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*Learning by Doing Organization
Research: Inside Views from a
Dutch Nephew*

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Learning by Doing Organization Research: Inside Views from a Dutch Nephew

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SUMMARY

The development of organization science is not without concern when it comes to the richness, rigor and relevance of the knowledge production of the discipline. The inner critics of this discipline make frequent calls for better theory, better methods and higher usefulness of the research. This paper suggests that the key to improvement can be found in a more intensive and systematic reflection of the research work itself, and proposes an approach that is not unfamiliar within organization theory: *learning by doing*. The challenge is to make learning a collective process with an empirical base which goes beyond the accidental inside views and professional anecdotes. This requires the development of a process theory of doing organization research, and this paper attempts to make a step into that direction. The presented improvised framework focuses on three aspects (1) the context (relevant actors), (2) content (theoretical views on doing research), and (3) the research process (sequence of actions). The research strategies are described using six metaphors. The paper is largely grounded on the experiences gathered in the studies on innovation in firms carried out at MERIT throughout the last 15 years, and upon earlier experiences within Philips.

Organization science can be expected to have reached a certain level of maturity since the days of Weber, Taylor and Fayol. Maturity is urgently needed today, because the field studied by organization scientists seems to be more dynamic than ever. Not only do they face new phenomena, but an entirely New (virtual) World is urged upon them - a New World with new challenges and new problems. Besides, an increasing number of people are relying on organization knowledge while preparing for organizing and management roles within organizations. However, the accumulation of knowledge within the organization discipline is not without problems. Three problem areas can be distinguished in the academic literature of the last decade: those connected with the quality of theory (Sutton & Staw 1995, Eisenhardt 1989, Weick 1995), of research design (Grunow 1995, Scandura & Williams 2000), and those related to relevance and usefulness (Daft & Lewin 1993, Lawler et al. 1985, 1999). These authors do not use euphemistic language, but strong words to expose "lazy theorizing" and "half-baked pretensions to theory" (Weick 1995, p. 385), "serious consequences of sacrificing rigor for relevance..." (Scandura & Williams, p. 1259), and "the danger of becoming isolated and irrelevant" (Daft & Lewin 1993, p. i). We leave aside whether the situation in organization science is more serious than in other fields of social inquiry, nor will we question whether the samples of research analyzed by these authors can be considered representative of organization science as a whole. The three distinguished problem areas represent the basic concerns of any self-critical discipline, and the critics quoted above make clear that a lot of work has to be done to reach the right level of maturity.

One may ask whether clear rules and strong words are sufficient to change the tide. The perspective in this paper is that the development of organization research is a matter of learning, basically of learning by doing, or in other words (Daft 1983, p. 539): organizational research is a craft, which has to be learned. Improving that craft means that researchers of the discipline do not only talk and write about the end products they deliver, but also tell stories about what happened during the process leading to final publication. This underlines the importance of “inside views” (Bryman, 1988, p.1), “confessional tales” (Barley 1990, p. 230), “chronicles” (Hammond 1964, p. 3) or the more descriptive accounts of specific projects (cf. Van de Ven & Poole 1991, Leonard Barton 1990), which enable us to:

- understand the actual research process from beginning to end, and the interconnections of actions (Pettigrew 1990);
- understand the context of the project (Bryman 1988);
- compare the cook book prescriptions of the methods text books with the quiriness and messiness organization researchers experience in practice (Bryman 1988);
- learn from failures and successes (Grunow 1995).

The first call for “inside views” in social research dates back to the early 1960s, when Phillip Hammond (1964) invited researchers like Peter Blau, Melville Dalton and Seymour Lipset to write the “chronicle” of their crucial work to enrich the understanding of social research for a larger audience. These chronicles were bundled in the book “Sociologists at Work”. More recently, Bryman (1988) followed the same procedure by inviting well-known British organization researchers to describe their learnings from “Doing Organization Research”. Both frequently cited books are strong encouragements for reporting the inside view. However, despite the fascination that radiates from these books, it must be concluded that the “inside view” has failed to become a regular item on the research agenda (cf. Bryman 1988). Publications are still scarce. Besides, accumulation of knowledge is not only a matter of quantities – it also requires a new quality: a process theory of doing research. Without it, there is the risk of being stuck in anecdotal evidence (Dingwall 1980). The present paper is meant as an early step in *theorizing* (cf. Weick 1995) about organization research in practice. The paper raises three issues. First, it explains how the process-oriented approach can improve the quality of theory and methods and the usefulness of organization research. Second, attention is given to the context in which the study is performed and to the role of relevant actors. Five different ways of looking at the actual research process are described in the third section. These metaphors are used to theorize beyond both concrete prescriptions from the textbooks and the abstract interpretations from epistemological literature. The last part, focusing on the research process and the sequence of the actual research steps, shows how studies often take quite other courses than formal models in textbooks suggest. The paper is meant to be relevant to academic and applied research alike, and presents suggestions for practices of the research community. The organization research programme of MERIT and earlier experiences of the author as an internal researcher within the Philips organization in the Netherlands have been the main sources of practical experience on which the presented views are grounded. The reference list reflects the sources of inspiration during a long research career.

Towards a Process Theory of Doing Research

Organizational research is concerned with organizations and takes place to a large extent within organizations. This implies that organizational researchers are largely dependent on organizations. As a rule, they must go out into the field to collect data, because they usually don't have free access to pre-stored secondary data that can be called up by a simple command sitting in front of a screen. Unlike econometric researchers, they have to go and get the data themselves. Well-elaborated research plans are of little use when the doors of the organization remain closed. For some researchers (Buchanan, Boddy & McCalman 1988), this is central to organizational research: getting inside and staying there, and, if necessary, returning to the organization. In this strive they are led by seemingly unrestrained opportunism (box 1).

"Fieldwork is permeated with the conflict between what is theoretically desirable on the one hand and what is practically possible on the other. It is desirable to ensure representativeness in the sample, uniformity of interview procedures, adequate data collection across the range of topics to be explored, and so on. But the members of the organization block access to information, constrain the time allowed for interviews, go on holiday, and join other organizations in the middle of your unfinished study. In the conflict between the desirable and the possible, the possible always wins. So whatever carefully constructed views the researcher has of the nature of social science research, of the process of theory development, of data collection methods, or of the status of different types of data, those views are constantly compromised by the practical realities, opportunities and constraints presented by organizational research". (Buchanan *et al.* 1988, p. 53-54)

Box 1 Compromises

Such a view differs greatly from the 'academic' arguments and guidelines presented in the recognized textbooks on research methods, which assume clear research issues and helpful organizations. These books also ignore the fact that research is costly and time-consuming. Organizational researchers cannot escape from the field of tension that exists between the schoolteacher who wrote the textbook and the opportunist working in the field. They must navigate between their own visions and objectives, the practical opportunities that present themselves, and the opinions of their peers and sponsors. In most cases, this complex field of tension remains hidden in the methodological acknowledgement in the scientific journal articles. In fact, it is argued (Bryman 1988) that many of the described research plans (or designs) are better regarded as what Kaplan (1964) refers to as "reconstructed logic".

