To the Graduate Council:

I am submitting herewith a thesis written by Jan-Willem Broekhuysen entitled "The Progress of Research in Organizational Development." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Organizational Psychology.

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THE PROGRESS OF RESEARCH IN ORGANIZATIONAL DEVELOPMENT

A Thesis

Presented for the

Master of Science

Degree

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Jan-Willem Broekhuysen

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ABSTRACT

This study is addressed to the question in which ways the acquisition of knowledge about organizational change and development can be facilitated. It is argued that, although industrial psychologists have often claimed the field of organizational change, they have not engaged in much empirical investigation on the topic. It is suggested that one of the reasons why this is so may reside in the incompatibility of the characteristics of organizational change with the scientific experimental method.

A short review of literature about developments in the philosophy of science was conducted (since some of the problems with the experimental method may be understood better by re-examining the philosophical underpinnings of this method). The purpose of the empirical study was to investigate some of the revisions in the experimental method proposed in recent literature, to increase the validity of data gathered during the research process. It was hypothesized that utilization of techniques of trustbuilding, some degree of experimenter self-disclosure, and participation in instrument design will affect the perception of the research such that it will be perceived as more useful, relevant, valid, clear, and satisfying. These hypotheses were tested in a field experiment which was combined with a survey feedback in order to approximate organizational change conditions. The 29 subjects in the study were all psychiatric technicians employed in a large psychiatric institute in Eastern Tennessee

The experimental group (n = 13) received a treatment which consisted of an oral explanation about the survey feedback and an opportunity

to change and comment on the design of the survey. Both experimental and control group received the survey and an evaluation form (the depender variable) about the survey. On the basis of the results obtained in this study, one cannot say that presence of prior knowledge of research and participation in instrument design yields perceptions of increased relevance, validity, clarity, involvement, or satisfaction with that instrument. Alternative explanations were suggested.

Some of the difficulties related to an evaluation of the experimental method by the experimental method were discussed.

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Assuming that even this is only an interpretation, then all the better. Friedrich Nietzsche

CHAPTER I

INTRODUCTION

The area of organizational change and development has often been claimed by industrial and organizational psychologists (Dunnette, 1975). Yet, few of them have engaged in systematic research to acquire knowledge about the nature and process of organizational change. They seem to be reluctant to leave the field of static comparative analysis.

One of the reasons why this is so may be the incompatibility of the object of study with the "scientific method." Industrial and organizational psychologists stress the use of the "scientific method" in their discipline. The usage of this method as characteristic for their discipline is mentioned in most textbooks: industrial psychology is defined as the application of scientific psychological methods in industrial settings (McCormick and Tiffin, 1974; Maier, 1973; Korman, 1971; Gilmer, 1966; Ghiselli and Brown, 1955). Typically, the scientific method refers to the experimental method and, less frequently, to the correlational method.

The study of organizational change, on the other hand, bears many difficulties for utilization of the experimental method:

1. In contrast to the laboratory situation, the researcher has only limited control over the change/research process, as he shares this control with the client system; moreover, the organizational environment and many unpredictable and unforeseen events exert their influence on the change process.

2. As the organizational change process is a complex and diffuse process, it is often hard to identify, isolate, and measure the crucial variables.

3. The participants in this type of research have, as any subject in psychological research, the opportunity to influence the results of the study and to incorporate the results in their behavior, after these results have been disseminated.

4. The chances that they will influence the results are great, as the participants usually have great interests in the organization where they are employed; consequently, they will have great interests in the outcomes of the study as they may affect their work situation or their future career.

5. As the acceptance of a solution (not to be confused with compliance with a solution) is sometimes of greater importance than the quality of the solution in the case of social change (Maier, 1963), some minimal degree of trust and/or involvement on the part of the client system is needed. The method of data gathering, therefore, has to be congruent with these values.

In short, the study of organizational change does not lend itself very easily to examination through the experimental method, since experimental control is difficult to attain. As a consequence, one can find many one-shot case-studies and some evaluative research in the literature, but almost no empirical theory-testing research.

The experimental method and its requirements thus present great problems for the action-oriented researcher. To neglect the field of organizational change for this reason, however, is a poor decision.

There is a high demand for applicable, relevant knowledge on this topic. It may also happen that the field will be claimed by investigators who are less concerned about the quality of scientific inquiry.

Assuming then the importance of organizational change research and given the problems with the experimental method in this field, this thesis is addressed to the question in which ways the acquisition of knowledge about the nature and process of organizational change and development can be facilitated. To indicate more precisely the problem approach adopted in this thesis, the question can be reformulated in Kuhn's terms (Kuhn, 1962) as: Does the study of organizational change require another scientific paradigm, or merely a modification in the paradigm that currently is most widely used in industrial and organizational psychology, the experimental method?*

In the literature review, the two above mentioned alternatives are examined. In Chapter II some developments in other intellectual traditions (the Critical Approach of Karl Popper and the Dialectic tradition) are reviewed. A short analysis of some developments within Logical-Empiricism, which provides most of the philosophical underpinnings of the experimental method, precedes this review. The approach of Chris Argyris is also given attention at the end of this chapter, as his arguments sometimes seem to transcend the level of revision of the experimental method.

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*It should be noted here that this question can only be dealt with in a very superficial manner, as its scope far exceeds the limits of a thesis discussion. Furthermore, it should be noted that the distinction between a new paradigm and a revision of the old one may be a matter of debate; opinions may differ as to what constitutes the essential characteristics of the old paradigm.

In Chapter III the other alternative to the question is considered: What are some of the modifications that have been proposed in the experimental method which may help to overcome the problems with it in the study of organizational change? Here the techniques of mutual self-disclosure, trustbuilding and participation of subjects in design of research are reviewed.

The question about a possibly better paradigm for organizational change research cannot be examined by the standards and methods of one of the paradigms concerned. The empirical study reported in this thesis thus tests hypotheses derived from modification proposals mentioned in chapter III. The main hypothesis is that some degree of self-disclosure on the part of the experimenter, some knowledge about the purpose of the study, and a moderate degree of participation in instrument design will lead to higher perceived relevance and validity of the data gathered in a survey feedback process.

Chapter IV gives the description of a field experiment, designed to test this hypothesis, and Chapter V shows the results.

The study is evaluated in Chapter VI, where some of the difficulties related to an evaluation of the experimental method by the experimental method are discussed.

CHAPTER II

DEVELOPMENTS IN THE PHILOSOPHY OF SCIENCE

In this chapter three intellectual traditions are discussed. It was pointed out in the introduction that industrial and organizational psychologists stress the use of the experimental method. The philosophical underpinnings of this method reside in Logical-Empiricism. In 1. DEVELOPMENTS WITHIN LOGICAL-EMPIRICISM, the argument is considered that psychologists, as users of the program of Logical-Empiricism, have failed to adjust their methodology to changes within the tradition of Logical-Empiricism. In 2. DEVELOPMENTS OUTSIDE OF LOGICAL-EMPIRICISM (1): THE CRITICAL APPROACH and 3. DEVELOPMENTS OUTSIDE OF LOGICAL-EMPIRICISM (2): THE DIALECTIC TRADITION, the Critical Approach of Karl Popper and the Dialectic tradition are discussed. Some of their perspectives which may be fruitful for the study of organizational change are briefly reported. The chapter ends with an appraisal of Argyris' writings, which are most directly relevant to the study of organizational change.

1. DEVELOPMENTS WITHIN LOGICAL-EMPIRICISM

Radnitzky (1973) points out that the way science grows is to a considerable extent determined by intellectual traditions. After an initial fight to gain recognition, any tradition tends to become stabilized. These traditions then play an enormous role in that they regulate what problems are dealt with, in what manner, etc. They establish a routine, thereby saving efforts and energy that may be used for

possibly innovations.

Criteria for evaluation of what is acceptable output for its members are provided by prior dominant work in the tradition. Moreover, a process of enculturation occurs. The tradition becomes institutionalized in educational systems, where the criteria for evaluation are tied to the academic sanction system. Internalization of these criteria by the carriers of the tradition is favored.

As far as the tradition of Logical-Empiricism is concerned, Radnitzky states that the primary goal in the program of Logical-Empiricism is to articulate an ideal of science for the natural and behavioral sciences.[1] He describes this ideal of science as monistic, reductionistic, and physicalistic. It is monistic in so far as it prescribes that all scientific disciplines should form a part of one basic unified science. As physics approaches the ideal of science most closely, there is a desire to reduce all other disciplines to physics (physicalism) by making a language that had been designed for an idealized physical science, the common language of all "science-like" disciplines. Finally, this ideal can be labeled reductionistic as it makes physical concepts the fundamental concepts of the unified science.

About the logical empiricists as producers of knowledge, Radnitzky writes elsewhere: " . . . logical empiricists are cautious; they try to eliminate errors before making them. They are method-centered: they fix themselves to methods that give prestige and are assumed to be safe, and they even go so far as to let the methods decide which problems they will deal with. The only 'respectable' tends, sure enough, to be the

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[1]The program is inferred from the deeds of practicing logical empiricists.

problems to which they can apply their own methods (Radnitzky, 1973, p. 189)."

(In Industrial Psychology Argyris (1975) recently mentioned this fact: "The major methodological strategy becomes measurement . . . . Guion (1965, p. 5) suggests that this set remains predominant in the thinking processes of industrial psychologists. They tend to ignore phenomena that are not quantifiable.")

In his paper, "Psychology and Emerging Conceptions of Knowledge as Unitary," Koch (1964) states that psychology has long been hindered in its development by inadequate conceptions of the nature of knowledge. In classical behaviorism an attempt was made to overcome the problems facing subjectivist psychologies by insisting on objective techniques for data gathering and rejection of all subjective approaches. Neo-behaviorism continued the search for objectivity by trying to realize objectivism at the level of theory. Koch notes that psychology seems to have been attracted by the authority of the ideas which were formulated in logical positivism, neopragmatism, and operationism rather than their content. It was in the late 1930's that the logical-positivist model of science was explicitly taken as regulative. Although in neo-neobehaviorism, a "liberalization" took place, Koch notes that behaviorism did not lose its identifying characteristics (Koch, 1964, pp. 7-20). He remarks that psychology now has dropped behind in comparison to the philosophy of science as far as the developments in epistemology are concerned. The view of science which is still regulating research practice in psychology is overtaken by the acknowledgment of the many subjective moments in inquiry. Some former positivists

(e.g., Carnap and Feigl) have reviewed their position and have argued for a "re-legitimization of introspection." The distinction between "context of discovery" and "context of justification" shows to be unsupportable, as justification may depend, as much as discovery, upon "extra-rule-determined processes" (Koch, pp. 21-22).

The questions that are being raised about the distinction between "context of discovery" and "context of justification," and the possibility of a strict separation between theoretical or system language and observation language, are important for the argument of this thesis. The logical positivists had accepted Kant's division in analytic judgments and synthetic judgments, with the exception that they only accepted synthetic judgments a posteriori.

The analytic judgments are true by definition, while the synthetic judgments a posteriori are truly empirical statements. An empirical theory was conceived to be built of empirical and logical components. While a system language was developed by Carnap for the processing of observational data on the theoretical level, which had a logical structure, little attention had been given to the language which had to describe the factual. (Later a theoretical language was being postulated, which was thought of to be connected with the observation language by correspondence-rules.)

