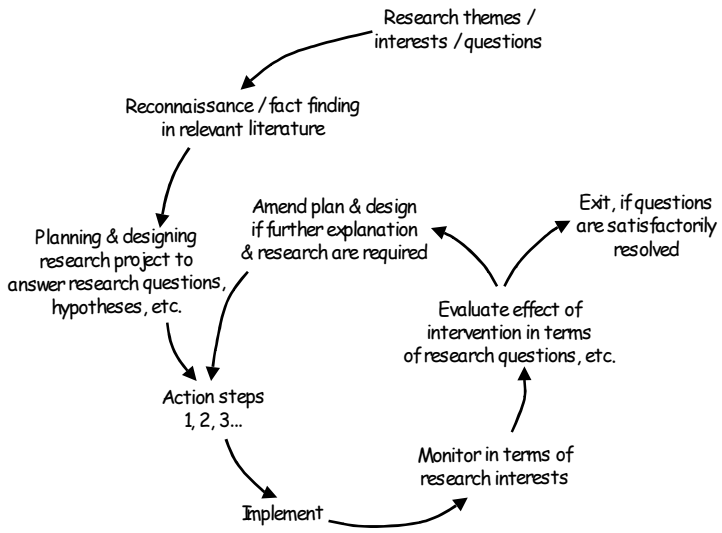

Figure 6. The Research Interest in Action Research

In Figure 6, we have attempted to depict the research interest cycle in action research. In this case, the researcher has a particular idea, or objectives or research questions of interest which he/she wishes to pursue. Having identified some initial area of interest, the researcher will engage the relevant literature, clarifying issues and identifying existing theoretical frameworks of relevance. A theoretical framework from which to investigate the research interest will be adopted. From there, the researcher plans and designs a research project with the express purpose of enabling him/her to find answers to research questions, themes or objectives, and so on. Action is taken, the researcher remaining cognisant of his/her particular theoretical perspective. These actions are monitored in terms of research interests, and evaluated for the effect the intervention has had in terms of the research questions. If the research questions can be answered or satisfactorily resolved, the researcher exits from the organisational setting. Otherwise, the researcher will amend his/her plans and designs to seek further explanations. Another action research cycle is thus embarked upon.

We would assert that action research is more helpfully viewed and thought about as consisting of these two cycles, which can be superimposed upon each other. Figure 7 is our attempt to capture this concept.

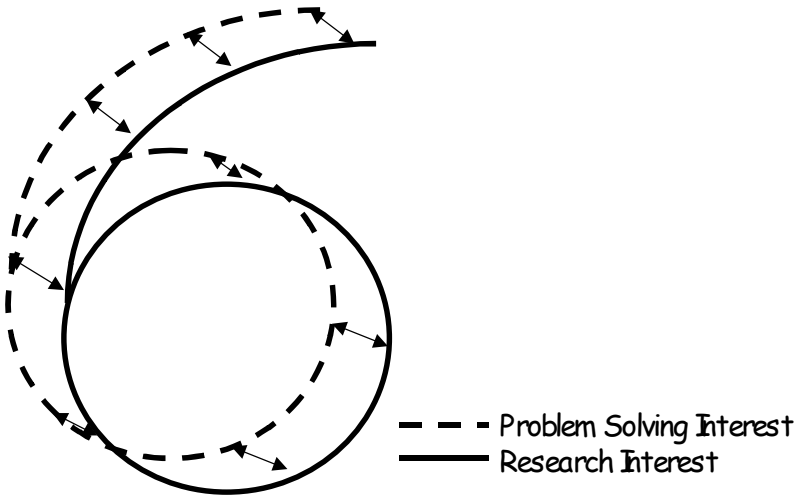

Figure 7. Action Research Viewed as a Dual Cycle Process

What we are asserting and trying to emphasise here is a view that action researchers need to think and act more deeply and more reflectively than the action research models captured in Figure 1 would suggest. We think that researchers need to think about their problem solving interest in action research, and also about their research interest. By doing so, we believe much greater clarity will ensue for both researcher and consumers of the research output.

However, our notion of the mini-cycle adds some richness, some complexity, and some cognitive and behavioural reality to the description of the action research process. It indicates the need to balance and manage our clients' needs in terms of problem solving, and our own needs in terms of research. It also, we feel, clearly illustrates the need to act as problem solver **and** researcher in very dynamic circumstances whereby we were constantly doing, thinking, evaluating, and so on, or in other words, working through mini-cycles that could have to do essentially with research issues (Should I go on taping these sessions?), or essentially with problem solving (Are the problems they are experiencing with the WCS the source of their main concern?).

If we accept the dual cycles of action research, then there are a number of important considerations which follow.

First of all, adoption of this dual cycle view in both our thinking and practice of action research dispels the criticism that action research is just like consultancy. We would suggest that consultancy is not dissimilar to the problem solving interest in action research (see Figure 5). Action research which is deemed to be just like consultancy may be found to be lacking in its attention to the research interest cycle. However, if we explicitly add and clearly acknowledge the research interest of action research, then action research is obviously not the same as consultancy, and the research interest cycle offers a mechanism for action researchers to clearly differentiate their activities from those of consultants. Furthermore, we would assert that thinking about action research as though it were composed of two cycles make it a lot easier for the action researcher, particularly the less experienced researcher, to ensure that they are doing research, and are not inadvertently trying to masquerade consultancy or problem solving as research.