Next to the researchers who interact with the field while planning, performing, and reporting their studies, there are scholars who limit such interaction to a minimum. The main risk here is that respondents do not respond, and that research results do not match the knowledge needs in actual practice. Their main worry is that doctoral theses are not approved by the faculty's reading committees, and the editors of respected academic journals do not accept dissertations and papers. This category, too, is not free from opportunistic behavior. The main opportunistic strategy of researchers who keep

the middle of the road is playing safe, using tested instruments, tested theories and safe samples (“the Fortune 500 is always right”) and standard calculations (“Multiple regression analysis is in, and correlations are out”). The effect of this opportunistic behavior is the gap emerging between the *normative* picture of organization research (how research is expected to be done) and the *descriptive* reality of the research process (how it is actually carried out). This gap can be viewed as a serious obstacle to improving performance in the discipline. In any organization, improvement or change of basic processes is based on the development of process knowledge – on knowledge of *how* things are done (cf. Mohr 1982). The author’s personal experience determines how knowledge is predominantly transferred on the individual or small group level. Very little of this process knowledge is ever written down (cf. Pettigrew 1990, p. 267). At the same time, it can be observed that the need for a process-oriented approach to organization research is increasingly recognized within the discipline:

Theory. Sutton and Staw, editors of the *Administrative Science Quarterly* (1995), object that a large number of manuscripts they receive are devoid of theory: authors are fooling themselves by following five “Wrong Ways” of writing theory which is no theory. In their view, references, data, lists of variables and constructs, diagrams and hypotheses, are *not* theory. Weick (1995, p. 385) comments that this might be true, but adds that these substitutes for theory are only partly the result of lazy or incompetent theorizing. He argues that they may also represent interim struggles in which people intentionally inch toward stronger theories. His message is to focus on the *process* of theorizing rather than on its product. Other authors (Eisenhardt 1989, Strauss & Corbin 1990) have offered guidelines to help researchers to go through this process. There are very few research reports that describe how these guidelines should be used (for example, coding according to grounded theory (Roberts 1993, Turner 1983). In this respect, it would be very interesting to know *how* Amit and Zott (2001) used both Internet data and existing theory to create a model for value creation in e-business. They built a useful and clarifying framework, but it remains hidden what the empirical Internet data added to existing theories that served as inputs for theorizing.

Methods. Scandura and Williams (2000) compared the research strategies used in highly rated journals in the 1980s and 1990s, and observe that there has been a significant rise in the use of field studies during that period. Field studies have become the most commonly used research strategy in management studies. At the same time, they conclude that little effort is made to improve the validity of the methods. Despite the call for triangulation in the 1980s (Mitchell 1985) as a way to counter the sacrifice of rigor for relevance, Scandura and Williams conclude that management research may be even further away from rigor. Once again, it can be observed that the literature on *how* (field) methods are actually used continues to be very limited. A recent study (Den Hertog 2002) about blended (or “mixed”) research designs illustrates this. Too often it is hardly described what is mixed, how the mixing has been done, and for what reason. Authors typically limit themselves to the obligatory references to the well-known methods writers, like Eisenhardt, Glaser & Strauss, and Yin. The valuable experience gained in the application of the strategies of these writers seems to be seldom used to elaborate and improve these strategies. Again, this calls for a process approach in which the work done by researchers is analyzed in order to make their learning explicit.

Usefulness. The concern with the usefulness of social research is not new. For the pioneering generation of empirical social research, usefulness was often regarded as a self-evident criterion, and social science knowledge was instrumental in defending democracy (Lewin & Lippitt 1938), raising motivation and productivity (Mayo 1945), and fighting prejudice (Jahoda *et al.* 1951). Research methodology had to be considered in this perspective. This is illustrated by the following quote, taken from the introduction of the first edition of the pioneering methods text book *Research methods in social relations*: “Research methods can be presented in many ways. The special emphasis of our presentation arises from a growing concern among social scientists that their work should contribute to the solution of practical problems as they arise in the contemporary world”. Remarkably, more recent versions (Kidder & Judd 1986) of this classic do not exude such an orientation. It might be presumed that the pressure to publish in highly rated journals has changed the basic orientation of many researchers from “getting applied” to “getting published”. Nevertheless, the concern for usefulness never seems to have (Lawler *et al.* 1985, 1999) vanished completely. The recent empirical study of Mohrman *et al.* (2001) in ten US-based Fortune 500 companies is a good example. The authors point out that (leaving action research aside) there has been little empirical examination and self-reflection about the practical usefulness of various organizational science approaches. Their study supports the proposition that the collaboration of researchers and practitioners in the research process has a positive effect on the perception among practitioners of the usefulness of the research results. This outcome will not come as a surprise to the action researchers, but certainly underlines that the understanding of the *process* of organization research is to be considered as the key to enhancing the usefulness of organization research.

This paper is meant as an early step in the development of process theory about doing research in practice. A process theory can be defined as (Abbott 1988, cited in: Van de Ven & Huber 1990, p. 213): “...explanation of the temporal order and sequence in which a discrete set of events occurred based on a story or historical narrative”. Pettigrew (1990) points out that such a framework requires a link between:

- context: the constellation of relevant actors, each with their specific interest, interests;
- content: explanations of how changes come about (the storyline); and
- process: the sequence of actions.

First, we will sketch the context of organization research, including the role of the researchers, sponsors, the community of practice, the participating firms and their employees. Second, we will use metaphors (cf. Morgan 1980) to characterize five different ways of conducting research. Neither the method nor the underlying philosophy of knowledge is the focal point here. The basic issue in these five storylines of research is the *quest* itself: can the effort be best characterized as an exploration of new territory, a knowledge machine, a criminal investigation, a vehicle for change, or a weapon to defend interests of individuals and groups? At last, we will discuss the sequence of actions in a research project. The time axis is a basic element of the process theory. Research designs are often described as a sequence of purposeful actions in time. This paper will use the empirical cycle as a descriptive (rather than normative) framework for analyzing sequences of research action.

Proposition 1:

Meta studies can be extremely important for the knowledge development in organization science. They should embrace more sources than a small number of so-called “highly ranked” (mostly American) journals. Ph.D. theses might offer a more fruitful stock of research chronicles.

The Research Context

Hammond (1964, p. 6) has pointed out that social research is a form of social activity and exhibits characteristics common to all other social behavior. This means that both the researcher’s formal and informal links to others are important to understand the accumulation of scientific knowledge. In other words, the inner and outer context of research has a strong impact on the research content and the research process. Individual researchers are part of weak or strong, loose or tight teams, are stimulated to explore new ways or have to comply with dominant patterns of the local community of practice. The research is commissioned by an external party (a firm, ministry, or sponsor) and is bound to tight schedules, or is carried out in the “free space” of a research unit. The connections with the field are a second part of the context. Some research groups focus their studies on a particular business sector or institutional sector, for example, the automobile industry, financial services, or hospitals and police services. Others have close contacts with regional development organizations. To a large extent, these relationships determine the opportunities to conduct research in organizations. Having entered the organization, it becomes important to win trust and commitment from the members of the organizations. Below, we will describe a number of lessons drawn from the organizational research of MERIT, the Maastricht Economic Research Institute on Innovation and Technology. MERIT is a university-based research center, employing about 40 full-time researchers. The institute is to a large degree dependent on commissioned research¹. Eleven years of experience as an internal organizational researcher within the Dutch Philips organization have also left traces in the text.