In the newer developments one became interested in this separation and in the supposed self-evidence of the factual: "establishing facts" had been a process in which the context of the factual had not been taken into account. Scientific facts, however, are theory laden. What makes up the factual for a science is codetermined by an implicit or explicit

convention about the way one will look at the reality.

Koch acknowledged this problem when he wrote that really understanding the definition of a scientific concept

> . . . must result in a process of perceptual learning, and what is learned is the discrimination of the properties, relations or system thereof that the definer wishes to designate by the term. This clearly means that definition, at the bottom is a perceptual training process . . . .
> (Koch, 1964, p. 26)

Accepting this statement means refusing the idea of an absolute science. Koch suggests as a solution for psychology the formation of a number of psychological language communities, with their own specialities and training in discrimination.

2. DEVELOPMENTS OUTSIDE OF LOGICAL-EMPIRICISM

(1): THE CRITICAL APPROACH

Kray describes how in the past years a change has taken place with regard to the idea of "justification of knowledge" towards an alternative of the "progress of knowledge" (Kray, 1972). According to Kray, philosophers over the past centuries have occupied themselves with the question: "On what is scientific knowledge based?" Early philosophers proceeded by taking one entity as <u>the</u> basis of all knowledge. For instance, the classical empiricists took sensations or perceptions; Hegel started with the Absolute; Marx and Lenin considered practice as fundamental; the "Wiener Kreis" dealt with "Protokoll Sätze"; and for the linguisticists, it was the daily language. These philosophers then indicated how problematic knowledge could be reduced to the unproblematic basis that they had chosen. In other words, they developed a "justification procedure" for the reduction of the problematic to the unproblematic.

The problem, however, with this procedure of "justification of knowledge" is that it is unclear why the fundamental basis, that had been claimed to be unproblematic, did not need justification. Science has developed along capricious patterns, and it certainly did not take the form of a gradual, step-by-step accumulation of knowledge. It would, therefore, be realistic for the scientist to acknowledge the strange course that science takes and conceive science as a relative matter, as a continuous attempt to acquire knowledge. Theories that are formulated would be merely proposals, which can always be criticized and improved. It was Sir Karl R. Popper who formulated the "Critical Approach," and it caused a spectacular turnabout in epistemology. It is true that logical-empiricists have claimed that Popper belonged basically to their tradition (seeing his falsifiability criteria as contribution to the discussion of empirical significance). Yet, Popper must not be seen as a logical-empiricist (Radnitzky, 1973, p. 104).

It is also true that according to Popper, science is characterized by the fact that its theories are empirically criticizable. Empirical criticizability can thus be used for demarcation purposes to distinguish true science from pseudo-science. There appears, however, to be a certain ambivalence with respect to the use of empirical criticizability for demarcation purposes. J. Agassi, e.g., has criticized this practice (Agassi, 1964) and Radnitzky emphasizes that the theme of testability-falsifiability belongs primarily to the context of hypothesis checking (Radnitzky, 1973, p. 116).

What then is the difference in the tasks of Logical-Empiricism as opposed to Popper's? Where Logical-Empiricism is interested in

spelling out an ideal of science, Popper is interested in the growth of knowledge through the combination of criticism and fallibilism. Popper emphasizes the historical dimension. Instead of focusing on science-as-a-product, science is being seen as an ongoing enterprise. (Logical-Empiricism takes a perspective which views the products of research as finished and in isolation from the production process.) Instead of being method-centered, Popper will advocate task-orientedness, with attendance to the troubles and needs of the active researcher.

About Popper's epistemological ground plan, Radnitzky writes: "'Final knowledge' is a chimera: all knowledge is provisional; a hypothesis is provisionally admitted to the body of knowledge as long as it has not been falsified," and about the hypothesis checking: "Popper and his followers recognize that checking hypotheses with respect to credibility involves decision making at all sort of junctures . . ." (Radnitzky, 1973, p. 106).

3. DEVELOPMENTS OUTSIDE OF LOGICAL-EMPIRICISM (2): THE DIALECTIC TRADITION

An intellectual tradition which had, and still has, its major infuence in Europe is the Dialectic tradition. Especially in Germany and France, but also in other countries, sociologists and political scientists have combined practicing their discipline with philosophizing about science, its objectives, the relationship between theory and practice, the role of value judgments in the social sciences, and the desirability of relevant research for the emancipation of individual and society.

An important difference between the Dialectic tradition and Logical-Empiricism is that the latter strives for one unified science, whereas it is believed in the former that the object of the human sciences is so different from that of the natural sciences that a distinction has to be made between these two groups of sciences on the basis of their object of study. The object of the human sciences is self-interpreting. Knowledge of results of any research will have its effects upon its object. One has to be aware that the object can (in principle at least) enter into a dialogue with the researcher, it can incorporate the information provided, and it can modify its behavior on the basis of that knowledge. Though it cannot eliminate the "objective" results of the study, it can make them ambiguous, it can deny them, it can enervate them in its acting (Radnitzky, 1973; Nauta, 1975).

The psycho-analytic dialogue can be seen as a typical illustration of the relationship between researcher and object. In the field of organizational change, one can think of the action-research model, where there is continuous interaction between researcher/consultant and the client-system for the explicit purpose of problem solving and "developing" through cycles of feedback.

A major school within the Dialectic tradition is the Frankfurter Schule, also called the Neo-Marxistic tradition. Its most important members are Th. Adorno, J. Habermas, M. Horkheimer, and H. Marcuse. The Frankfurter Schule has emphasized the fact that the researcher, while doing his research, is always part of the objective context that he is investigating; i.e., he is part of the society that constitutes his object. The social phenomena that he is investigating can, therefore,

never be seen in an objective manner, since they derive their meaning from the context of which he is also a part. Consequently, every theory in the human sciences points to a certain conception of society as a whole, implicitly or explicitly.

In Logical-Empiricism the conceptions which underlie a theory are never explicitly mentioned: human society is seen as a neutral entity, like nature. No questions are being raised as to what the character of these conceptions is. Scientists here then tend to neglect the relationship that exists between their research process and the social and the historical context. (For an example, see Lewicki and Alderfer's research, Chapter 3.) It is often pretended that their way of knowledge gathering will increase the amount of neutral and "objective" knowledge, which would be the goal of science.

In short, without doing justice to the elaborate writings of the proponents of the Frankfurter Schule, one might say that the importance of the school resides in its emphasis on the political dimension of the scientific enterprise. By acknowledging the fact that the human sciences can never be value-free, they could raise questions about <u>which</u> values, and, more important, <u>whose</u> values were being pursued in the research process.

The influence of the Frankfurter Schule became especially noticeable during and after the wave of revolutionary movements in Europe in 1968 and 1969. Student movements in particular placed their criticism on society in general, university education and research often in the frame work which the Frankfurter Schule provided. According to Zwart, there was in almost every country a strong demand for more "democratization

more opportunity for participation and power equalization in management of industry and universities. Conflict, in the form of for example occupations and strikes, was more widely acknowledged as a change strategy. The socio-cultural climate could be characterized by a severe dissatisfaction of many people with the functioning of human society, by a very great intensity that various groups showed in their efforts to realize their ideals and finally by the extreme nature of the various ideological goals that were pursued (Zwart, 1972).

One cannot say that the situation has completely changed in 1976. De Wolff and Shimmin (1976) note that "the changing philosophical and ideological climate, which is critical of the traditional pattern of authority and control" has created a difficult position for management." Psychologists have become aware of a "conflict of loyalties" as they often have a strong emotional identification with the group of underprivileged and as they are dependent at the same time on support of their employer.

According to the authors, this has led to an "identity crisis" experienced by many industrial psychologists. They observe that psychologists have chosen different ways of dealing with this crisis, for example, "by retreating into the academic environment and traditional experimental research, by adopting a humanistic rather than a scientific approach, or by identifying with their function as a change agent . . ." (De Wolff and Shimmin, p. 184).

In the Netherlands some scientists have chosen another solution to the crisis mentioned above. While conceiving science as primarily a tool in helping relationships, they have tried to found a new scientific

discipline, known as "agologie"; its scientific foundations have been greatly influenced by the Dialectic tradition, and, in particular, the more radical group of "agologen" has been inspired by the Frankfurter Schule. The normative-ethical dimension of intervening, helping, and changing has been given considerable attention, but the problems with acquiring knowledge have attracted less interest. Although many publications exist about the sociology of the research process, the "broader context" of social research, and criticism on the Logical-Empiricist paradigm is quite convincing, not much effort has been exerted to arrive at a satisfying solution of the epistemological problem (De Zeeuw, 1976). For this reason it has been stated by Nauta that the new discipline has more the character of a legitimization of an approach, than that it has really proven to be a new science (Nauta, 1975).

4. THE APPROACH OF CHRIS ARGYRIS

Although to the author's knowledge, Argyris has never explicitly published on the philosophy of science for psychology, some of his writings are considered in this chapter. The reason is that occasionally he has used arguments of a philosophical nature when discussing scientific, "rigorous" methods. He seems to occupy an "in-between" position as far as the philosophical schools mentioned before are concerned.

As a matter of fact, his position is not quite clear to the author. His arguments include a wide range--from functionalistic (when he advocates organic research to overcome the shortcomings of rigorous research) to rather ethical (when he attacks the status quo maintaining role of behavioral science research, or the dangers in applying the results

from social psychology)--and he develops his views rather quickly. Moreover, he has never wanted to contribute to a polarization between research- and action-oriented scientists, and he has argued for a conceptual integration between industrial and organizational psychology (Argyris, 1970, p. 89; 1975b, p. 181).

In the past 8 years Argyris has published a great deal on the problems of relating theory to effective action. As to why there is so little relevant and systematic research in the area of planned organizational change, a number of reasons has been mentioned by him: a separation of understanding and improving organizations, the conceptions of rigorous research which may inhibit the generation of valid information, and the fact that academic behavioral sciences may attract people whose personalities, values, and interpersonal skills would not lead toward conducting research that is both applicable and applied.

As far as the problems of rigorous research are concerned, Argyris has taken a complicated viewpoint. On the one hand he argues for field experiments:

> The point being made so far is that studies of change created and managed by the researcher represent one of the most rigorous tests for a theory and provide guideposts of what needs to be included in a theory if it is to be relatively complete and applicable. (Argyris, 1972, p. 86)

He had expressed his preference for such an approach before (Argyris, 1970, p. vi). Besides, Argyris clearly has shown to accept empirical proof as the final judgment over a theory, e.g.:

> . . . the argument is not being made that a more "personality-based" organization is necessarily more effective. It remains for empirical research to confirm or disconfirm this hypothesis. (Argyris, 1972, p. 90)

On the other hand, Argyris has proposed "organic research" as an alternative for rigorous research methods, in which power sharing, or at least a large degree of involvement of the subjects in research, appears to be a main feature:

> The subjects participate in defining goals, . . . participation is encouraged in terms of instrument design, research methods, and change strategy . . . . (Argyris, pp. 104-105)

Also, he is aware of the normativity in the scientist's viewpoints, mentioning a responsibility that behavioral scientists have to make explicit the fact that their theories may express a view of the nature of man that has neither received empirical confirmation nor has ever been declared unchangeable (Argyris, 1972). Later (1975a), he has stated that social scientists give information on how it really is and then proceed by implicitly stating that "what is" is "what ought to be." Consequently, he has suggested that

> . . . behavioral scientists should consider the responsibilities of conducting descriptive, rigorous research about the world as it might be. (Argyris, 1972, p. 103)

But, he sees the dangers of such a task when he writes a few pages later:

> The difficulty with this approach is that scholarship based upon personal preferences can easily become an ideology. (Argyris, 1972, p. 107)

(In the dialectic tradition, scientists recognize this necessarily always present subjective part in science and thus see their main tool of the critical human sciences as "criticism of ideologies.")

