THE CRITICAL SOCIAL THEORY APPROACH TO INFORMATION SYSTEMS: PROBLEMS AND CHALLENGES

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Abstract
For some time now critical social theory has been put forward as an alternative to traditional approaches to Information Systems research and practice. It has however remained a mystery to 'outside' observers, because of the language of its discourse, and radically different position on scientific enterprise. This paper attempts to open the discourse on critical social theory by presenting a review of basic concepts and discussing some of the theoretical problems and challenges which must be addressed if progress is to be made in applying it to the practical issues of Information Systems.

1. INTRODUCTION

The past decade has seen much discussion about the theoretical foundations of the various Information Systems research programmes and the future of Information Systems as a discipline [46, 51]. These discussions have been useful in that they have exposed many of our theoretical assumptions to debate and critical reflection. More recently, Hirschheim and Klein [28] have presented an analysis and classification of the general theoretical assumptions of various approaches to Information Systems research into four paradigms: Functionalism, Social Relativism, Radical Structuralism, and Neohumanism. Although much research has been carried out within each of the paradigms, some approaches have not received adequate attention. One such approach, critical social theory, which falls within the neohumanist paradigm, has been primarily limited to theoretical issues. However, the potential contribution of critical social theory to new knowledge about Information Systems development and usage has been discussed by several researchers.

Mingers [47] was one of the first to point out its relevance to applied systems thinking. He specifically pointed to the work of Habermas as a fruitful starting point. As he explained:

More recently Habermas has produced a critique of science and technology which includes an attack on systems theory and particularly systems analysis. It might appear, at first sight, that the two should be dedicatedly opposed and yet, although there are important disagreements, the striking similarities make it seem possible that the two approaches may both benefit from a dialogue [47].

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More recently Klein [31] and Lyytinen and Klein [32] have made the argument that critical social theory could inform the theoretical assumption of several traditional approaches to Information Systems and perhaps free the discipline from what they call the 'poverty of scientism'. Much work needs to be done, however, in order to clarify the critical social theory perspective and research programme. It is the objective of this paper to help demystify the critical social theory approach, and open it up for debate and critical analysis by both critical and traditional theorists. The focus of the paper is on outlining: (a) the main concerns of critical social theory, specifically Habermas's critical social theory; (b) the theoretical assumptions of critical social theory as they might apply to Information Systems research and practice; (c) to offer a critique of the current application of critical social theory to Information Systems research; and (d) to outline a methodology for practice oriented research.

2. FUNDAMENTAL ASSUMPTIONS OF CRITICAL SOCIAL THEORY

Critical social theory is a school of thought which has as its primary objective the improvement of the human condition. Its focus, according to its founders (Horkheimer, Adorno, Fromm, and Marcuse) is on general theoretical problems, as well as specific investigations of concrete problems of contemporary social organization. The approach was to break with traditional hypothetical deductive methods, which are oriented towards the preservation and gradual reformation of the status quo. Critical social theory was intended to be a radically different approach which would take into account the human construction of social forms of life and the possibility of their recreation. At the inaugural address of the opening of the Institute For Social Research, Horkheimer (1937) outlined the goals of critical social theory as follows:

The critical theory of society on the contrary (... to the positivist view of social science) has as its objects men as the producers of their total historical forms of life. The conditions of reality from which science starts out, appear to it not as given to be established and calculated purely on the basis of laws of probability. What is in each case given, depends not solely upon nature but also upon what men wish to make of it. The objects and the manner of perception, the statement of the problem and the interpretation of the answers are created from human activity and the degree of its power. (cf. Frisby [12], pp. 107).

The primary difference between traditional social theory and critical social theory is the researcher's attitude toward his/her world and work. Fundamentally, traditional social theory is premised on the analysis and understanding of the status quo. By implicit acceptance of 'what is', traditional social theory does not challenge, but contributes to the preservation of the status quo. Further, because of its rejection of value issues, it is easily transformed into reified ideology. Critical social theory on the other hand, is concerned with finding alternatives to existing social conditions which more adequately address human desires. Its research focuses on the emancipation of individuals and the human species in general. Critical social theory rejects the separation of value and inquiry, knowledge and action, and challenges the unity of the scientific method with regard to social affairs.

The critical social theory programme for social research and practice is grounded on five fundamental assumptions: (1) People are the creators of their social world, and as such, can change it if they wish. (2) All scientific knowledge about the social world is socially
constructed, and as such, cannot avoid being infused with 'value orientations', because all
social constructions are value laden. Value orientations can be identified in both implicit and
explicit forms of ideology held by the researchers. (3) Reason and critique are inseparable.
As Marcuse [42] explains: reason means the capacity to understand the existing social
world, to criticize it, and to search for and present alternatives to it. Reason here is to be
understood in the Hegelian sense, as the critical faculty which reconciles knowledge with
change toward the goal of human freedom. It is through critical reason that the inherent
distortions of the social affairs can be reconstructed and understood. (4) Theory and practice
ought to be inextricably interconnected, because the task of critical social theory is seen as
that of reconciling knowledge with the satisfaction of the human need for self improvement.
(5) Critical social theory must be reflexive: that is, it must concern itself with the validity
conditions of knowledge and change which it produces. Therefore, researchers following
this approach must collaborate with those who will be affected by it, opening it up to public
debate and critical reflection.