The Local Community of Practice

When researchers work together within formal organizations, or meet in professional settings, they like to listen to stories their colleagues tell. These stories are mostly not told during formal meetings, but informally close to the coffee bar, stories about “what really happened” in the projects in which they have been involved. In this perspective, researchers can be considered as members of a *community of practice* (Brown & Duguid 1991, Wenger 1998). This view is consistent with the positive memories of the researchers who left our team for better positions or a change of scene elsewhere: “What we miss is ‘the talk in the team’, all those stories about the strange, remarkable and funny things that happened on the way to a PhD thesis”. For a professor it is a personal satisfaction to see how one PhD student is helping the other overcome bad days by telling about her or his own past mishaps. However, communities of practice are no heaven for “free-floating intelligence”. The informal interactions within a research institution, or even within loosely coupled professional organizations, often have bear more

¹ See: <http://www.merit.unimaas.nl>

resemblance to Melville Dalton's description of "power struggles in the line". Local communities of practice are not only facilitating, but can also be uncollaborative, restrictive and resistant to change. The frictions and interchanges of perspectives can at times be far less inspirational than Brown and Duguid (1991, p. 54) want to make us believe. This becomes clear when a new unit with a different perspective on organization research is set up within an established organization. Interdisciplinarity, methodological pluralism and practical relevance of knowledge are espoused values in a large number of research organizations. Under the surface these views can turn into a barrier, which become manifest when the team members compete for resources, apply to the same vacancies, or when a PhD thesis has to be approved by the reading committees within the university department. In such environments, the building of a strong legitimization of the chosen approach becomes an important defense line for the team. For this reason, the MERIT organization research team strongly emphasized on the development of knowledge about qualitative and mixed research methods (Den Hertog & Van Sluijs 1995). The development of external networks can also be a strategy to strengthen the internal position. The research programs of the European Commission offer the chance to build such networks. At the same time, membership of multiple fraternal networks has become preconditions for participation in these programs.

Proposition 2: *It really pays off to read the full texts of the classical authors that are quoted so frequently.*

The Firm Providing Access

Not only researchers invest time and energy in a research project. Firms invited to participate in the research are also expected to put in some of their time. Therefore, there must be something in it for the firms as well. Within the Dutch business context, this means that the researcher has to make very clear what the added value of the project is for the firm: a benchmark report, the final report of the study, free publicity, feedback meetings, or an invitation to participate in a conference. Firms might even pay when they expect some real value in exchange for their involvement. The researcher will have to make clear what the firm gains from the research and what efforts are required from the firm. It is imperative that the researcher finds a good way to do so: a concise, clear summary of the research design and objective, while paying explicit attention to costs and benefits. Each firm has its own arguments to participate. The researcher must be aware of the fact that the arguments used to convince one firm might be an obstacle to another firm, and that a careful preparation is (box 2) no guarantee for gaining entry. Moreover, a firm's arguments may change during the course of a project. The researcher is then confronted with the choice of canceling the research or changing course.

Eventually, entry is frequently a matter of faith. It may take a long while for researchers to gain confidence. In some firms, they go through some kind of initiation. It is not until they are viewed as an 'initiate' that the doors to the interior will be opened. Sometimes, a recommendation from institutions trusted by firms may prove helpful, for example, employers' or trade associations. The interests that are at stake in the research are not limited, of course, to those of the management. Clearly, in dark times in which managers have to decide who must leave the firm, it is inappropriate and extremely clumsy to

propose an interview-based study into the effectiveness of the performance appraisal system. In other politically charged situations, things may be different. For example, the management wants to keep the doors closed while the works council is doing its utmost to keep them opened. For the researchers, this means that, even in situations in which the management has said “yes”, one must obtain a picture of the political field of tension in which the research will be performed. Under such conditions researchers have to invest in the development and maintenance of relationships with firms that represent potential participants in their research. The gradual build-up of a network of such firms, based on trust and competence may prove to be a basic asset of the research team.

The participation of firms was very disappointing in one of our projects. The project (Den Hertog *et al.* 1996) focused on innovation management in the processing industry. The set-up seemed to be clever: representatives from the participating firms would be involved as a sounding board during the whole research process. A group of departmental managers from eight petrochemical, chemical and pharmaceutical firms was invited to follow a program of “action learning”. Most of the firms approached responded positively. There were no costs and real commitments involved. The group met every three months. The first 9 months were meant as a warming-up for the final program: a comparative case analysis. Ideas for the program were discussed and formulated with the group. Presentations about the basic issues were given by the researchers and were followed by an open discussion about the managers’ experience. In between the meetings, the researchers visited the firms to discuss related problems and opportunities on a one-to-one basis. These talks were meant to define the final program. The hangover came once the proposal was formulated and accepted by the group. Only a few of the participants succeeded in getting support for the project in their organization. In the first firm (a Fortune 500 multinational), extensive discussions were held with a variety of internal experts in a friendly ambience. The result was disappointing: “The research set-up is excellent and would contribute to the solution to our problems. But that is also the bottleneck: we are not interested in communicating with others about our experiences in such a strategic sector”. The second firm’s initial reaction was also positive, but when the participating manager was approached to make appointments for the interviews it appeared that he had been fired on the spot. As a result, involvement with the project was put to an end without delay. The third firm had also agreed to participate based on the relevance of the research. Group meetings had been held about the objective and working method with all group leaders and employees. However, a week before the interviews were to take place, a forthcoming merger of the firm was announced, and higher management decided that this was not a suitable time for the research to take place...

The rate of participation in a later project on innovation management was far more successful. The study (Huizenga 2000) was carried out in the Dutch software industry (both service providers and product developers). In each company, open interviews were held with three managers. At the end of the interview the respondents were asked to fill in a questionnaire, consisting of a total of more than 500 items. These sessions took one and a half to two hours. Thirty-one firms agreed to participate out of the 60 firms that had been approached. Most of the major players that together were responsible for a major part of the Dutch market promised to cooperate. Crucial to access was a letter of recommendation from the association of Dutch ICT firms (FENIT). FENIT advised the researchers to ask the participating companies to pay a contribution of 1500 € “. Otherwise they won’t take it seriously. It can only be good when it costs money”. The researchers gave a presentation to the association’s general meeting. Halfway this presentation one of the members made a few critical remarks with regard to the set-up of the project. The incident was a little painful. However, the direct

and more or less blunt reaction of the researchers caused the majority of members to vote in favor of participation in the project. The mediation of the association appeared to be crucial in this project. Furthermore, the level of the management for which the presentation was held was considerably higher than in the first project. The difference in the way both projects were funded was remarkable. The first project was part of a government-financed program in which a close link between the worlds of business and scientific research was one of the important conditions. The funding for the second project came mainly from the Dutch science foundation (NWO). The expected outcome was in the first place a scientific product (PhD). The methodology of this study had been established at the start of the project, while the focus and set-up of the first project were open to discussion among the manager group. The outcomes were indeed unexpected. The “science-oriented project” resulted in a real dialogue with firms, while the project that had been set up as a dialogue had to be stopped half way due to a lack of cooperation.

Box 2 Some dialogues don't work

Box 2 illustrates that there are no simple rules for collaboration with the field. Dialogues with managers and employees from different levels within the organization do not always work, nor do the active involvement of members of the organization in the planning and execution of the study. Sometimes it is just about having the right ideas at the right time at the right place.

The Members of the Organization

In the Dutch context, it is considered good practice to discuss any plan for organization research with the organization's works council, regardless the objectives and internal or external origin of the researchers. The works council act provides guidelines for this. It is generally regarded as a matter of common sense that there should be agreement about the usefulness of the project and the procedures to be followed. Under these circumstances, the principle of “informed consent” (Kimmel 1988) is not only an ethical matter, but also a pragmatic one. Some academic studies hardly touch the internal life in an organization, and it might be sufficient to just mention a few of the basic rules (anonymity, no misuse of strategic information, etc.) the researchers promises to follow. However, agreement about a study at different levels is crucial when the study touches actual debates, ongoing change projects, conflicts of interest and policy decisions. In those cases, the development of the rules of conduct between the different levels of management and the workers and the researchers can take the form of a development project in itself. In that context it is not only important to test the researcher's behavior for explicit rules but also the behavior of the other actors within the organization. Box 3 gives an example of such an agreement.