Yet, Argyris and Schon (1974) have taken the road of "conducting research about a world as it might be." Differentiating between theories-in-use and espoused theories of action, they developed two conceptual models, Model I and Model II. The first model describes a very

common theory-in-use, whose underlying strategy is control over others. The second model is an attempt to make operational some values that are frequently espoused but seldom realized. The criterion variable in both models is somewhat vaguely described as effectiveness.

The governing variables for action in Model I are: " . . . define goals and try to achieve them, maximize winning and minimize losing, minimize eliciting negative feelings and be rational." They remind the reader of the values that Argyris had discussed previously (1964, 1970) in the context of organizational entropy. The major variables in Model II are: " . . . maximize valid information, maximize free and informed choice and maximize internal commitment to decisions made" (indeed, the primary tasks for the interventionist) (Argyris, 1970).

Argyris and Schon formulated a research design that approximated Model II. The research design would not be unilaterally controlled by the researchers. The subjects would not be asked to cooperate primarily to accumulate knowledge about human behavior. The instruments would be designed as to be of help for the subjects for implementing their learning experiences. The hypotheses would be openly stated to the subjects.

The writers then describe the transition from Model I to Model II for a group of 195 participants. They also illustrate their research design by giving a great number of cases in which their hypotheses were confirmed. Their instrumentation consisted mainly of tape recordings and case descriptions by the participants. But, there are some problems related to their research approach. Possibly, the problem of obvious unilateral power has been overcome by their methods. There is, however, a more fundamental problem that does not seem to have been solved by

their methods, and it is the question whether it can be solved. Argyris describes the problem as follows: "One must treat his theory-in-use as both a psychological certainty and an intellectual hypothesis (Argyris and Schon, p. 27).

The paradoxical situation that is created is recognized:

> An interventionist is a man struggling to make his model of man come true. In an unstable and uncertain world that nevertheless demands action he puts a normative template on reality. All the more paradoxical, then, the demand that theories-in-use be treated as hypotheses. (Argyris and Schon, 1974, p. 28)

The question here is whether the psychological condition that is pictured is a real possibility. Watzlawick has stated that one cannot not communicate (Watzlawick, et al., 1967). One is always communicating in some way. Of course, Argyris avoids the typical experimental situation in which the researcher solves the problem of his manipulating by believing that he has given the subject a real free choice. The problem remains whether Argyris is not also--as a human being necessarily--manipulative, a problem that perhaps is more concealed as his experimental situation is a school, a place where a difference in power is inherently given. Although they show how they deal in the initial relationship with that difference in expert power, they do not show what kind of consequences that actually has on their concept of "theory-in-use as a hypothesis." Repeatedly they say what their Model II is not, but not what it is (Argyris and Schon, 1974, p. 92 and p. 10).

Perhaps one can restate the problem as follows: the issue at stake is not unilateral versus mutual power, but the way in which that power is exercised. The ideas of education and change are built on power (power to lead people to awareness) and a way of dealing with it may be

to accept it and discuss it. To attempt to deny one's power by treating one's theory-in-use as a hypothesis may be a little hypocritical or indeed impossible.

CHAPTER III

MODIFICATIONS IN THE EXPERIMENTAL METHOD

1. SOME PROBLEMS

In the introduction a number of problems were already mentioned with regard to the use of the experimental method in organizational change research. The problems revolving around the experimental method have received a great deal of attention in recent years. Psychologists have become interested in the research process itself, i.e., the ways in which the information is gained and the assumptions underlying these processes.

In social psychology, Gadlin and Ingle (1975) note that three areas are of major concern: the ethics of experimentation, and the application of scientific knowledge are being questioned; the limits of experimentally derived knowledge form a third problem. Moreover, the relative meaningfulness of social-psychological findings, since often closely related to the social and the historical situation of the moment, has attracted attention; proposals have been formulated for a history or a sociology of social psychology (Gergen, 1973; Buss, 1975).

It seems that in industrial and organizational psychology the limitations of the experimental method have been given less attention. This is somewhat surprising, considering the importance of the implications; as Schultz (1969) remarks: "If our source of data is open to question then surely one can legitimately question the validity of that data," and Gadlin and Ingle (1975) write that "questions about the

validity of knowledge that comes from experimentation strike at the core of scientific activity."

Argyris (1968, 1970), however, has pointed out a number of "unintended consequences of rigorous research" which may have severe effects on the validity of data gathered in organizations. His argument can be summarized as follows:

By conceiving rigorous scientific methodology as rather similar to the practices of scientific management, it can be argued that the same consequences for subjects apply (as for employees). The typical situation for the subject (employee) can be described as one in which he is dependent upon the researcher (the boss), in which he feels being pushed around and controlled, since he has little or no power over the situation, and he does not know what will happen to him or to the information he had to provide. Moreover, his feeling of anxiety and threat may be increased as he is placed in the double bind of being asked "to be open" and "to answer freely," while at the same time, he is working in a system that previously has reinforced closedness and obeiscance.

As the unintended consequences of this type of research, Argyris lists among others: physical or psychological withdrawal, overt or covert hostility, and emphasis on monetary rewards.

It would be too simplistic, however, to hypothesize that there exists a direct, causal relationship between the research methods used and the occurrence of the unintended consequences. Argyris suggests that the degree to which the unintended consequences occur will depend upon:

1. The degree to which being dependent and manipulated is natural

in the lives of the subjects.

2. The length of time that the researcher takes and the degree of control his research requires.

3. The involvement it requires of the subjects.

4. The motivations of the subjects (e.g., for the sake of science, on request of the employer, or for money).

5. The number of times the subject participated in other research.

6. The possible effect participation in research (or its results) could have on the subject's evaluation of his previous life and perception of his future life.

7. The degree to which the research situation is similar to other situations in the subject's life and about which he has strong feelings (Argyris, 1970, pp. 94-95).

Another problem in field research is reported by Lewicki and Alderfer (1973). In contrast to the situation Argyris described, the subjects in their project were managers and union leaders who could easily express themselves on their views of the research, and did so. The authors report an unsuccessful attempt to remove the barriers of mistrust in a study of labor-management relationships. Instead of power-bargaining and legal-justice mechanisms, they chose applied behavioral science techniques to change the character of the relationship between labor and management groups, which for many years had been "bitter and mistrustful." They proposed to both parties a behavioral science examination of the interpersonal and intergroup relations within management, the union, and between union and management. Data would serve the purposes of allowing the researchers to test some hypotheses on

interrelations, and providing the company and the union with feedback about their relations.

In the analysis of their failure, the writers note that they had problems with neutrality: "In spite of our continuous attempts to portray ourselves as the neutral third party, the union persisted in perceiving us as company spies" (Lewicki and Alderfer, 1972, p. 442). Understandably, there were severe difficulties with trust building. Frank Friedlander's comments on their report are of interest in the context of this thesis. He conceptualizes the union-management-researcher relationship as a bargaining triangle, instead of a dual relationship with a "peace-making" third party.

He continues to say that a research process is essentially a set of developing relationships, which are influenced by the needs and perceptions of all people involved. The determination of who is subject and who is researcher is arbitrary, for that depends on one's point of view. Friedlander suggests as a solution that research, if it is meant to be of help in the change process, should follow and emerge from the change agent role. When there is no agreement among parties that research is helpful, that research may become the private agenda of the researcher, which will make him a negotiator for his own cause, too (Friedlander, 1973).

2. SOME SOLUTIONS

In experimental and social psychology, several solutions have been formulated for the problems with the experimental method. Brown (1965) and Kelman (1967) have suggested role playing of the experimental task as

a method to avoid deceiving of subjects and to create involvement and more positive attitudes toward the experiment. Unobtrusive measurement is another well-known solution (Webb, et al., 1966). Fromkin and Streufert (1975) mention the use of post-experimental inquiries to determine how much the subject was responding to the real purposes of the research. Jourard (1968) has suggested a procedure of mutual self-disclosure between the experimenter and the subject. Instead of the impersonal and distrustful relationship that can often be found during the research, a greater openness and mutual knowing in the relationship is proposed. Some of these solutions have also been proposed and applied in industrial and organizational psychology. Here, two groups of solutions will be distinguished.

Procedures of Mutual Self-Disclosure and Trustbuilding

Alderfer (1968) conducted a study on the influence of interviewing just prior to questionnaire responding. Assuming that if a researcher wants valid data, he should be perceived as trustworthy and accessible to observation, Alderfer held open interviews with respondents before asking them to complete a questionnaire.

This open interview would serve a number of functions:

1. The respondent would become familiar with the topics of the study.

2. He would be able to answer the questions in his own terms, rather than be forced into fixed-alternative answers on the questionnaire.

3. He would be able to ask the researcher questions without being observed by other members of the organization.

4. He would have considerable time to "size up" the investigator and to test his trustworthiness.

Alderfer hypothesized that increased trust on the part of the respondent would lead to more negative answers on the questionnaire on interpersonal issues as the information that people would withhold, due to lack of trust, would be the negative aspects.

He found that more negative data were provided about satisfaction with peer relationships by those who were interviewed than by those who were not. No difference was found in the data about satisfaction with superiors under the two conditions.

Alderfer and Brown (1972) have noted that there exist several ways to reduce the methodological artefacts connected with responses to obtrusive measurement. Besides seeking greater experimental control, trying to measure as unobtrusive as possible, one could attempt to establish a relationship with the respondents such that it would be beneficial to them and that, therefore, would not be subverted by them.

In their study, Alderfer and Brown found support for their hypothesis that trust can be earned by demonstrating some awareness and acceptance of the respondent's life dilemmas.

Schein (1969) also stresses mutuality in the research process, but he approaches the matter from a more normative viewpoint: how one should generate valid information. He states that the consultant should avoid the image of a psychologist wandering around the plant making observations about anything that strikes him as needing attention. Instead, "the consultant should engage in a focused process of observation and feedback where both participant and observer have agreed to inquire into

the interpersonal processes for the sake of improving it" (Schein, 1969, p. 89). He continues to say that if the consultant uses questionnaires, the respondent cannot answer the questions really honestly, as he does not know whether he can trust the consultant. Schein recommends to start consultation with interviewing, for both the purposes of revealing himself to the client and to learn something about the client. Later, when the organization knows him enough to judge his trustworthiness, surveys can be used.