Secondly, another important element of action research is the learning that ensues from the researcher reflecting on the accumulating experiences of the intervention. Reflection can, indeed should, take place on a number of dimensions. Checkland (1991) offers the dimensions of F, the conceptual or theoretical framework guiding the intervention, M, the method used to formulate and guide the intervention, and A, the area of interest. Incumbent upon action researchers is to reflect on F, M and A, and to document any learning that has taken place. But care must be taken to maintain clarity of thought at this point because potentially, two As and two Ms are present in any action research intervention.

What do we mean by area of interest (A)? Is this the area of interest to us, from our perspective as researchers, or is it the area of interest in terms of our role as problem solvers? Let us identify the first of these as A (our research interest), and the second as P (the problem situation). In the case of our research, the A had to do with issues and challenges in effectively determining the information requirements in organisations (using a particular approach), and our reflection on the action research cycle needed to elucidate the learning that had taken place about the IRD process. By contrast, the P in this case had to do with solving or ameliorating the perceived shortcomings of the WCS at the Port Authority. At the

end of the action research intervention, we would assert that learning would be expected to have occurred about both P and A.

A similar argument can be mounted in terms of M. As a result of our intervention, we would expect to have learned about the method adopted for solving the problem, in this case, about SODA and cognitive mapping. But in addition, this paper itself is evidence of learning taking place about action research, the research method. Let us distinguish these Ms by calling the first M_{PS} (Problem Solving Method) and the second M_R (Research Method).

Reconceptualising action research in this way demands an extension on Checkland's (1991) dimensions from learning based on F, M and A, to F, M_R, M_{PS}, A, and P. If we revisit the scenario of our research project, then the following elements of our action research intervention all offer opportunities to learn.

Table 1. Elements of an Action Research Intervention

F	=	Cognitive Mapping and SODA have characteristics that would render them effective for application to IRD
M_R	=	Action research
M_{PS}	=	SODA and Cognitive Mapping
A	=	Issues and challenges in effectively determining information requirements in organisations
P	=	Identifying information requirements for a new WVCS at the government agency

Our argument says that adequate design of the research interest cycle would enable new knowledge to be generated about A, and most likely F. Reflection on F, A, and M_R, will also generate new insights, modify existing questions, or raise new questions. But through the problem solving interest cycle, through intervening and acting in a real-world context, then we would assert that experiential learning about P and M_{PS} may well have taken place. Whether or not such experiential learning should take the status of new knowledge generated by rigorous research activity is debatable: our own predilection is that it probably should not. But in our view, it still constitutes a meaningful outcome of the research, and it most certainly could, indeed should, form the basis of a subsequent research effort.

A final consideration has to do with issues of quality and rigour in action research. Critics of action research at times assert that as a research approach, it lacks rigour an discipline (Baskerville and Wood-Harper, 1996), while its proponents are quick to point out the direct practical significance of action research outcomes and findings. Hence a tension develops between rigour and relevance. The enthusiasm with which IS researchers have been exhorted to accept action research as a suitable approach (West et al., 1995) implies that it makes an important contribution ot the relevance side of the debate. However, in recent times, concerns have emerged about the practice of action research (Stowell et al., 1997; Lau, 1997; McKay and Marshall, 1999), which must lead to some questions being raised about the rigour of action research as currently conducted in the discipline of IS.

The reconceptualisation of action research as discussed in this paper helps in this regard. The relevance of action research stems from its "real-world" practical problem solving, leading to

relevant, meaningful outcomes in an applied discipline such as IS. This aspect of action research relates thus to our problem solving interest earlier identified, and it is this dimension, we believe, that has been given most attention in the action research literature. But if the rigour of our action research interventions is sometimes questionable (McKay and Marshall, 1999), then this is very much an issue concerning our research interest cycle. Questions could thus be raised as to whether sufficient attention is paid to matters of the design and conduct of the research, or whether these get overlooked in attending to the complexities and dynamics of real world problem solving.

The dual cycle view of action research does not eliminate these concerns completely, but it does serve to bring to the attention of researchers important issues of research design and conduct. For example, it challenges researchers to state research themes, interests or question up front, and to thus make decisions and plans about data collection and analysis in order to reveal answers to those research questions or themes. In the action research project that we undertook, thinking of a research interest cycle enabled us to constantly re-evaluate our research questions, to consider whether we were gathering the appropriate data and whether we were analysing that data in a way that would enable us to gain useful insights into those research questions. This activity had to take place in a somewhat separate conceptual space to that where we were dealing with the hurly burly of personalities, politics, and problems in the real world. Arguably this conceptual separation improved the quality and rigour of the research component of our action research study.

4. Conclusion

In this paper, we have presented a reconceptualisation of action research as it is usually presented to IS audiences. We argue that action research needs to be thought of firstly, as being composed of two distinct but interconnected cycles, the problem solving interest cycle and the research interest cycle, in order to clarify the process for IS researchers. The dual cycle view enables researchers to draw a clear distinction between research and problem solving or consultancy, it supports greater reflection and learning about more facets of the entire process and richness that is action research, and it helps to promote rigorous research without subtracting or detracting from the relevance of the research undertaking. Furthermore, by overlaying the overarching process with mini-cycles, a yet more rich, and more realistic concept and description is obtained, and thus, the emergent, dynamic nature of action research is revealed.

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