In a study aimed to evaluate the working of self-managing production teams in an engineering workshop of a large electronics firm, the researchers, together with the management and the works council, put the following agreements in writing:

- The management and works council is informed of the progress of the research in each step.
- Agreements are made with the management and the works council in advance about how the research is carried out.

- No mention whatsoever is made of statements made by individuals and individual teams.
- The researchers are in possession of the data and do not make these available to anybody else.
- The research reports are available to everybody within the firm.
- Feedback is given first to those who have made available the data. Only then are these reported to the management and works council.
- The subjects for the group interviews are made known in advance.
- The research will be repeated in the same form in August of next year.
- External articles will not be published until the company report has been approved by the management and works council.
- The researchers are responsible for interpretation of the results.
- The management and works council have the right to comment upon the company report in case they want to give a different interpretation to the results.
- All company reports must be formulated in such a way that they are comprehensible to all members of the organization.

(Source: The author's personal files)

Box 3. Rules of conduct

The example from box 3 has played an important role in the project in question, where the management tried to reverse an experiment with teamwork because the group leaders were having major problems with their new roles. The management tried to cancel the follow-up research. In addition, the team members were highly suspicious of the research. Despite all the agreements that had been made in advance, they viewed the researchers as an extension of the management. The works council succeeded in convincing the team members of the tactical relevance of the research and the reliability of the researchers. In fact, the works council had made sure that the researchers carefully observed the rules of conduct. In this sense, ethical rules of conduct also have an instrumental meaning: they form a contract by which parties can be bound and courses of change projects can be adjusted. The involvement of relevant actors in the whole process – from planning to reporting – can put them in a new role inadvertently: the role of co-researcher. A project originally set up to test an academic theory might result in a study with strong characteristics of action research.

The sponsors

A great number of organization research centers in Europe have become increasingly dependent for their resources on external and internal sponsors: special internal funds, the European Commission, national funds for basic and applied research, ministries, social organizations, and firms and industry associations. This certainly applies to MERIT. In actual practice, this usually means that compromises must be reached between the needs and preferences of the sponsors and those of the researchers. Simply put, there are two extremes: (1) the researchers are strongly led by their own ideas (see box 2) and try to enthuse sponsors; and (2) the researchers call for a tender for largely predefined policy-oriented program. In policy-intensive areas such as labor market policy, more money is often available. Consequently, the sponsors want to determine themselves what the research should look like.

Research institutes cannot afford to be picky because continuation of their staff's jobs relies to a large extent on contract research. Even so, they will strive for sufficient space to put their own ideas into practice. In new, less intensive policy areas, fewer funds might be available, but researchers (box 2) with original ideas and interesting data might have better chances to express their own views.

The development of the large research programs of the European Commission has an important impact on the context of most research centers in Europe. The European programs, part of which is called the "European Framework Program", do not simply represent an extra flow of money. They have created institutionalized environments, which usually have a strong impact on how the research is to be carried out. In the first place, the research is practically always carried out with other parties. Studies tend to involve at least researchers from five member states, both from developed and less developed countries. The comparative case study has become a popular approach in many programs. The program might also ask participants to develop a local network of firms or other organizations. Furthermore, there is an overtly intended bias towards choosing "positive cases" ("best practices"). Pragmatically speaking, these projects can offer the researchers a good possibility to learn to work in an international and cross-cultural context. They help to sustain a certain level of continuity (mostly junior) staff and often urge research teams to work in more effective ways. The European research funds have extended the possibilities to do design-oriented organizational studies (cf. Daft & Lewin 1993). It is doubtful, however, that the data from these studies guarantee the possibility to publish in high-ranking professional journals. Besides, the continual dependency on European funding might introduce the risk of lock-in, and of narrowing the research perspective.

Proposition 3: *The time has come to assess the impact of European funding on social research in the member states, both at the institutional and at the work level.*

Metaphors of Doing Research

Organization researchers that write about doing research mainly use concepts from two sources. The first source offers the "espoused" or "canonical" practice (cf. Brown & Duguid 1991) of the textbooks, the manuals and the training programs. It provides instructions about case study design (Yin 1989), sampling (Maisel & Persell 1995), content analysis (Krippendorff 1980), or any other technical matter. The second source of concepts is the stream of ongoing professional debates about the philosophy and epistemology of organization research. Remarkably, most discussions focus on dichotomies (box 5) with strong defense positions for each side. It almost looks as if organization science is divided into two camps, one of them sticking to stringent methods and norms, and the other holding on to policy and theory relevance. Illustrative of this is the discussion in the 1980s concerning research in organizational development. Researchers belonging to the former camp (Nicholas & Katz, 1985, p. 737) welcome a trend towards "more rigorous methods and designs, especially the use of quasi-experimental design and sophisticated statistics". The other camp (Beer & Walton, 1987, p. 344) points out that these ingredients are not the best way for research into organizational development "for understanding a

multi-causal phenomenon". The latter are in favor of employee involvement in the study and of "rich descriptions of context and system dynamics".

normative — descriptive
subjective — objective
relevance — rigor
practical — theoretical
applied — fundamental
qualitative — quantitative
decision-oriented — conclusion-oriented
action-oriented — explanation-oriented
theoretical — empirical
theory-building — theory-testing
local knowledge — general knowledge
clinical — stringent
inductive — deductive
interactionist — positivist
real world — artificial world

Box 5 No lack of dichotomies

These normative concepts are well represented in what Brown & Duguid (1991) call the *finished view*, in which the work is defined in terms of the end product: the final publication. They also might play a role in the *starting view*, reflected in research proposals. However, most of the real work is carried out between start and finish. This real work is often (Marshall & Rossman 1989, p. 21) "...confusing, messy, intensively frustrating, and fundamentally nonlinear". Dichotomies (Hammond 1964, p. 5) do no justice to the practice of social inquiry. To describe and understand what happens between start and finish we need other concepts than the normative concepts from the textbooks and philosophical debates. We need concepts that are close to the actual work and to the contexts in which the work is carried out, preferably concepts offering multiple perspectives of the whole process of knowledge development (or: *knowledge enterprise*, Roethlisberger 1977).

According to Gareth Morgan (1986), experienced managers and professionals in organizations have developed the ability to 'read' situations. They do so keeping in mind different possible scenarios, and are therefore capable of rapidly developing action patterns suitable for these different scenarios. In addition, effective managers and professionals have an open and flexible mind. They are able to suspend their judgment as long as the image in their minds is incomplete, and they are aware that new insight into the situation does not arise until the organization is looked at from a different perspective. Less effective managers continue to look at reality from only one perspective and are continually confronted with bottlenecks they cannot avoid. If this leads to a clash of opinions, they see no other way than harping on about the same thing harder. Morgan suggests that this also applies to the analysis of and research in organizations. Usually the formal analysis and diagnosis implicitly or explicitly follows one specific theory. Just like effective management, the effective analysis of an organization is based

on the ability to involve rival theories and explanations into the work, rather than to hold on to fixed and rigid stances. Morgan assumes that the theories and explanations of the organizational practice are based on a limited number of images of reality. These images are based on a metaphor. He points out that it is important to describe these metaphors and to see how one can deal with these various metaphors in the analysis of the organization.