Friedlander (1968) found in a comparative study of three different organization development processes that the success of the programs was more dependent upon the fact whether there were pre and post laboratory activities than upon variation in the laboratory format. Furthermore, he found that the utilization of an internal consulting group facilitated data gathering. He explained these results with the increased experiental knowledge that was derived from the pre and post laboratory activities and the internal consulting group. This greater knowledge on its turn would lead to greater trust and involvement on the part of the client (Cf. Alderfer and Brown, 1972), thereby increasing the potential impact of the laboratory, whereas the consultant was better able to design the intervention according to the stage of development and the needs of the client.

Participation of Subjects in Aspects of Research Design

There does not seem to exist a lot of research on participation as a means to increase validity of data. In industrial and organizational psychology, participation is usually mentioned in the context of

leadership. Campbell, et al., (1970) define participation for example as "subordinate influence in decision making." Participation has typically been related in empirical research to productivity, and this relationship has often found to be positive (e.g., Lewin, Lippitt and White, 1939; Coch and French, 1948; Morse and Reimer, 1956; French, Israel and Ås, 1960; Vroom, 1959). The studies have pointed out the existence of some important intervening variables: individual differences, kinds of tasks being performed, and the perceived legitimacy to participate.

One similarity between participation in the context of leadership and in the context of research design lies in the fact that in both cases participation is manipulated to achieve some other goal (productivity, validity of data). Similarities in the effects of participation may exist, but little research has been done on participation in research context.

Friedman and Cornelius (1976) investigated the effect of participation in scale construction on some psychometric characteristics of the rating scale, and rater perceptions regarding the use of the scale. The results showed that the treatment groups did not significantly differ in their perceptions regarding scale use. Participation in scale construction did lead to increased convergent validity and less halo, though the discriminant validity was not affected. The authors note that the psychological processes underlying participation cannot be ascertained from the data. They suggest that better understanding of the job is one possible explanation for the participation effect. Other explanations include expectancy theory (participation may affect expectancies, valences

or instrumentalities with respect to scale use), cognitive dissonance theory (participation increases perception of value), or mechanisms working in participative decision making, as participation is believed to lead to greater acceptance and commitment to group decisions. It was already mentioned in 4. THE APPROACH OF CHRIS ARGYRIS, p. 15, that Argyris introduced the concept of "Organic Research" (Argyris, 1970). It constitutes essentially an attempt to overcome the negative side effects of the experimental method (see 1. SOME PROBLEMS, p. 21). The most important modification seems to be the degree of involvement or participation of subjects in design of research. The thrust of Organic Research would be that it minimizes as much as possible the feelings of dependence and submissiveness and to provide opportunities for experiencing feelings of psychological success, essentiality, and trust, and for making group relations more effective. Argyris rejects the suggestion that participation would lead to contamination; he points out that ambiguity regarding the nature of research as in the case of the experimental method does not place the subject in a neutral situation with a neutral psychological set, so contamination occurs in any way. The point being made is to what extent this contamination can be regulated. Unfortunately, there is not much empirical proof to support Argyris' notions.

3. HYPOTHESES

It has been pointed out in the introduction that the question about a possibly better paradigm for the study of organizational change research cannot be investigated by the standards and means of a paradigm

involved. The choice of a paradigm is a prescientific matter, which will not be discussed here. Thus, the hypotheses for the empirical study have been formulated on the basis of literature which deals with modifications in the experimental method, and which is mentioned in this chapter.

In summary, it is hypothesized that utilization of techniques of trustbuilding, some degree of experimenter self-disclosure, and participation in instrument design will affect the perception of the research such that it will be perceived as more useful, relevant, valid, clear, and satisfying. To state these hypotheses more precisely: If employees in an organization are divided in two groups, where only one group has knowledge about the purpose of the study, has met personally with the researcher, and, moreover, has received an opportunity to participate in the design by choosing the instrument to be used and by modifying the instrument according to their views, to ask questions, and criticize, then the following hypotheses can be formulated:

1. The group with knowledge about the study and the participation opportunities will perceive the instrument as clearer, easier to understand, and more complete than the group who does not have these facilities. (This hypothesis is tested by means of items 1 and 4 of the evaluation form, Appendix C.)

2. The first group will perceive the instrument as covering more aspects of their work environment, as more useful and relevant (items 2, 8, and 9, Appendix C) than the second group.

3. The first group will perceive the validity of the instrument as higher than the second group (items 5, 6, and 7, Appendix C).

4. The first group will be more satisfied with the questionnaire approach than the second group (item 10, Appendix C).

5. The first group will be more personally involved while answering the instrument than the second group (item 3, Appendix C; responsiveness as operationalized by number of missing data, number of comments, and number of words on open-end questions).

6. The first group will answer the instrument itself in a more negative way as it will withhold negative information to a lesser extent than the second group.

These hypotheses are derived from the combination of empirical findings, which were mentioned above, with exception of hypothesis number 6 which is directly derived from Alderfer's study (1968). Argyris' concept of "Organic Research" (1970), however, has had major influence.

CHAPTER IV

A FIELD EXPERIMENT

The most interesting test of the hypotheses, derived from the literature review, would have been in the context of an ongoing organizational change project. As this was not available at the time of investigation, an attempt was made to approach organizational change conditions. The conditions would include for example that the research had to be of some immediate interest to the participants and which at least in principle could be useful to them. For this reason a format was created in which a survey feedback (i.e., an evaluation of a treatment environment in a psychiatric institute) and a field experiment would take place at the same time.

1. PROCEDURE

The experimental design approximates a static-group comparison (Campbell and Stanley, 1966). See Figure 4.1 below.

Experimental Group	X_1	X_2	O_1
Control Group		X_2	O_1

Figure 4.1. Static group comparison.

The experimental group received a treatment (X_1; independent variable) which consisted of an oral explanation about the survey feedback and an opportunity to change and comment on the design of the survey. Both experimental and control group received the survey (X_2) and an evaluation

form about the survey (O_1; dependent variable). The groups were not randomly selected, as can be seen in the figure.

Experimental Setting and Subjects

The survey feedback and the field experiment took place in a department of a large psychiatric institute in Eastern Tennessee. The department is divided over five bungalows ("cottages") separated by distances. Treatment is here provided to patients who are about to leave the hospital. The treatment program is partly based upon the "small group ward" philosophy (Fairweather, 1964, 1969). The 29 subjects in the study were all psychiatric technicians. Table 4.1 shows some demographic data of the participating staff in each cottage. Statistically significant differences existed between the staffs of the cottages with regard to age, level of last completed education, and number of years of employment in the institute. The psychiatric technicians are responsible for all daily treatment: they schedule patient activities, administer medication, keep the records, etc. Next to the psychiatric technicians, the program staff consists of nurses, social workers, psychologists, and physicians. The psychiatric technicians work in a three-shift schedule, while the professional staff is only present during the day.

Experimental and Control Group

The experimental group (n = 13) was formed by three subgroups: the day and partial evening shifts of three of the cottages. All other staff belonged to the control group (n = 16). The groups were thus not randomly selected but were existing work groups. Table 4.2 shows the distribution of the psychiatric technicians over experimental and

TABLE 4.1

DEMOGRAPHIC DATA OF THE STAFF OF THE FIVE PARTICIPATING COTTAGES

		Cottage Number					
n = 29		1 (n = 6)	2 (n = 6)	3 (n = 7)	4 (n = 5)	5 (n = 5)	df F-ratio
Length of employment in the institute[a]	M	3.33	5.0	4.43	4.4	2.4[b]	4,24
	Sd	1.63	0	0.79	1.34	0.89	5.141**
Age[a]	M	6.5	7.33	5.86	5.25	3.20	4,23
	Sd	1.87	1.21	2.73	2.75	1.64	2.897*
Level of last completed education[a]	M	4.0	3.5	3.14	4.0	5.8	4,24
	Sd	0.63	1.22	1.35	1.41	1.10	4.134**

**p < .01

*p < .05

[a]Categories are given in Appendix C.

[b]Values underlined by a common line do not differ from each other at the .05 level as determined by a Student-Newman-Keuls (Winer, 1971) procedure.

TABLE 4.2

DISTRIBUTION OF STAFF OVER EXPERIMENTAL AND CONTROL GROUP

Cottage No.	Experimental Group	Control Group
1	-	6
2	4	2
3	5	2
4	-	5
5	4	1
	n = 29 n = 13	n = 16

control group. Table 4.3 gives some demographic data on the composition of experimental and control group. There were no statistical significant differences between the two groups with regard to age, last completed education, or length of employment. The research was introduced by the professional staff, as far as the experimental group was concerned, during a staff meeting. The control group did not hear anything about the research from the professional staff, on request of the researcher. When the survey was ready for administering, the control group was told to fill out the survey and the evaluation form. Their instruction consisted solely of the written instruction on the first page of the survey.

Experimental Condition

Prior to the administering of the climate scale and the evaluation form, the three experimental subgroups each had one meeting with the researcher, which, on the average, lasted 35 minutes. The meetings were tape recorded with consent of the participants. The meetings took place in the respective cottages, at the moment that the day shift finished working, and the evening shift was about to begin.

In the meetings the following topics were discussed, the first part according to a more or less standardized format, the last part in an open format (see Appendix A).

1. The subjects received an oral explanation from the researcher about the double purpose of the study.

2. The researcher outlined the research procedure to be followed, the feedback format, and the precautions with regard to anonymity and confidentiality.

TABLE 4.3

DEMOGRAPHIC DATA OF THE EXPERIMENTAL AND THE CONTROL GROUP

	M	Sd	df	F-ratio
Number of years worked in the institute[a]				
Experimental Group	3.92	1.26	1,27	0.023
Control Group	4.00	1.46		
Age				
Experimental Group	5.15	2.61	1,26	1.529
Control Group	6.27	2.15		
Education				
Experimental Group	3.92	1.85	1,27	0.067
Control Group	4.06	1.00		

[a]Categories are given in Appendix C.

3. The subjects were then shown two ward atmosphere scales which, to the opinion of the researcher, could both be used for the survey feedback, and they were asked to indicate which one "fitted" their situation better.

4. Moreover, they were encouraged to comment and criticize the questionnaires, and they were told that they were free to add or to delete items, so that the questionnaire would become "better suited."

5. The researcher pointed out that he hoped that participation in instrument design would increase the value and relevancy for the participants.

6. He also told them he would meet (or had met) with two other cottage staffs and that he would design the final questionnaire alone but according to their suggestions, the possible necessity was pointed out of compromising between conflicting suggestions.

7. At the end of the meeting, the researcher thanked everybody for the cooperation, and he mentioned that he was available for further questions or suggestions; address and phone number were left at the secretary's office.

Besides an explanation on the purpose and procedure of the study, the meetings provided subjects and researcher the opportunity to learn to know each other, and they could test each other's trustworthiness. The rationale behind the meetings was an attempt to create a "dialogue" situation, with at least in principle, the possibility of participation in instrument design (of course, only as far as the survey was concerned). The fact that there would be a survey was also a given for the cottage staff.