Summary of the Fundamental Assumptions

1. People have the power to change their world.
2. Knowledge of the social world is value laden.
3. Reason and critique are inseparable.
4. Theory and practice must be interconnected.
5. Reason and critique must be reflexive in practice.

2.1 Habermas's Contribution to Critical Social Theory

In line with the stated fundamental assumptions, Habermas has set out to broaden the
discourse on critical social theory to include various strands of contemporary thought. In the
early 1960's, he entered the Popper-Adorno debate over the philosophical foundations of
social science, attacking the narrowness of 'instrumental reason' and 'the technological
imperative' of modern science. He felt that scientific and technological thought had become
too dogmatic, extending its instrumental rationality into all spheres of life, reducing political
and social issues into matters of technical rationality. He believed that a critical approach
with a broader notion of rationality was needed to ensure that society maximizes the benefits
of technological advancements while minimizing the disadvantages. In an attempt to extend
beyond instrumental rationality, Habermas adopts from Kant's critical philosophy, the notion
of practical reason, critique, and reflective judgement, incorporating them in his principles
for critical inquiry. He has also provided significant criticisms of modern theories of
management and social control, such as functional systems and organizational theory,
cybernetics, game theory, and decision theories, which are the current core not only of
information systems research, but also of management and other applied behavioral sciences.

In studying extensively the methodological problems of knowledge acquisition of the
social sciences, Habermas set out to construct a conceptual framework upon which a critical
scientific methodology suitable to critical social theory research could be based. In
Knowledge and Human Interest [16],
he outlines a program for the development of this methodology. He starts by identifying at the transcendental level, three types of knowledge interest which he believes drive all human inquiry: (1) technical; (2) practical; and (3) emancipatory. Technical knowledge interest has as its concern the human need for prediction and control of the natural and social world. It is rooted in instrumental rationality and focuses on defining means for achieving given ends. Consequently, its major products are technology: for example, management procedures, problem solving methods and so on. Technical knowledge interest is validated with regard to its effectiveness. Practical knowledge interest on the other hand, is concerned with our quest for self-understanding. The focus of practical knowledge interest is on understanding social forms of life, traditions, social behavior and relations, and offers as its products improved social consciousness and humanity. It uses communicative rationality and is validated with regard to truth and clarity. Emancipatory knowledge interest is related to our concern for freedom from physical and mental restrictions and social distortions. It uses dialectic rationality for critical reflection and analysis of instrumental rationality, and its products, with regard to their 'rightness'. Emancipatory knowledge interest also focuses on the establishment of norms for justice and enhancement of human freedoms. Each type of knowledge interest is believed to represent a frame of reference (or mental mode) through which researchers apprehend and make sense of the world as they seek to obtain knowledge about it.

<table>
<thead>
<tr>
<th>KNOWLEDGE INTEREST</th>
<th>OBJECT OF INTEREST</th>
<th>ORIENTATION</th>
<th>KNOWLEDGE PRODUCTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical</td>
<td>Natural World</td>
<td>Prediction</td>
<td>Scientific Knowledge</td>
</tr>
<tr>
<td></td>
<td>Social Structures</td>
<td>Control</td>
<td>Technology</td>
</tr>
<tr>
<td>Practical</td>
<td>Social Relations</td>
<td>Mutual</td>
<td>Social Consciousness</td>
</tr>
<tr>
<td></td>
<td>Tradition</td>
<td>Understanding</td>
<td>Humanity</td>
</tr>
<tr>
<td>Emancipatory</td>
<td>Technology</td>
<td>Social</td>
<td>Norms for Justice</td>
</tr>
<tr>
<td></td>
<td>Social Relations</td>
<td>Criticism</td>
<td>Freedom</td>
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</table>
Habermas sees science and its project of improving the human condition as a collaborative effort where people (scientists and non-scientists) work together to achieve its ends. Such being the case, communication is central to the performance of a collaborative science. The question then becomes; how do the participants guard against systematic distortions and violations of free and unencumbered scientific discourse? Habermas has defined two classes of criteria for analyzing and validating discourses: (a) content, and (b) relationship. The content criteria deal with the truth and clarity of every communicative action, while the relationship criteria deal with the appropriateness and sincerity of those actions. For Habermas the act of entering scientific discourse means that the participants are committed to finding a solution by force of better argument, and must adhere to domination free cooperation and communication. Facts may not be misrepresented, and jargon may not be used to mystify, as this would violate the principle of ideal discourse.