It is suggested in this paper that the argumentation applied by Morgan to the contents of the research (the organizational theory) can also be applied to the research process. Researchers are part of an enterprise that focuses on the build-up, transfer, and use of knowledge. They never start with a blank piece of paper, but they start in a reality of mature or rudimentary theories, fitting or non-fitting instruments, and fragmentary or detailed knowledge of the field. In addition, this enterprise, as we have seen previously, is not performed in a social vacuum; the researchers operate in a group of co-players. The expectations of the research are seldom univocal and they may change while the research is being conducted. The following metaphors may be useful to unravel this tangle of expectations. First, the metaphor (i) of the swamp is used to describe the dynamics of the research field. This is followed by the five most important strategies used to penetrate into this swamp.

Metaphor (i): The research field as a swamp

Schön (cited in Kaplan 1986, p. 441) tries to clarify the various visions of objectives and means by comparing the work field of organization research with a swamp. This comparison will be extrapolated in this paper. A swamp is composed of a limited number of high and dry spots in the midst of a large surface of marshy land, deep and less deep water, and areas of quicksand. A large part of the researchers concentrates on the high and dry spots, the places where they can make good use of their instruments. From these positions they look out over the swamp and feel superior to the plodders who stayed behind in the lower parts of the swamp. Unfortunately for them, the really important developments and problems mostly take place deep down in the swamp, at places where the heavy instruments may sink any moment. Researchers who have the courage to go there risk going under and losing solid soil. The other part of the researchers is averse to certainties and look back sarcastically to the overpopulated higher grounds. They have moved into the swamp because they want to investigate the organizational problems and phenomena close by. Some of them have dragged along the heavy instruments and left them somewhere back in the swamp because they can hardly move an inch with them. Others had already left them behind on the higher parts, and have even stopped staying in touch with the colleagues that stayed there. Their exciting adventures in a landscape full of unexpected possibilities and threats are published in the management literature now and then and are read eagerly or full of suspicion by those who stayed at home. Nothing may ever be heard of many of the others. This metaphor seems to be adequate to describe the field of forces in which organization researchers do their work. The course of their search is determined by the following: production pressures, the will to be relevant, the adventure of being innovative or the conformity to the norms of soundness of the community of practice to which they belong.

Metaphor 1: Research as a knowledge machine

Science functions as a programmable machine, which operates according to precise rules and procedures accurately described in manuals. The machine is fed using two raw materials: hypotheses and observations. When the machine is adjusted correctly it will produce knowledge in bits and pieces: tested hypotheses that can be used to make a case for, or reject, a certain theory. Research is conducted in the 'hypothetical-deductive' manner, i.e., hypotheses are derived from logical principles. In this vision, a theory can be defined as (Neale & Libert, 1986, p. 13): "a coherent group of propositions to explain a class of phenomena". Because in many theories, the propositions are too general to adequately test them to reality, sharply defined presuppositions are derived from these general propositions, which can be tested on the basis of observations: the hypotheses. Examples of these are given in box 6. The translation of the variables of a hypothesis into measurable values is referred to as "operationalization". In this perspective, theories are broke down in smaller and smaller bits and pieces.

Theory: When bureaucracies (Galbraith 1973, 1995) are confronted with increasing complexity and uncertainty they have to invest in new control strategies. One of them is to invest in lateral organizational forms, which connect different functional units more directly without burdening the hierarchical structures.

General proposition: Successful innovating firms invest more in lateral structures than less successful innovators (Huizenga 2001).

Rival proposition: Success in innovation is to a large extent a matter of culture (Kanter 1983).

Hypotheses: Successful innovators are making more frequent use of multifunctional groups, give more power to project managers and less to functional managers and stimulate cross-functional careers (Cobbenhagen 1999).

Operationalization: In a sample of 31 Dutch software firms (Huizenga 2001), managers were interviewed. Indicators for successful innovation on firm level were gathered: time-to-market, the percentage of new products in present turnover, the share of the profits from new products. Managers were asked to give indications about the use of cross-functional teams in the firm, about the distribution of power between functional and project manager,s and of the occurrence of horizontal career steps.

Box 6: Theories, propositions, hypotheses and operationalizations

In an even stricter vision (Popper, 1959) it is impossible to prove a theory, but merely to make a case for it by eliminating rival presuppositions ('falsification'). Scientific progress can be achieved only by constantly attacking theories (Van Hoesel, 1985). When the hypotheses are rejected, the theory must be adjusted or rejected. In the former case, new testable hypotheses can be derived.

In this metaphor, science leads almost a life of its own. The research agenda is a product of the research itself. When a certain theory is established, the increase in testable hypotheses and the attempts to build upon the theory is an almost autonomous process. As long as energy is added, the machine will keep running. Knowledge is built up in small incremental steps. Reisman (1988) refers to this as a "rippling process" (figure 1). A researcher departs from the n dimensions that are known and develops a model for n+1 dimensions of the same problem area. His colleague takes the model using

n+1 dimensions as a starting point and develops a model for n+2 dimensions. The knowledge machine in this metaphor is to a large extent programmable, both in a theoretical and in a methodological sense. In the existing theory, one seeks a white area of inconsistency, from which a new dimension is derived. The research question is adjusted and the accompanying method is looked up in the methodological recipe books. As the rippling goes on, the research is becoming increasingly predictable until the researcher runs into a brick wall and is forced to digress (Reisman, 1988, p. 217). However, often researchers do not notice that they run into difficulty. They are driven by an unprecedented longing to bump into the wall of a completely hollow yet fashionable theory. Only a minority takes the risk of digressing.



Figure 1: The rippling process

In terms of scientific publishing a good running knowledge machine can be a goldmine. Well-validated and simple to use instruments can keep the machine running for a long time, especially if the issues they deal with are fashionable in the world of theory or practice. Hofstede's (1980) work on measurement of culture and Cooper's (1986) efforts to seize the success factors for innovation can be considered representatives of such an approach. Cooper's complaint (Cooper 1999) that after twenty-five years of research into why new products succeed, new product teams and leaders seem to fall in the same traps, might suggest that the brick wall could be just around the corner. The "hidden factors" presented by Cooper to account for his observation might be viewed as the onset of new theory.

For the average researcher, it is mostly a fatiguing and conscientious yet safe job. He follows the footsteps of predecessors and acts the way he is expected to act. It is a safe enterprise because the researcher is not faced with surprises. According to the cookbook of social research (for example: Kidder & Judd 1986), in methodological terms two main routes are traditionally designated for programming the knowledge machine: the experiment and the survey. The instruments of the knowledge machine are heavy ones and they require a sound foundation and precise calibration. This is the reason why they are usually found on the higher grounds in the swamp.

Proposal 4: *More organizational research should be done with the overt intention to attack a certain theory rather than to defend it.*

Metaphor 2: Research as an exploratory expedition

Research must lead to knowledge that is not available now. If we knew exactly what we don't know, we would not need to do research. That is the 'catch 22' of scientific research. The history of practically any discipline shows that ideas emerge from time to time that are fundamentally different from prevailing insights. This may happen when the researcher (see box 7) stumbles into a thick wall with his knowledge machine, and can no longer go straight ahead. In the research practice such things happen when a carefully set-up test leads to entirely different results than those the knowledge machine had been programmed on. In the organizational theory, perhaps the Hawthorne experiments represent the most classical example (Roethlisberger & Dickson, 1939).