Control Condition

The subjects in the control group received the climate scale and the evaluation form at the same time as the experimental groups. A very short instruction was attached to the questionnaire, which the experimental group received, too, merely mentioning the confidentiality and a short statement of purpose: "With the CTE we want to measure how you and your colleagues think about the treatment environment of your cottage." These minimal instructions and a complete lack of contact with the researcher would hopefully lead to a mechanic research-type situation, where the Ss would see the researcher as having all the power.

Dependent Variables

The dependent variables were measured with a 29-item evaluation form (see Appendix C). The distribution of items on this questionnaire was as follows: 10 items measuring perceived clarity, relevance, validity, and satisfaction with the questionnaire approach; besides these items, responsiveness was operationalized as number of missing data, number of words on open-end questions, and number of comments. Furthermore, there were five items measuring opinions on research and researcher attitudes, six items to check the experimental manipulation, two items measuring perceived legitimacy of participation in design, and two items respectively asking for the number of times the subject had participated in similar research, and for comments.

There were four biographical data items: sex, age, education, and length of employment in the institute.

The Survey-Instrument (See Appendix B)

The final survey-instrument administered consisted of 40 items. Of these, 26 were from the Characteristics of Treatment Environment scale (Jackson, 1964, 1969), 9 items came from the Ward Atmosphere Scale (Moos, 1974), and 5 items were taken from different organizational climate scales and modified to investigate the problems which were mentioned during the experimental sessions. The 40 items were divided into 8 factors, mainly on the basis of factor-analytic study previously done by the authors of the scales involved. The factor composition can be found in Appendix D.

2. RESPONSE

Thirty-four survey-instruments were returned and 33 evaluation forms, of which 29 could be used for further analysis. This response was somewhat lower than originally expected. Reasons given by the program director were staff being on vacation and inability as far as the night shift was concerned (since they felt they could not judge the treatment environment).

On later attempts to receive more questionnaires, the investigator was told that according to the technicians themselves, everyone had responded to the questionnaires. The possibility of resistance and/or irrelevance were mentioned by the program directors.

CHAPTER V

RESULTS

1. CHECK ON THE EXPERIMENTAL MANIPULATION

Table 5.1 gives the distribution of the six items which were meant to check the successfulness of the experimental manipulation. Apart from small deviations from the expected responses, the overall picture shows that the experimental conditions have been perceived by the subjects, as the investigator had sought them to be perceived. The subjects that did choose a category other than expected on the basis of their role in the experiment did never do so in more than one case.

2. HYPOTHESIS TESTING

None of the hypotheses formulated in Chapter IV has been confirmed. Table 5.2 shows the results of an one-way analysis of variance of 8 of 10 evaluation items. The experimental group did not perceive the climate scale as clearer or easier to understand than the control group (hypothesis 1; item 1). There was no significant difference between the experimental and the control group with regard to perceived relevancy or usefulness (hypothesis 2; items 2 and 9). The validity of the climate scale was not perceived as higher by the experimental group (hypothesis 3, items 5, 6, and 7). The two groups did not differ on the satisfaction measure (hypothesis 4; item 10); nor on personal involvement (hypothesis 5; item 3).

TABLE 5.1

FREQUENCY DISTRIBUTIONS OF SIX ITEMS CHECKING THE EXPERIMENTAL MANIPULATION

	Experimental Group n	Control Group n
20. Had you heard about this research before you received this questionnaire?		
1. Yes, from the investigator	12	1
2. Yes, from other staff	0	2
3. I don't know	0	0
4. No	1	13
21. Had you met the researcher from The University of Tennessee who conducts this research?		
1. Yes	12	0
2. No	1	15
3. I don't know	0	0
22. Did you receive an oral explanation about the purpose of the study?		
1. Yes	11	0
2. No	0	15
23. Was there any opportunity for you to give your opinion or comment on this questionnaire before you filled it out?		
1. Yes	13	1
2. No	0	14
24. Did you have the opportunity to change the content of the questionnaire before you filled it out?		
1. Yes	10	1
2. No	3	15
25. To what extent did you feel free to comment on the questionnaire during the session with the investigator?		
1-5. To a very great extent To a very little extent	12	1
6. I didn't participate in a session with the investigator	1	15

TABLE 5.2

RESULTS OF ONE-WAY ANALYSIS OF VARIANCE ON EIGHT EVALUATION ITEMS

	Experimental Group		Control Group			
	M	Sd	M	Sd	df	F-ratio
1. To what extent do you think that the questions on the Characteristics of Treatment Environment scale were clear and easy to understand?	2.67	1.23	2.81	0.98	1,26	0.122
2. To what extent have all the aspects of the treatment environment in your cottage received attention in the CTE scale?	2.38	1.04	2.31	1.25	1,27	0.028
3. To what extent did you feel personally involved while filling out the CTE scale?	2.92	1.44	2.93	1.38	1,24	0.00
5. To what extent do you think you can accurately measure or rate the cottage treatment environment, using the CTE scale?	3.46	0.88	3.25	0.93	1,27	0.39
6. To what extent do you think that your answers on the CTE scale reflect the actual day-to-day situation in your cottage?	2.54	1.33	2.20	0.77	1,26	0.70

Table 5.2, continued

	Experimental Group		Control Group			
	M	Sd	M	Sd	df	F-ratio
7. To what extent do you think that the other staff on your ward gave answers "as it really is" to the CTE scale, regarding the actual day-to-day situation in your cottage?	2.08	0.64	2.07	0.73	1,25	0.00
9. To what extent do you think that the CTE can be of help to the staff of your cottage to improve the working relationships?	3.36	0.92	3.08	0.67	1,21	0.703
10. All in all, how satisfied do you feel with this questionnaire approach?	3.09	1.14	3.12	0.96	1,25	0.007

NOTE: Items 1-9: 1 = To a very large extent; 5 = To a very little extent; Item 10: 1 = Very dissatisfied; 5 = Very satisfied.

The differences between the means are too small to draw any conclusions about tendencies toward a more positive attitude of either of the two groups.

Responsiveness

Hypothesis 5 which stated that the experimental group would be more personally involved while answering the climate scale than the control group was also meant to be tested by three different measures of responsiveness.

Number of missing data. Table 5.3 shows the frequency of missing data for experimental and control group on the evaluation form. Though the control group has more missing data, the difference is not significant.

Number of words on open questions (items 4, 8, and 29). Few people gave a response to the open-end questions, which would indicate a lack of responsiveness. Product-moment correlations between the three open-end questions are given in Table 5.4. As the table shows, the "number of words" has not proven to be a consistent measure.

Number of comments on either climate scale or evaluation form. On the climate scale a comment was made by only one person. On the evaluation form the same result was found; besides with regard to comments which were made besides those under the item specifically asking for comments (item 29).

Hypothesis Number 6

The sixth hypothesis stated that the experimental group would answer the survey instrument itself in a more negative way than the

TABLE 5.3

FREQUENCIES OF MISSING DATA FOR EXPERIMENTAL AND CONTROL GROUP

No. of Missing Data	Experimental Group f	Control Group f
0	3	-
1	2	1
2	2	1
3	1	3
4	2	6
5	2	1
6	-	2
7	1	1
8	-	1
	n = 29 13	16

Chi square: 9.981 nS

TABLE 5.4

INTERCORRELATIONS BETWEEN "NUMBER OF WORDS" ON OPEN-END QUESTIONS

	4	8	29
4. Were there any questions you missed in the CTE scale, that you think should have been asked?	-		
8. How do you think that the CTE scale can be useful to the staff in your cottage?	0.13(7)[a]	-	
29. Do you have any other comments?	-0.52(6)	-0.01(8)	-

[a]Between parentheses, the number of cases.

control group, as they would withhold negative information to a lesser extent. The results of an one-way analysis of variance on the eight factors of the survey is shown in Table 5.5. Only one difference ("Behavior Modification") reaches the level of statistical significance, but it is not in the predicted direction. Although the other differences between the means are fairly small, six out of eight means of the experimental group are lower than those of the control group, which indicates that the experimental group evaluates its treatment environment in a somewhat more negative manner. This is in agreement with the hypothesis stated.

3. ATTITUDE TOWARD RESEARCH

Items 16 to 19 in the evaluation form asked for opinions toward research. Their intercorrelations are shown in Table 5.6. Their intercorrelations seem to justify the computation of a sum-score. Simple sum-scores were computed after item 16 had been reversed in scoring.

Theoretically, the scale ranges from 5 to 20. In Table 5.7 the differences between the means of the experimental group and the control group are shown. No significant differences were found. Some Pearson correlations between the attitude scale and items from the evaluation form are shown in Table 5.8.

4. THE LEGITIMACY OF PARTICIPATION

Table 5.9 shows the results of a one-way analysis on the two legitimacy items. Again, no significant differences were found.

TABLE 5.5

RESULTS OF ONE-WAY ANALYSIS OF VARIANCE
ON EIGHT FACTORS OF SURVEY

	Experimental Group		Control Group			
	M	Sd	M	Sd	df	F-ratio
1. Active treatment	23.08	2.70	23.43	3.49	1,32	0.095
2. Socio-emotional activity	7.69	2.50	9.10	1.92	1,32	3.404
3. Patient self-management	21.54	2.99	22.62	3.37	1,32	0.898
4. Behavior modification	14.38	2.99	12.14	2.95	1,32	4.584*
5. Instrumental activity	17.31	4.11	17.29	3.47	1,32	0.0
6. Expectation of patients	25.15	3.62	26.86	3.98	1,32	1.572
7. Scheduling	9.69	2.29	10.29	1.80	1,32	0.712
8. Team work	16.15	3.31	16.43	3.44	1,32	0.053

*$p < .05$

TABLE 5.6

INTERCORRELATIONS BETWEEN ATTITUDE ITEMS

	16	17	18	19
16. Research such as this can be really useful for helping to improve the work climate of this cottage	-			
17. Filling out questionnaires leads nowhere	-.53*	-		
18. University people who do research are only after their own interest	-.56**	.66**	-	
19. Treatment environments or work situations cannot be measured with questionnaires	-.58**	.68**	.64**	-

*$p < 0.005$ n = 28

**$p < 0.001$

TABLE 5.7

RESULTS OF ONE-WAY ANALYSIS OF VARIANCE ON THE ATTITUDE SCALE

	Experimental Group		Control Group			
	M	Sd	M	Sd	df	F-ratio
Attitude toward research	13.77	4.60	13.19	3.02	1,27	0.168

TABLE 5.8

CORRELATIONS WITH THE ATTITUDE TOWARD RESEARCH SCALE

	n	r
3. To what extent did you feel personally involved while filling out the CTE scale?	26	-.60**
5. To what extent do you think you can accurately measure or rate the cottage treatment environment, using the CTE scale?	29	-.35*
6. To what extent do you think that your answers on the CTE scale reflect the actual day-to-day situation in your cottage?	28	-.38*
10. All in all, how satisfied do you feel with this questionnaire approach?	27	.39*
26. To what extent do you feel that you should be told everything about a research study before participating in it?	29	-.54**
27. To what extent do you feel that you should have been allowed to comment on this questionnaire before filling it out?	25	-.53**
28. Number of times one has answered questionnaires before	25	-.02
Number of years employed in hospital	29	.26
Age	28	-.05
Education	29	.01

**$p < .001$

*$p < .05$

TABLE 5.9

RESULTS OF ONE-WAY ANALYSIS OF VARIANCE
ON TWO LEGITIMACY ITEMS

	Experimental Group		Control Group			
	M	Sd	M	Sd	df	F-ratio
26. To what extent do you feel that you should be told everything about a research study before participating in it?	2.08	0.95	2.19	1.17	1,27	0.075
27. To what extent do you feel that you should have been allowed to comment on this questionnaire before filling it out?	2.09	0.94	2.71	1.27	1,23	1.850

5. SOME CORRELATIONAL DATA

Satisfaction

In Table 5.10 some of the correlations between satisfaction and other evaluation items are shown. Noteworthy are the relations with involvement: the more involved, the more satisfied; with age and number of years worked on the one hand and education on the other; and the legitimacy items: the more satisfied, the more one should know about research, but this relation does not hold for commenting on research.