3. CONCEPTUAL FOUNDATIONS FOR CRITICAL SOCIAL THEORY METHODOLOGY

The universe of inquiry of critical social theory spans the objective - subjective spectrum of social reality. It emphasizes open collaboration by giving primacy to the actors' participation in the creation of a social world with meaning appropriate to them. Physical and organizational structures, social relations, symbolic interactions as well as each actor's interpretation of these are the universe of inquiry for critical social theory research. In order to make sense of this 'messy' world, the inquirer must focus on both process and context from an individual as well as an institutional perspective. To deal with this task, critical social theory adopts pluralistic inquiry methods that are heavily oriented towards interpreting and mapping the meaning and social construction of the universe of inquiry. This allows the researcher to be sensitive to the life-worlds of participants which are central to understanding the way social actions are constructed and executed. The approach is one of active participation, observation and analysis of contextual data. This strategy enables the analysis of social contexts in which social actions are embedded.

Critical social theory aims to integrate the three fundamental knowledge interests into a holistic approach to inquiry and intervention. In support of technical knowledge interest, it admits the inquiry methods of empirical sciences as appropriate to problems of technical control and prediction in engineering research. Technical control and prediction is not limited to nature - people are included as well (e.g., human systems engineering, such as marketing research, behavior control, etc.). Critical social theory recognizes the other knowledge interests as mitigating influences to the possible excesses of instrumental rationality and balances these with the communicative rationality of practical knowledge interest and the dialectic rationality emancipatory knowledge interest. Critical social theory also recognizes the difference between observing nature and observing people in scientific research. People are not inanimate objects serving only as passive objects of observation for the researcher. Under observation, they may adopt different behaviors depending on their perception of the role of the researcher, thus invalidating the principle of asymmetric observation. Further, critical
Table 2
Conceptual Foundations of Critical Social Theory Methodology

<table>
<thead>
<tr>
<th>KNOWLEDGE INTEREST</th>
<th>UNIVERSE OF INQUIRY</th>
<th>INQUIRY METHODS</th>
<th>RATIONALITY</th>
<th>VALIDITY CLAIM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical</td>
<td>Objective World</td>
<td>Empirical</td>
<td>Instrumental</td>
<td>Effectiveness</td>
</tr>
<tr>
<td>Practical</td>
<td>Shared Subjective</td>
<td>Descriptive</td>
<td>Communicative</td>
<td>Truth</td>
</tr>
<tr>
<td>Emancipatory</td>
<td>Inner-Subjective</td>
<td>Critical</td>
<td>Dialectic</td>
<td>Justice</td>
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*Social theory does not accept that science is value free; it makes explicit its value position, which is the improvement of the human condition. Improvement of the human condition here means freeing people from social and psychological distortions and barriers to social progress.*

Figure 1. The Critical Social Theory Inquiry-Change Process

Although critical social theory does not have its own research methodology, many, currently available interpretative methodologies can be adapted to its needs. Its requirements, however, are very stringent. (1) Methods must be *practice oriented* focusing on change. (2)
They must support inquiry into the organization process and its social context. (3) They must be sensitive to individual as well as organizational needs. (4) They must be collaborative, supporting free and open participants. (5) They must be critically self-reflective. These requirements can be used as criteria for selection or adaptation of appropriate methods which could be used individually or cooperatively to achieve the objectives of critical social theory research.

4. RESEARCH PROBLEMS AND CHALLENGES

It would be instructive at this point, to classify current critical social theory-information systems research in order to clearly identify the nature of it, and its possible future directions. The concepts of Figure 1 are used as the schema for analysis (cf. Figure 2), as they offer a simple and straightforward classification which adheres to the basic assumptions of critical social theory. On the theoretical level, two types of research are identified: (a) Decisionistic - work which provides criteria, principles, or guidelines for dealing with a specific class of problems. Few papers report this type of research (cf. Figure 2); and (b) Reflective - work which focuses on critique. By far, most of the research falls within this category (cf. Figure 2 below), with the focus being on the foundations of information systems. On the practical level we have: (c) Interventionist - action oriented work which intervenes or provides methods for intervention into information systems research and practices with the clear objective of improving it; and (d) Experiential - participant observation work on information systems research and practice to collect data for theory building and critical reflection. So far, very little research has been reported at the level of practice. However, a study is in progress on collaborative systems development which utilizes the critical social theory framework [53].