Maarten Verkerk was a production manager in the high-tech component industry of Philips for over 15 years. During his career he had gained a vast experience in socio-technical re-design (De Sitter *et al.* 1997) and process improvement programs. He was asked for a new management job in another plant of another division just across the Dutch border with Germany, where he was expected to give the ongoing process improvement programs a firm push. The plant could use some fresh air. This would be another occasion to implement his socio-technical learnings. Out of personal interest and a kind of professional pride he decided to write a second PhD thesis (holding a PhD in chemistry already) about the change program he was going to start. The program would be based on open dialogues at all levels of the plant, along the same lines of his previous projects in other plants - in fact, along the lines followed in his former business unit. He worked, so to speak, within a certain tradition of managing change. The first months in the new plant things went quite well. He talked a lot about his ideas at almost every level of the plant. His 'evangelism' appeared to be received positively in many places. From the moment that Maarten expected active responses to his ideas, however, things started to go wrong. In fact, he hardly got any response at all. The dialogue techniques he learned in former positions did not work. For one reason or another it was difficult to start open discussions. People were friendly, but nothing really happened. Why didn't the socio-technical approach work here? Maarten made the right decision not to pursue, but to find out first what was going on. Inspired by Scott-Morgan's book (1994) *The unwritten rules of the game* and Dalton's (1959) classic *Man who manage*, he tried do a little ethnography in his own plant: regular visits to the plant during night shifts, frequent social talks with the older craftsmen and first-line supervisors, and drinking beers with his peers in the management team. One night, one of the older craftsmen told him the whole story; the story about the row of plant managers who had come and left again before Maarten, all of them with their own ideas about how to change the factory, about the steep walls between functional departments, and the deep mistrust at the shop floor. There was a kind of status quo in the plant, and hardly anyone was prepared to touch the balance. Subsequent talks and observations confirmed this picture of the factory. He suddenly became aware of the different context he found himself in, as if a window had suddenly opened itself. The previous plants had accepted the fact that their high-tech products had a short life. Continuous change had become the normal state. In fact, these plants earned their place within the company by their ability to keep on moving. An open change-oriented culture was simply the way to survive. This new plant was different. Everybody, from the shop floor to the top, was convinced that the product was to stay forever, and that no other plant would ever reach the same level of competence. Together with traditional leadership patterns, forced industrial relations and frequent changes at the top of the organization, this resulted in distrust, resistance to change and inward views. Maarten began to look at the organization through different lenses. He started to read other kinds of literature; literature on power and trust. He had discovered that the theory he was familiar with did not work under certain conditions. When he ran into the brick wall he had to find new explanations. (*PhD thesis forthcoming*).

Box 7: Running into a brick wall

The researcher is *forced* to look for alternative explanations for his observations. Few researchers choose to follow that route consciously. They consciously leave the beaten track (or the high and dry spots in the swamp) and explore unknown territory. They often end up like the discoverers from the previous centuries. Some get lost, will never return, and are soon forgotten. When others come back after years of exciting expeditions they are either celebrated for their courage, or reviled for their thick and unfounded stories. Who can check what they have experienced? Trist and Bamforth's (1951) study of the work organization in a British coalmine is a good example. Ex-miner and researcher Ken Bamforth succeeded in penetrating into the closed subterranean world. A rumor had reached him, which said that deep down in the mine a new work form had come into being: miners were working together in teams integrating all operations needed to exploit the coal front ('the composite work team'). This natural experiment was kept a secret for the aboveground organization because those concerned feared that the bureaucracy above the ground would break down the organization they had designed themselves. Bamforth's discovery led to a number of highly mixed reactions (Van Eijnatten, 1993). The mine's management wanted to prevent publication of the researchers' document and forced them to change the text. Fellow researchers were enthusiastic. The discovery led to the formulation of a new theory about the organization of work, which was at right angles to Taylorism: socio-technical systems design (Van Eijnatten, 1993).

Discoverers take along the instruments they can carry even in territory that is difficult to pass and make their field of observation as broad as possible. To them, the precision of measurement is not of primary importance. Instead, they are interested in describing and understanding ('Verstehen') the unknown surrounding world. Their ambition is "to understand in depth how some aspects of a real-world social system actually functions and describe this process in ways that will help others understand the functioning of this and other social systems" (Blanck & Turner, 1987, p. 110). It should not be difficult to comprehend that a large number of discoverers select the tools of the ethnographer — in other words: himself — and the case histories of the clinician.

Metaphor 3: Research as a criminal investigation

The researcher is charged with investigating a case, which may be a commissioned project, or which may ensue from his own interests. There is a problem or a mystery waiting to be unraveled. As a detective, the researcher has a 'toolkit' at his disposal, containing professional instruments. He is expected, as a detective in court, to use these instruments in accordance with the norms of the trade. Theory may play a role as a resource, but always keeps a low profile. The experienced investigator never confines himself to a single theory. At the end the detective-researcher must supply conclusive and convincing evidence. He does so (cf. Cook & Campbell, 1979, p. 79; Hutjes & Van Buuren, 1992, pp. 69-70) by collecting clues, gaining insight into the backgrounds of actors, taking into account (statistically) most common behavioral patterns, and by reducing the number of suspects (or causes) step by step. This detective metaphor for organization research won't fully stand, of course, if only

because there is no intention to accuse a suspect and because the researcher is not limited to some formal organizational law. The metaphor is particularly relevant because, just like in a crime story (cf. Hutjes & Van Buuren, 1992, p. 70), in many cases:

- a concrete social problem must be solved; which requires
- a reconstruction of courses of action;
- on the basis of a conclusive, coherent argumentation;
- using facts gathered by scientific means and supporting one another.

Thus, the researcher or advisor can tackle the question of why there is such a huge turnover among young employees or why the throughput times for certain products are so long. The solution to these mysteries serves to reduce the turnover or shorten throughput time. In applied projects, such as the one mentioned in box 8, the distinction between consulting activities and research is expressed in the methods used. This example is concerned with research because scientific instruments were used and the rules from scientific textbooks were followed. The project could have been dealt with by bringing in a consultant, in which case one would have started promptly with group discussions or some kind of absenteeism guidance. Although the formulation or testing of a theory does not necessarily play a role here, it may be used for some of these projects. For example, the questionnaire could be expanded on the basis of a theory with questions concerning the home situation and employee motives to work for the company. In another plant of the same company, the research could be repeated to check and see whether the expectations are proven correct. However, this step is not made in most 'detective work', where a case is closed once it has been solved.

A production plant of the lightning division of Philips (Den Hertog, 1973) was facing extremely high absenteeism among female production personnel. A survey consisting of 25 topics was conducted. Using a five-point scale, respondents were asked about their satisfaction with and the importance of these topics. The questionnaire data was coupled to data about absenteeism (duration x frequency). A waterproof guarantee was given that the data would only be analysed at group level. At first sight, the study provided few useful conclusions. High satisfaction (group 1) went hand in hand with long-term absenteeism and low satisfaction (group 2) with frequent absenteeism. Infrequently absent employees (in terms of duration and frequency) were neither satisfied nor dissatisfied. They did indicate, however, that they attached far more importance to most aspects of their work. A second (or 'secondary') analysis of the data showed that group 1 was mainly composed of married women with children, group 2 of young single women, while group 3 consisted mainly of married women without children. Group interviews that were subsequently held with representatives from all three groups revealed the following:

- Long-term absenteeism occurred especially in situations where the home front makes a strong appeal to the women in group 1, particularly in case of illness of their children;
- Short-term absenteeism resulted mainly from a negative attitude towards the factory as a place to work. Most women from group 2 would have preferred to work in a shop, but employment in the region did not allow that. The home situation more or less forced them to earn a living in the factory.

- The women from group 3 had a positive working attitude: they wanted to earn money for the mortgage, or to afford a holiday abroad. This group felt strongly committed to their work, but was at the same time critical towards the way things went at the factory.

The company liberalized the possibilities for unpaid leave, and set up a project for job enlargement and enrichment. As a result, absenteeism was drastically reduced within two years.