Feeling of Freeness to Comment During Session

In Table 5.11 some correlations are shown between the extent to which people in the experimental group felt free during the session with the experimenter to comment on the proceedings. As a check on validity, the relation with item 6 should be noted: the less people believe that their answers reflect the actual situation, the less they felt free to comment.

6. THE DIFFERENCES BETWEEN COTTAGES

In Table 5.12 the results are shown of an analysis of variance on eight evaluation items, two legitimacy items, and the attitude scale. There appear to be several statistically significant differences between the cottages on the evaluation items. The rank order of the cottages with regard to their degree of positiveness toward the survey is fairly consistent.

Table 5.13 shows the number of respondents per cottage on the three open-end questions. The actual answers can be found in Appendix E.

TABLE 5.10

CORRELATIONS WITH SATISFACTION

	n	r
3. To what extent did you feel personally involved while filling out the CTE scale?	24	-.67***
5. To what extent do you think you can accurately measure or rate the cottage treatment environment, using the CTE scale?	27	-.29
6. To what extent do you think that your answers on the CTE scale reflect the actual day-to-day situation in your cottage?	26	-.48**
12. Number of years worked in the hospital	27	.39*
13. Age	26	.40*
14. Education	27	-.29
26. To what extent do you feel you should be told everything about a research study before participating in it?	27	-.26
27. To what extent do you feel that you should have been allowed to comment on this questionnaire before filling it out?	24	-.03
28. Number of times one has answered questionnaires before	23	-.10

***$p < .001$

**$p < .01$

*$p < .05$

NOTE: Satisfaction: 1 = Very dissatisfied; 5 = Very satisfied; Other items: 1 = Very great extent; 5 = Very little extent.

TABLE 5.11

CORRELATIONS WITH FEELING OF FREENESS TO COMMENT (ITEM 25)

	n	r
3. To what extent did you feel personally involved while filling out the CTE scale?	11	.02
5. To what extent do you think you can accurately measure or rate the cottage treatment environment, using the CTE scale?	13	-.01
6. To what extent do you think that your answers on the CTE scale reflect the actual day-to-day situation in your cottage?	13	.60**
10. All in all, how satisfied do you feel with this questionnaire approach?	12	-.36
12. Number of years worked in hospital	13	.18
14. Education	13	-.30
26. To what extent do you feel you should be told everything about a research study before participating in it?	13	.14
27. To what extent do you feel that you should have been allowed to comment on this questionnaire before filling it out?	11	.02
Attitude toward research	13	-.29

**$p < .01$

TABLE 5.12

RESULTS OF ONE-WAY ANALYSIS OF VARIANCE BETWEEN COTTAGES ON EIGHT EVALUATION ITEMS, TWO LEGITIMACY ITEMS, AND THE ATTITUDE TOWARD RESEARCH SCALE

		Cottage Numbers						
		2 (n = 6)	4 (n = 5)	3 (n = 7)	1 (n = 6)	5 (n = 5)	df	F-ratio
1. To what extent do you think that the questions on the Characteristics of Treatment Environment scale were clear and easy to understand?	M	1.83	2.6	3.0	3.33	3.0	4,23	1.940
	Sd	0.41	0.55	1.0	1.37	1.41		
2. To what extent have all the aspects of the treatment environment in your cottage received attention in the CTE scale?	M	1.17	2.20	2.57	3.0	2.8[a]	4,24	3.082*
	Sd	0.48	0.45	0.53	1.79	1.1		
3. To what extent did you feel personally involved while filling out the CTE scale?	M	1.0	3.0	3.17	3.6	3.8	4,21	5.751**
	Sd	0.0	1.41	0.98	1.34	0.84		
5. To what extent do you think you can accurately measure or rate the cottage treatment environment, using the CTE scale?	M	2.83	3.0	3.57	3.5	3.8	4,24	1.179
	Sd	0.41	0.71	0.79	1.38	0.84		
6. To what extent do you think that your answers on the CTE scale reflect the actual day-to-day situation in your cottage?	M	1.17	2.2	3.67	2.17	2.6	4,23	10.156***

Table 5.12, continued

		Cottage Numbers 2 (n = 6)	4 (n = 5)	3 (n = 7)	1 (n = 6)	5 (n = 5)	df	F-ratio
	Sd	0.41	0.45	0.82	0.75	0.90		
7. To what extent do you think that the other staff on your ward gave answers "as it really is" to the CTE scale, regarding the actual day-to-day situation in your cottage?	M	2.0	1.5	2.0	2.5	2.2	4,22	1.509
	Sd	0.63	0.58	0.63	0.55	0.84		
9. To what extent do you think that the CTE can be of help to the staff of your cottage to improve the working relationships?	M	3.25	3.0	3.0	3.2	3.75	4,18	0.59
	Sd	1.26	0.82	0.0	0.84	0.96		
10. All in all, how satisfied do you feel with this questionnaire approach?	M	4.17	3.4	3.0	2.67	2.2	4,22	4.853**
	Sd	0.41	0.89	0.0	1.21	0.84		
26. To what extent do you feel that you should be told everything about a research study before participating in it?	M	1.33	2.0	2.43	2.33	2.6	4,24	1.376
	Sd	0.82	1.0	0.79	1.63	0.55		

Table 5.12, continued

		Cottage Numbers						
		2 (n = 6)	4 (n = 5)	3 (n = 7)	1 (n = 6)	5 (n = 5)	df	F-ratio
27. To what extent do you feel that you should have been allowed to comment on this questionnaire before filling it out?	M	1.8	2.4	2.5	2.83	2.6	4,20	0.538
	Sd	1.1	1.34	1.0	1.60	0.55		
Attitude-Scale	M	17.33	14.20	12.14	10.67	13.20	4,24	3.783*
	Sd	3.88	1.48	3.93	2.07	3.27		

***$p < .001$

**$p < .01$

*$p < .05$

[a]Values underlined by a common line do not differ from each other at the .05 level as determined by a Student-Newman-Keuls (Winer, 1971) procedure.

TABLE 5.13

FREQUENCY OF RESPONDENTS PER COTTAGE ON OPEN-END QUESTIONS

Number of Respondents on Cottage		Qn 4 f	Qn 8 f	Qn 29 f
1	(n = 6)	-	1	-
2	(n = 6)	4	5	4
3	(n = 7)	-	2	1
4	(n = 5)	1	1	1
5	(n = 5)	2	3	2
		7	12	8

7. DISCUSSION[2]

On the basis of the results presented in 2. HYPOTHESIS TESTING, p. 41, one cannot say that presence of prior knowledge of research and participation in instrument design yields perceptions of increased relevance, validity, clarity, involvement, or satisfaction with that instrument. What may be some of the reasons for these results and what alternative explanations can be offered?

1. The experimental condition. The successfulness of the experimental manipulation seemed apparent from 1. CHECK ON THE EXPERIMENTAL MANIPULATION, p. 41. It may be, however, that participants indeed acknowledged on the evaluation form the participation opportunities offered but did not really feel free to participate. Some support may be found in the .60 correlation between the feeling of freeness to comment and the extent to which answers on the survey reflect the actual day-to-day situation. When people felt free to comment, they indicated that their answers reflected the actual situation to great extent, which relationship is in agreement with the hypotheses. Although then experimental and control group differed with respect to objective participation opportunities offered, the <u>perceived</u> participation opportunities may have been more important in determining the evaluation of the survey, and people in the experimental group differed in their opinion about

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[2]The data of the evaluation form were subjected to some more statistical analysis (analysis of covariance, partial correlation) than reported here. The results, however, did not contribute to a better understanding or interpretation of the data obtained.

the freeness to comment.

There may have been some confusion during the session about the aims of the study and the status of the investigator. After the investigator had left, two out of three staff groups told the program directors that the questionnaire did not measure relevant aspects of their work situation ("Perhaps it was good for bed patients"). They had not made that remark during the session that was meant for airing these remarks. Was that because they realized that after the session, or did not dare to say so, or did they think that the investigator would not understand as he had openly expressed his unfamiliarity with treatment environments? When the investigator mentioned this in a feedback meeting with one of the groups, he was told that people were (still) a little afraid to speak up during the meetings.

The subjects never had more than 45 minutes to air their comments, and no opportunity was offered to them to review the questionnaire once more after the first modifications were made. There was probably no opportunity to become really involved or interested. Moreover, all meetings took place at the end of the day shift; at that time there is half an hour overlap between shifts to exchange information. The day shift may have been more eager to go home than to get involved in the design of a questionnaire.

The task of talking about the survey instrument may not have been an easy one. The question can be raised whether the subjects were capable of handling the task. The subjects know of course a lot about their own work situation, but to discuss that in relation to a questionnaire was perhaps not easy. The instructions had to be repeated in some

cases and occasionally the subjects would answer the questionnaire directly instead of commenting on it. It is true that the staff did comment: Unanimously they preferred one over the other questionnaire, to a large extent for reasons of detailedness. On their suggestions several items were removed, the response format modified again to do justice to the diversity in the situation.

All the above mentioned factors point to the possibility that the experimental session and task were less successful in creating important differences between experimental and control group than wanted for the experiment.

2. A weakness in the experimental design was the opportunity for members of experimental and control group to communicate with each other about the experiment. That staff did exchange opinions on the experiment became clear when one cottage returned twice as many questionnaires answered "experimental-group-wise" than there possibly could have been, considering the number of employees of that cottage that did participate in the experimental session. Another sign of communication can be found in Appendix E, where two subjects gave exactly the same answers on the open-end questions.

3. Some experimenter expectancy effects may have been active in cottage 2. It can be seen in Table 5.12, p. 55, that this cottage was consistently the most positive in their evaluation of the survey or in their attitude toward research in general. Their comments on the open-end questions seem to reflect also a great willingness to cooperate. The first question that the experimenter was asked during the feedback session was whether he had found what he had been looking for, thus

indicating awareness of the experimenter's expectations.

4. Institutional climate. The institute has a rather turbulent history, in which politics has played a major role with regard to personnel policy. Some anxiety about the "real" purpose of the study may have exerted influence on the response strategies. This explanation seems to be supported by the relationship between length of employment and general attitude toward the survey. Although no relationship was found between the number of times one had participated in similar research and the attitude toward research (Table 5.8, p. 50), several people mentioned during the feedback session that that was the first time they ever heard something about all the questionnaires they had filled out, which may have led to indifference or "tiredness" with regard to the survey.