Box 8: Why are we facing high absenteeism and what can we do about it?

Metaphor 4: Research as a driving force for change

Some researchers do not content themselves with insights, proof, discoveries and policy-relevant information. They view scientific research as a driving force for social change. The research must set the flywheel of a socially desirable process in motion. They derive the inspiration for the research from the existence of an undesired situation somewhere in the swamp. In the 1940s, racial prejudice and the insidious spreading of fascism drove Kurt Lewin (Peters & Robinson 1984) to reflect on the position of social sciences. Lewin observed that the increasing stream of empirical research passed by the contemporary forceful social problems. Research was supposed not only to supply proof that democracy is the superior form of administration and that interracial conflict can be solved by fighting prejudice, but research should also initiate processes of democratization and integration. Lewin wrote two short notes (1947, 1948) containing ideas that have guided and continue to guide a lot of change agents even today. He referred to his approach as 'action research'. He regards action research as a sword which cuts on both sides: not only does it contribute to social change, but by changing social systems we also learn how to better comprehend these systems. Action research has thrived particularly in Scandinavian countries, where it has often been based on collective agreements (Greenwood 1999, Gustavsen 1992, Van Eijnatten, 1993). In the early days of the Norwegian experiments with industrial democratization, the researchers took along their sleeping bags to the factory. They visited paper or fertilizer plants, post offices and metalworking plants, not to describe processes and test theories, but rather to give shape, together with the employees, to the redesign of their work organization. In the beginning, the researchers brought along their own ideas about how an organization should be designed. Despite all their good intentions to enhance employee involvement, they realized later that they continued to act as experts, who try and come up with solutions to other people's problems. In contemporary Scandinavian action research (Gustavsen 1992; Greenwood, 1999), the role of researchers focuses primarily on process rather than on content. The members of the organization are considered as co-researchers. They build up a local theory about their own organization. The change process in this approach rests on the democratic dialogue between the employees and the management. The role of the action researcher consists in coming forward with conditions in which it is possible to develop such a dialogue.

The crime story (metaphor 3) can also serve to start a change process by visualizing problems and getting to the causes. In that case, the researcher stays in his role as expert, and the management and employees keep their roles as clients. Box 8 is an example of this. Theoretically speaking, the division of roles was clear in this project: the management commissioned the study and clearly formulated the

question; the researcher was expected to provide the answers; and the employees were the study's subjects. In actual practice, this distinction is often less easily made. In many firms in North and North-West Europe such research can only be carried out if the worker representatives (for example, the works council) agree, and appreciate its value. This means that the management has to explain to the employees that the results of the research will be taken seriously and that the management will discuss with the employees the measures needed to better the situation. In other words, such projects gradually can shift emphasis from data collection to consultation.

Metaphor 5: Research as a weapon

What can be the role of research when discussions between parties are impossible? When a trade union or works council, for example, wants to expose abuse and the management counteracts this? Such situations are quite frequent in real life. Usually, the research in such cases is based on some kind of co-operation between the researcher and the employees. The research becomes, in fact, a weapon in the battle of interests. Take the 'workers research' (Buitelaar & Vreeman, 1985), where the initiative is taken by personnel representatives, for example the works council or a local trade union department. The outcomes of the research might be used to enforce improvements or to block new measures. One example of pressure is the attention given in the press to the results of the research (box 9). The company is pilloried, one tries to hurt it where it is most vulnerable: its 'wallet'. Thus, the trade union representative of the example in box 9 advises the clients of the security companies to go into business only with companies who hold on to collective labor agreements. Such an approach does not improve relations between parties, certainly in the beginning. However, it may be necessary when the management continues to stubbornly ignore the problems. Box 9 shows that the opponents tend to put the scientific basis of the research up for discussion. When researchers cannot rely upon the co-operation of the companies, they can use the unions' member registers in order to compose the sample. Alternatively, they can go 'undercover' (Beynon, 1988). A striking example is the research performed by the German author Günter Walraff (1977), who disguised as a Turkish employee and worked for various German companies with a view to expose the discriminatory behavior within those companies. Such an approach often evokes furious reactions in the company concerned, which can be expected to deny the correctness of the results. Undeniably, such undercover operations trigger public and political discussions. Obviously, a method like this will also set off a discussion about the ethics of the research. In fact, the researcher pretends to be someone else and takes sides. Can you trust somebody like that?

"Security people are seen as milk cows" BY MARJOLEIN DEKKER

The Hague - The collective labor agreements in the security business are badly observed. A large number of employers have been violating agreements about working hours and breaks. Moreover, employers do not hesitate to intimidate or threaten to dismiss employees who criticize such violations. "It is surprising to see that these people are still doing a good job," says union leader HP of the BHLP Union in response to recently published research into the labor conditions and relations in private security services in The Netherlands.

[...] The survey, which was conducted by the Bureau Research for Policy in Leiden, involved interviewing 850 people (BHLP members, *auth.*). The study was initiated after a growing number of employees filed complaints about the violations.

[...] One of the biggest firms in the business, Randon Security (1800 employees) in Diemen, denies the criticism of the BHLP Union. A study conducted by the firm itself only three months ago has not revealed similar complaints, says H. Verbeek, member of Randon's management. The outcomes of the Union study are a surprise to him and he suspects the questions may have been suggestive.

Source: De Goudse Courant, Monday 1 August, 1994, p. 3

Box 9: Research as a weapon

It should be kept in mind that research activities designed with the best intentions, and discussed openly with all parties involved can end in a situation where any word is interpreted in political terms.

The Knowledge Enterprise as a Learning Cycle

The five metaphors described above do not represent separate positions, but "trails" in the knowledge enterprise. These trails can be viewed as parts of a longer trajectory of knowledge development. Research projects usually build on an existing knowledge base rather than being isolated. In turn, they initiate other research and lead to the application of scientific know-how in actual practice, thus adding something to the knowledge base. This knowledge enterprise is described by numerous authors (De Groot, 1961; Kolp, 1984; Marshall & Rossman, 1989; Popper 1959; Roethlisberger, 1977) as a learning cycle, which roughly distinguishes the four following functional steps (figure 2):

Exploration. The learning process starts with unintended or unexpected observations. The exploration provides the ideas for the formulation of a theory. It triggers a search process and gives clues about what to look for and where.

Formulation of a theory. On the basis of (sometimes systematically gathered) data a theory is established step by step. Meaning is attached to observations. This process is also referred to as reflection.

Testing. Hypotheses derived from the theory are tested, rather than the theory itself. Hypotheses (see box 6) are highly specific presuppositions derived from general theoretical presuppositions. Testing leads to rejection, adjustment, or confirmation of the theory.

Application. A tested theory leads to application in practice. Experiences with the application may further lead to adaptations in the theory, thus making the application a form of exploration.