5. Individual differences may also account for the results obtained. In Participation of Subjects in Aspects of Research Design, p. 27, it was mentioned that individual differences may be important for predicting the results of participation. In Table 4.1, p. 34, it can be seen that great differences existed between employees with regard to age, education, or length of employment. No significant differences were found, however, between experimental and control group with regard to attitude toward research or the perceived legitimacy of participation (Tables 5.7, p. 49; and 5.9, p. 51).

6. Differences between cottages. It may be that the differences between cottages (work groups) have had influence on the results. From Table 5.12, p. 55, one gets the impression that each cottage has chosen its own particular way of responding to the questionnaire. Cottage 2

has already been mentioned above. Cottages 1 and 4, very much alike on demographic variables and both belonging to the control group resemble each other in another aspect which may be typical for their strategy: The two questionnaires were attached to each other with a paper clip when distributed. The first page of the survey contained two questions about cottage and shift, the only means of identification. The staff of control cottages 1 and 4 were the only ones to remove the paper clips and to mix survey and evaluation form, thereby preventing any identification. The staff of the cottages 1 and 5 are in general the most negative about the survey (also apparent from some comments, Appendix E). These cottages have also the largest Sd's (Table 5.12, p. 55).

It seems that many alternative explanations are available, and more research is needed to investigate the effects of participation in research design on perceived validity of data, to make any conclusions about it.

CHAPTER VI

EVALUATION

If this experiment is analyzed in terms of Argyris' Model I and Model II, there needs to be little doubt under which model this experiment should be placed: Model I. It has been pointed out by Gadlin and Ingle (1975) that "ironically" both critics and advocates of the experimental method have based their arguments on the results of experiments, but neither has questioned the suitability of the experimental method to evaluate itself. They continue "the experimental investigation of experiments amounts to the functional equivalent of employing introspection to validate introspection and, therefore, represents a direct contradiction of the spirit underlying the prevailing interpretation of what constitutes good science (p. 1,004).

Indeed, the actual character of the experiment may have been another reason why no statistically significant differences were found between experimental and control group. The subjects did not have a say in whether there would be a survey in the first place. The investigator indicated the paradoxical relationship clearly when he said that he wanted the subjects to have a good questionnaire that would be useful to them; in otherwords, he had decided what they would want. Other rather paradoxical aspects of the experimental situation have been mentioned under the discussion in Chapter V (the limited opportunities to really participate or to become involved).

The experimental method requires an "own-interest-orientedness" of the experimenter, which is not very compatible with the ideas of

participation in research design. To test this thesis makes matters even more complicated.

Another test of the hypothesis should advisably take place within an organizational change project that has been started upon client's request. As the client often will be the management of an organization, and as the researchers may be seen as their assistants by employees, the difficulties with this type of research are not completely overcome. The situation may be a little less artificial. (The problem with research in organizational change, however, appears: experimental control is hard to achieve.)

Another factor that should be included in the design is a change of experiment leaders. Chances exist that the main results in this type of experiment are caused by personality or cultural characteristics of the experimenter.

As far as the actual results obtained are concerned, the fact that some of the cottages provided a rather outspoken profile may suggest that the relationship between participation and satisfaction with it is not only moderated by personality or task characteristics, but also by work group characteristics. The latter type may become more important when the overall organizational climate is perceived by the members of the group as threatening or unstable. Validity of data then is not only a matter of participation in order to increase interest and involvement but also a matter of perceived security (established on the basis of trust or written agreement).

This thesis has been addressed to the question whether the study of organizational change requires another scientific paradigm or a

modification in the paradigm currently most widely used. The answer to this question may lie in the inventiveness of researchers to combine the promising aspects of different approaches. The experimental study reported here does not warrant any conclusions about the question. The experimental design could be improved in many ways (in particular, with regard to the intervening variables) before a conclusion can be made about the potentialities of modification). How primitive, however, the experimental design may have been, it has been a modest attempt to act upon the suggestion that psychology should address itself to phenomena rather than methodology, by investigating the ways that could be done in a legitimate manner.

Popper's approach of "continuous critical learning" may be more fruitful and less frustrating for the action-oriented researcher, in that it stresses the testability of a theory, or the principle that a theory should allow the formulation of testable propositions, which is very different from the fact whether these propositions can be immediately tested in a very sophisticated manner.

The implications of the Dialectic approach have not been mentioned in the experimental study. The attention given there to the political dimension of research and intervention may provide, however, important contributions to an understanding of these processes, and may make the researcher aware of the broader context in which he works.

In summary, then, a thorough exchange of ideas and a cross-fertilization of approaches is advocated. The study of (organizational) change is worth these efforts. For the present, it can be said that rejection of the experimental method without simultaneously substituting

another paradigm is to reject science itself (Kuhn, 1962). Creativity and an awareness of developments in the philosophy of science may help to overcome the problems with the experimental method.

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APPENDIXES

APPENDIX A

THE ORAL EXPLANATION

(A transcript from the tape recording of the session in Cottage 2.)

Well, let me introduce first myself. I do not know whether you have heard anything about this. My name is . . . and I am coming from the Netherlands. But, this year I am studying at The University of Tennessee; I am studying industrial psychology, and I will work again in industry when I go back to the Netherlands. But, this year I have been working with the Education and Research department and that is how I got to know a few of the people around here in the hospital and what is going on.

And, that is also how I got to know Dr. X. And, some two weeks ago she invited me to talk about some research that I wanted to do which I hoped would be both useful to you all and me, and that was to do some kind of a questionnaire about treatment environment.

As far as I know--I am an industrial psychologist--people are paying more and more attention to treatment environment, as opposed to medical treatment and group therapy and all that kind of thing. As a matter of fact, I know that the training department recently finished a program on treatment environment called "The History of Moral Treatment." I don't know whether you have heard about this, but it is about how to make an environment in such a manner that it is stimulating for patients.

I have two questionnaires here which I thought were measuring treatment environment. But, this is not anything that I am familiar with so I would like to ask you to have a look at these questionnaires and to decide which one would be better to administer. I would like to come back some time next week and then with your suggestions and the suggestions of two other cottage staffs I talked to and I am going to talk to, I would like to administer that and feedback the data about 1 week later. So you can discuss then what you all think. I might give your results together with the results of the rest of the village so that you can compare how you look at things, and how the other people look at things.

The results would be for a whole cottage staff, not individually, of course. People cannot be identified, and we made the arrangement that only people of the village would see the data.

Do I make myself clear? (A question is asked about the permission to tape.) I brought a couple of the questionnaires (questionnaires are being distributed). There are two questionnaires in there. The format would be that you would say this statement is true or false for your treatment environment here. By adding up these statements you would get an idea how you all think about that. There is another one, the first is the Ward Atmosphere Scale on the first page, two pages later you see the Characteristics of Treatment Environment. These questions are only on the average somewhat longer, somewhat more detailed, and I would like you to decide which one you think would suit better your environment, which one really fits the situation you are living in here, which could be more useful to you. So, any changes you would like to make, adding

or deleting of items . . . would be welcome . . . .

Is there anything you would like to know, about what I am asking you?

(Later, the instructions have been repeated and explained more.)

At the end:

Well, I am interested in, finally in trying to make a questionnaire that is useful instead of just, you know, without any importance for the people that are going to fill it out. So, I will attach a small evaluation sheet after the questionnaire to ask you what you thought of this. And, that will be only for me . . . the whole thing, of course, will be anonymous.

APPENDIX B

CHARACTERISTICS OF TREATMENT ENVIRONMENT SCALE

UNIVERSITY OF TENNESSEE - DEPT. OF INDUSTRIAL PSYCHOLOGY

General Instructions.

The Characteristics of Treatment Environments scale is part of a study designed in conjunction with . . . Hospital.

With the Characteristics of Treatment Environments scale, we want to measure how you and your colleagues feel about the treatment environment and work atmosphere in your cottage.

To ensure complete confidentiality, please do not write your name anywhere in this booklet. The completed questionnaires will be processed by automated equipment which summarizes the naswers in statistical form so that individuals cannot be identified.

Please feel free to add any comments you have on either the Characteristics of Treatment Environments scale, or the Evaluation Form. You may make your comments beside any item or at the end of the Evaluation Form under "Comments."

In order to be able to identify how the whole staff of your cottage filled out this questionnaire, please indicate below the name of your cottage and your shift.

Thank you very much for your efforts and cooperation!

Cottage: 1 2 3 4 5

Shift: First Second Third

The Characteristics of Treatment Environments Scale.

There are 40 statements in the Characteristics of Treatment Environments Scale. They are statements about cottage environments. Please consider what usually or typically happens in your cottage. Then, to each of the items below, assign one of the following numbers.

5 This is very typical of this cottage; it happens repeatedly.
4 This is fairly typical of this cottage; it happens quite often.
3 This is more typical than not, but it doesn't happen a lot.
2 This is more untypical than typical, though it does happen some.
1 This is quite untypical; it rarely happens.
0 This is not typical at all; it never happens.

1. _____ In general, about 90% of all patients participate in ward activities.

2. _____ Parties or other social activities are hardly ever held in this cottage.

3. _____ Staff members are always trying to get patients to want to take more responsibility in the hospital.

4. _____ Staff members other than doctors frequently explain to a patient why he should or should not engage in particular kinds of behavior.

5. _____ Patients are not encouraged to take very much responsibility for maintaining their own physical cleanliness and grooming.

6. _____ There is very little emphasis on making patients more practical.

7. _____ Patients are rarely kept waiting when they have appointments with staff.

8. _____ Disagreements between staff members are always aired in meetings.

9. _____ All of the patients who are physically able participate regularly in some recreational activity.

10. _____ Patients from one cottage do not often participate in activities on some other ward.

11. _____ Patients are free to select their own activities during the day.

5 This is very typical of this cottage; it happens repeatedly.
4 This is fairly typical of this cottage; it happens quite often.
3 This is more typical than not, but it doesn't happen a lot.
2 This is more untypical than typical, but it does happen some.
1 This is quite untypical; it rarely happens.
0 This is not typical at all; it never happens.

12. _____ Members of the staff avoid entering into discussions with patients about hospital policy and regulations.

13. _____ Patients are hardly ever asked about what activities they would like to engage in or how they want to spend their time each day.

14. _____ Members of the staff always attempt to keep patients from behaving in a hostile manner.

15. _____ Hospital staff sometimes doesn't show up for their appointments with patients.

16. _____ The staff is always told what they need to know to do their jobs in the best possible way.

17. _____ Patients who are physically able frequently go on trips (picnics, walks, visits, etc.) outside of the hospital building.

18. _____ The staff does not encourage the families of patients to take them for rides or outings.

19. _____ The staff encourages patients to take over management of their own affairs, wherever possible.

20. _____ Patients' behavior is controlled by the staff letting patients have certain privileges or taking them away from them.

21. _____ Members of the staff hardly ever explain to patients why particular behaviors are propriate or inappropriate (good or bad).

22. _____ Patients here are encouraged to be independent.