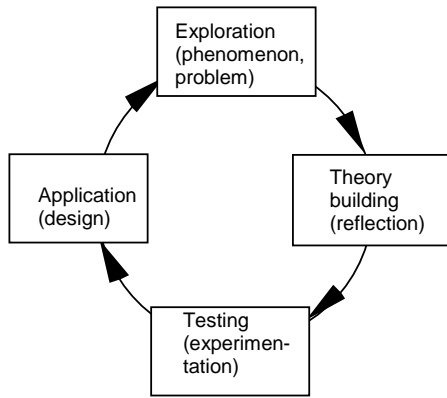


Figure 2: The learning cycle of research

This cyclical vision of the knowledge build-up, based on the feedback principle (Popper 1959), illustrates the connections between the different functions that must be fulfilled in research. Frequently in the traditional methods literature (for example: Yin 1989, Kidder & Judd 1986) these functions are matched with certain instruments. In this perspective, ethnography and case studies are considered the right tools for exploration, while the survey and the experiment are the right choice for testing. The learning cycle shows the dynamics of the research process and is powerful by its simplicity. However, looking at practice, actual research processes appear to be far more complex. Four important amendments have to be made. First, it should be emphasized that the cyclic view does not imply that a research project does not necessarily have to go through all functions. The knowledge enterprise is not usually a 'one-man business', but is based on knowledge and experience brought together by a large number of researchers in the course of years. It has become legitimate for an individual researcher (for example, a PhD student) to perform only part of the functions. A project may have a mainly exploratory, testing, or applied focus. The second amendment concerns the seemingly logical match between the functions in the learning cycle and types of research instrument. In practice one can see that the various instruments can be applied in almost any function. Experiments can be the basic input for theory development, especially when they falsify popular views. The Hawthorne experiments (Roethlisberger & Dickson, 1939) are a case in point. Revealing new and unexpected phenomena, these experiments opened the door for basically different theoretical views. Case studies can be used, according to Yin (1989), to test theories, and surveys can be a tool for the exploration, for example in the case of a survey feedback. The organization-wide survey can help to detect places within the (Mann, 1957) organization where people are dissatisfied about the quality of their working life. Group discussions with workers and managers concerned can serve to interpret the data and build "local theory". (At the time of writing this paper, a similar project is being carried out in the university department of the author.)

Third, the diagram suggests a forcing order of functions that have to be fulfilled in all types of research. However, in the research practice this order can also be reversed. Knowledge development is like change in any other social system, often not linear, or cyclical. In other words: the arrows in the scheme can also be drawn in the opposite direction: explorations showing new applications, which in turn, lead to new theory.

A research team from the Massachusetts Institute for Technology (MIT) (Womack, Jones & Roos, 1990) visited more than 90 factories in 15 countries as part of a study on the automobile industry. They discovered the secret weapon that the Japanese industry throws into the fray all over the world: lean production. Lean production stands for a slender ('fat-free') organization, which works closely together with suppliers in order to leap onto client demands at any moment. Remarkably, the Japanese have not invented the term 'lean production' themselves. They have gradually, in the course of decades, developed a certain working style and the American researchers have named it. The MIT study needed a catchy label, and this became 'lean production' more or less by coincidence. The book published as a result of this study (*The machine that changed the world*) gave a great number of researchers food for thought after it had been given enormous publicity (for example: Williams & Haslan, 1992; Berggren, 1991; Dankbaar, 1994).

Box 10: Theory on the basis of application

As a final amendment, in the practice of organization research only a very small number of new applications appear to be derived from a tested theory. The reverse often happens: new theories arise out of applications. This seems to have happened, for example, in the discussions about 'lean production' (box 10). The interaction between new theory and new application is certainly a matter of serious concern. Daft and Lewin (1993) establish that managers in many organizations are at the frontier in finding new organizational forms, while mainstream research does not catch up. Their plea for more serious attention for organizational design still seems to be appropriate.

Proposition 5: *Organization research should focus more on the organizational innovations emerging in organizational practice. Organization researchers should become involved in organizational innovation processes.*

The importance of diagrams as depicted in Figure 2 is that they indicate relationships between functions relevant to the design of the knowledge enterprise. They are the beacons to which the researcher sets course when outlining a research strategy. Using these beacons, the researcher can make his or her intended or actual course explicit.

Roberts (1993) performed a small-scale survey (partly open and partly standardized interviews among managers of 22 small-sized firms) as a preparation for his main study: a comparative case analysis. His research plan was inspired by Johnson & Kaplan's provoking thesis (1987) that management accounting has lost its relevance. In the view of these writers, one of the main reasons has been that the discipline paid no attention to the rapidly changing production technology. On the basis of Kaplan's arguments, Roberts expected to find a lot of managers in high-tech production firms to be struggling with accounting problems. The explorative survey was meant as an instrument to enter into co-operation with a number of firms in different technological areas and select sites for in-depth case studies. The function of these cases was to provide a ground for the elaboration of the theoretical ideas of Johnson & Kaplan. This survey did not, however, confirm his expectations. Management accounting was not at all viewed as a pressing problem by the managers involved. Most of them were struggling with a different kind of problem: the difficulty of dealing with technological and market

changes within their traditional functionally oriented organizations. A substantial group of managers argued that they had to move towards a flow-oriented, team-based and simplified organization in order to gain better control over production processes. As a result of this finding, Roberts chose to change the focus of his study. He reformulated his basic hypothesis in the following way: "Simplification of the organization creates the possibility to resimplification of management accounting systems". The Dutch version of the sociotechnical design theory (De Sitter et al. 1997) was the theoretical source of inspiration in this regard. This proposition was confirmed in a first organizational redesign case. Two other cases served as replications. In this study the exploration worked out as an early test of theory. The researcher became convinced that the thesis of Johnson & Kaplan did not give the right entry to organizational control problems within the specific industry concerned. On the basis of the arguments of the managers the focus of the study was changed. Basically, this meant that the researcher made a jump from one knowledge development cycle to another. The case studies that followed were used to test a second theory.

Box 11: Design theory based on the design practice

The case in box 11 illustrates that the intended and actual course can be quite different. Deviation from the course can be expected when the phenomena are new and/or theory is still immature. In other words (Pettigrew 1997, p. 347), when the ambition of the researcher is "to catch reality in flight". The researcher has to bear in mind that pleasant and less pleasant surprises can be waiting at each step in his or her journey. Such conditions are quite frequent in both exploratory and action research. A clear research design is useful also in that case, perhaps not as a blueprint or 'timetable', but rather as a 'travel plan', which the researcher uses to move into an adventure. Such a travel plan probably needs to be adapted repeatedly in such a situation, because one of the routes is obstructed, a specific destination is not feasible, or because the researcher ran out of time and money. These adjustments must be made explicit continuously using sound arguments. By accurately logging the course of events in a project researchers get the chance to learn; besides fellow researchers get the chance to critically watch over their shoulder. It is assumed here that they also devote attention in their 'logbook' to failures, disappointments and unexpected obstacles. "Failure reports' could be very helpful and sometimes more important than 'success stories' or the advice of the 'normative know-betters' (methodologists)" (Grunow, 1995, p. 102).

Proposition 6: *Let organization researchers keep a logbook of their daily project work. The logbook might serve multiple purposes: as a validity and reliability check, as data for empirical methods studies, and as a record for reflection.*

Proposition 7: *The publication of inside views, especially failure cases, "professional blunders" as Blau (1964) called it should be stimulated. What about creating a Journal for Organization Research Blunders?*

Conclusions

Continuous improvement is based on process knowledge, and this is also true for organization science. In our search for richer theories, better methods and more useful outcomes, we have to accumulate

knowledge of how research is actually done. Inside views, research chronicles and professional tales are the basic material for building this process knowledge. This paper is meant to place the scaffolds for this construction work. The metaphors presented in this paper might be characteristic of the immature state of theoretical development in this field. At the present stage story telling itself might even be more important than the theoretical framework, which might result from that. Let's talk the walk. Let's tell the new generation of young researchers what research work really is.

Looking at the effects of earlier calls for open discussion of the work carried out within organization science tempers the expectations of the present author. From time to time, the discussions within the discipline seem to be more characteristic of a professional bureaucracy than of a community of practice. The straitjacket (Daft & Lewin 1990) is still there. Thus, let's heretical methods to study heretical issues in heretical contexts.

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