23. _____ Once a schedule is arranged for creative or self-expressive activities, a patient can really depend on it.

24. _____ Some departments in this hospital don't plan their activities very well with one another.

25. _____ Attendants often take those patients who are physically able on trips outside of the hospital, either individually or in groups.

5 This is very typical of this cottage; it happens repeatedly.
4 This is fairly typical of this cottage; it happens quite often.
3 This is more typical than not, but it doesn't happen a lot.
2 This is more untypical than typical, but it does happen some.
1 This is quite untypical; it rarely happens.
0 This is not typical at all; it never happens.

26. _____ The number and varieties of activities in which patients can participate in this cottage has been increasing steadily during the last year.

27. _____ The staff trusts most of the patients to work out their relationships with one another without staff interference.

28. _____ On the whole, staff members demand strict obedience from patients.

29. _____ Patients are not encouraged to make changes in the ward which they think will increase its attractiveness or convenience.

30. _____ Patients are expected to make detailed specific plans for the future.

31. _____ Patients are rarely encouraged to discuss their personal problems here.

32. _____ Staff members in this cottage encourage each other to work as a team.

33. _____ Members of the staff are always seeking ways of making the atmosphere of the cottage more like the outside community.

34. _____ Patients are encouraged to start projects with other patients to improve the physical environment of the cottage.

35. _____ Patients are expected to take leadership on the ward.

36. _____ Members of the staff try to prevent patients from engaging in any behavior that appears to be sexual in nature.

37. _____ Patients are encouraged to make their own decisions in spending their money.

38. _____ Patients here are expected to demonstrate continued concrete progress toward their goals.

39. _____ All patients are encouraged to participate in music, painting, handicrafts, or other creative and self-expressive activities.

40. _____ Staff members here seldom share information about important events.

APPENDIX C

EVALUATION FORM

UNIVERSITY OF TENNESSEE - DEPT. OF INDUSTRIAL PSYCHOLOGY.

Evaluation Form.

This part of the questionnaire asks for your opinion about the "Characteristics of Treatment Environments" scale. The purpose of the Evaluation Form is to find out how one can best collect information about a treatment environment or work situation, in order to be able to improve it.

It would be a great help if you would answer the questions as thoughtfully and frankly as possible. This is not a test, and there are no right or wrong answers.

The answers are completely confidential, and they will only be used for research purpose.

Please circle the alternative below which best represents your opinion.

1. To a very great extent
2. To a great extent
3. To some extent
4. To a little extent
5. To a very little extent

1. To what extent do you think that the questions on the Characteristics of Treatment Environments scale were clear and easy to understand?	1	2	3	4	5
2. To what extent have all the aspects of the treatment environment in your cottage received attention in the Characteristics of Treatment Environments scale?	1	2	3	4	5
3. To what extent did you feel personally involved while filling out the Characteristics of Treatment Environments scale?	1	2	3	4	5
4. Were there any questions you missed in the Characteristics of Treatment Environments scale, that you think should have been asked? (Please indicate in the space below)					
5. To what extent do you think you can accurately measure or rate the cottage treatment environment, using the Characteristics of Treatment Environments scale?	1	2	3	4	5
6. To what extent do you think that your answers on the Characteristics of Treatment Environments scale reflect the actual day-to-day situation in your cottage?	1	2	3	4	5

Please circle the alternative below which best represents your opinion.

1. To a very great extent
2. To a great extent
3. To some extent
4. To a little extent
5. To a very little extent

7. To what extent do you think that the other staff on your ward gave answers "as it really is" to the Characteristics of Treatment Environments scale, regarding the actual day-to-day situation in your cottage? 1 2 3 4 5

8. How do you think that the Characteristics of Treatment Environments scale can be useful to the staff in your cottage? (Please indicate in the space below)

9. To what extent do you think that the Characteristics of Treatment Environments can be of help to the staff of your cottage to improve the working relationships? 1 2 3 4 5

10. All in all, how satisfied do you feel with this questionnaire approach?

    1. Very dissatisfied
    2. Somewhat dissatisfied
    3. Neither satisfied nor dissatisfied
    4. Fairly satisfied
    5. Very satisfied

Biographical Data

Here follow some questions about your general background. These questions are being collected to aid in our understanding of the complete study.

11. Sex: 1. Female 2. Male

12. When did you first come to work here?

    1. Less than a year ago
    2. Between 1 and 3 years ago
    3. Between 3 and 5 years ago
    4. Between 5 and 10 years ago
    5. Between 10 and 20 years ago
    6. More than 20 years ago

13. Into what age bracket do you fall?

1. 20 years or under
2. 21 to 25 years
3. 26 to 30 years
4. 31 to 35 years
5. 36 to 40 years
6. 41 to 45 years
7. 46 to 55 years
8. 56 years or over

14. How much schooling have you had?

1. Some grade school
2. Completed grade school
3. Some high school
4. Completed high school
5. Some college or other school after high school
6. Completed college or other higher school
7. Some graduate school
8. Completed graduate school

Opinions about research and administrative record keeping.

(Circle the response which best indicates your feelings towards the statements below.)

15. Too much time is wasted nowadays with doing senseless paper work.

(1)strongly agree (2)agree (3)undecided (4)disagree (5)strongly disagree

16. Research such as this can be really useful for helping to improve the work climate of this cottage.

(1)strongly agree (2)agree (3)undecided (4)disagree (5)strongly disagree

17. Filling out questionnaires leads nowhere.

(1)strongly agree (2)agree (3)undecided (4)disagree (5)strongly disagree

18. University people who do research are only after their own interest.

(1)strongly agree (2)agree (3)undecided (4)disagree (5)strongly disagree

19. Treatment environments or work situations cannot be measured with questionnaires.

(1)strongly agree (2)agree (3)undecided (4)disagree (5)strongly disagree

Feedback on the study.

20. Had you heard about this research before you received this questionnaire?

    1. Yes, from the investigator
    2. Yes, from other staff
    3. I don't know
    4. No

21. Had you met the researcher from The University of Tennessee who conducts this research?

    1. Yes
    2. No
    3. I don't know

22. Did you receive any oral explanation about the purpose of the study?

    1. Yes
    2. No

23. Was there any opportunity for you to give your opinion or comment on this questionnaire before you filled it out?

    1. Yes
    2. No

24. Did you have the opportunity to change the content of the questionnaire before you filled it out?

    1. Yes
    2. No

25. To what extent did you feel free to comment on the questionnaires during the session with the investigator?

    1. To a very great extent
    2. To a great extent
    3. To some extent
    4. To a little extent
    5. To a very little extent
    6. I didn't participate in a session with the investigator

26. To what extent do you feel that you should be told everything about a research study before participating in it?

    1. To a very great extent
    2. To a great extent
    3. To some extent
    4. To a little extent
    5. To a very little extent

27. To what extent do you feel that you should have been allowed to comment on this questionnaire before filling it out?

    1. To a very great extent
    2. To a great extent
    3. To some extent
    4. To a little extent
    5. To a very little extent

28. How many times have you been asked to answer questionnaires like this, either inside or outside the hospital? _____ (please indicate the number of times)

29. Do you have any other comments? (You can use the other side of this page.)

APPENDIX D

FACTORS OF THE CHARACTERISTICS OF TREATMENT ENVIRONMENTS

Factor I. Active Treatment: items 1, 9, 17, 25, 26, 33.

Factor II. Socio-Emotional Activity: items 2, 10, 18.

Factor III. Patient Self-Management: items 3, 11, 14, 19, 27, 34.

Factor IV. Behavior Modification: items 4, 12, 20, 28.

Factor V. Instrumental Activity: items 5, 13, 21, 29, 37.

Factor VI. Expectation of Patients: items 6, 22, 30, 31, 35, 38, 39.

Factor VII. Scheduling: items 7, 15, 23.

Factor VIII. Team Work: items 8, 16, 24, 32, 40.

APPENDIX E

ANSWERS ON OPEN-END QUESTIONS

Answers on item 4: "Were there any questions you missed in the CTE scale, that you think should have been asked?"

Cottage 2

- How the psychiatric technicians feel about activities and recreation.
- How the psychiatric technician feels about activities and recreation.
- None of great importance that I can think of right now.
- The questions were asked were all very good, as I went along answering them.

Cottage 4

- What is the meaning of "missed."

Cottage 5

- Tests could be individualized in fill-in-the-blank questions that would be common within a bldg. E.g., "blank" is important. Blank could be "personal hygiene" in geriatrics or "medicine regimine" in psychotic wards, or other specialized qs.
- Did not cover disagreements between staff as to approaches to take c residents. There were no questions about differences between shifts.

Answers on item 8: "How do you think that the CTE scale can be useful to the staff in your cottage?"

Cottage 1

- To improve the community lodge program.

Cottage 2

- It will give a clearer picture, insight into the importance of the program. The many achievements that may be realized from such a program.
- By letting the staff know just which way we are failing the patients or staff the most. That we might work to improve in those areas.
- By letting the staff know just which way we are failing the patients or staff most in. That we might work to improve in this cottage.
- It can show us where we might be failing as staff members and cause us to improve, and make better progress with our patient care.
- The CTE scale can be very useful in cottage if each staff member works toward the same goal.

Cottage 3

- Can be useful to improve the team work in the cottage.
- 1. Be more help to patients; 2. Help staff work c more team work.

Cottage 4

- Perhaps in a general overview of current treatment modalities.

Cottage 5

- Only if it could be used to statistically quantify staff's responses to important issues . . . as an objective index, to be used instead of subjective opinion.
- I don't feel we can use it very successfully in this cottage.
- Will show how satisfied or dissatisfied we are as a staff.

Answers on item 29: "Do you have any other comments?"

Cottage 2

- I am very willing to listen, work, or participate in any suggestions anyone who is connected c X (name of institute) and ways to improve the care and management of patients.
- In general, I feel that anything to help any patient improve and find himself back in his community, or as near as possible is worth all the efforts it may cost.
- By questions and answers we get a clear picture of our work so we can become better employees for patient care and all other staff members.
- idem

Cottage 3

- The wording of parts this survey was somewhat confusing. Had it been simplier therefore more easily understood, much more accurate answers could have been given by staff.

Cottage 4

- Some additional information regarding the purpose of the questionnaire would have been desirable (also improve staff cooperation).

Cottage 5

- This index is more structurally sound than the nebulous and more vague index that it concerns.
- Questions weren't clear + the answers that were given didn't really say what you meant.

VITA

Jan-Willem Broekhuysen was born in December, 1949, in the Netherlands. He attended elementary school and Gymnasium in Hilversum. In 1969 he graduated with the diploma "Gymnasium-beta." Then, he went to the "Vrije Universiteit" in Amsterdam where he studied psychology and economics. In June, 1975, he finished his studies, obtaining the degree of Doctorandus in Industrial and Organizational Psychology, with minors in economics, organizational sociology, and clinical psychology. In July of the same year, he left for the United States as a combined scholarship from The University of Tennessee, the Fulbright-Hays Commission, and the Ministery of Education and Sciences in the Netherlands enabled him to study for one year at The University of Tennessee.

He will receive the Master of Science degree in Industrial and Organizational Psychology in December, 1976.