<table>
<thead>
<tr>
<th>DECISIONISTIC</th>
<th>REFLECTIVE</th>
</tr>
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<tr>
<td>THEORETICAL</td>
<td>[38,35]</td>
</tr>
<tr>
<td>[28, 32, 33, 36, 39, 31, 34, 37, 38, 40, 52]</td>
<td></td>
</tr>
<tr>
<td>PRACTICAL</td>
<td>[53]</td>
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<td>[53]</td>
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</table>

Figure 2. Critical Social Theory Schema for Classifying Research

Much of the work listed above can be criticized on two important aspects: (1) Communicative competence - their use of jargon serves to create barriers to free and open participation in the debate; (2) Reductionism - by separating theory from practice, and narrowing the focus to issues of theoretical interest, a grave sin has been committed against the philosophy of critical social theory. More attention needs to be given to work which integrates the four quadrants of the schema. Although the use of the schema in this analysis could be characterized as reductionist, the aim is to point out how the existing research has been segmented in focus. Another important problem that the critical social theory programme must face is the question of an appropriate methodology. The next section
presents a brief discussion on how action science might contribute to a solution of this problem.

4.1 Toward an Action Science Research Strategy

Action science is a methodology for practice oriented social research developed by Argyris [1, 4]. It is considered an exemplar of critical social theory because it shares similar core assumptions: (1) critique of the status quo and a search for alternatives to it; (2) collaborative action for learning and fundamental change; (3) free and open participation by individuals in the creation of their social world; (4) critical self-reflection as a methodology for improving self-awareness and transformation. Like critical social theory, action science is concerned with bridging the gap between science and intervention (i.e., theory and practice, knowledge and action). As a science, it focuses on producing 'knowledge of action,' which informs social practice. It assumes a definition of 'knowledge of action' that goes beyond that of mainstream applied science. While the latter is concerned with the technical problem of choosing the best means to achieve specified ends, and defines knowledge of action as knowledge about the relationship between means and ends; action science extends the definition to include a normative component which concerns the choosing ends. It holds that value judgements are not simply "emotive utterances" but social facts which have consequences in the social world. Action science is concerned not only with technical effectiveness but also with the validity of norms for guiding open and informed choices and responsible action. Both action science and critical social theory take the position that technical knowledge in the absence of intelligent and responsible choice of ends is impractical and often dysfunctional. Although it would be useful to enter a discussion on action science, space does not permit. For a comprehensive overview see Argyris et al., [4].

The following is a summary of the basic principles of action science:

1. It seeks to enact reflective inquiry as a fundamental aspect of social practice. The ground of its knowledge claims is the community of social practice, which is the ultimate judge of its validity.

2. It seeks to produce generalized knowledge of action through reflective inquiry of social practice which is guided by norms of public testing, falsifiability, intersubjective agreement on data and explicit inference.

3. It is concerned with the interpenetration of empirical, interpretive, and normative claims, insofar as they relate to the meaning and logic of action.

4. It seeks to create alternatives to the status quo and to promote learning and change at the level of norms and values, by focusing on double loop learning and frame breaking.

4.2 Action Science Methodology

The action science methodology intends to produce knowledge which can be characterized by two main criteria: (a) immediate usefulness in action situations; and (b) unconformable propositions and theory, falsifiable by practitioners in real-life action situations. It follows then that the universe of inquiry is practice. The approach is a collaborative process in which scientist and participants of the action situation of interest enquire into problems of social practice in a learning context. The learning context is designed to foster learning about the constraints of practice and about alternative ways of constructing it. The process of action learning is a cycle of public critical reflection and experimentation-in-action in which taken-for-granted routines are challenged, alternatives
developed and tested, and new competences learned. Communicative action is the primary source of data for inquiry and analysis. It is an important form of social action which provides a window for inquiry into the logic of action, that is, the rules and tacit theories which inform the actor's routines [4,14,20,21,22,57].

**Figure 3. The Action Learning Cycle**

### 4.2.1 The Action-Experimentation Process

Action-experimentation is a process in which participants in real-life action situations collaborate with action scientists to identify and solve problems of social practice. The process seeks to foster open and free participation in which individuals are encouraged to: (a) select problems for study which are relevant to them; (b) take responsibility for data collection; and (c) participate in data analysis. The rules of action science inquiry, although designed to push back constraints of real-life conditions for collecting and analyzing data, and testing hypotheses, are nevertheless generalizable in everyday practice.

The aim of action science is to help individuals learn the rules and shared norms of inquiry so that they can implement these as aspects of regular practice. Data collection and analysis are not separated in action science research as they are in other research programmes. There are however, preferred approaches to conducting action science research which share well defined strategies for collecting data, conducting action-experiments, and ensuring internal validity and consistency. A range of methods is employed to ensure reliable data collection: (1) participant observation; (2) audio and video taping; (3) interviews; (4) action experiments; and (5) participant written cases. In action science research several of these methods are used together to accommodate cross-checking and minimize data pollution. Two types of data are elicited: (a) what individuals say and do as they perform their routines; and (b) their self-reports of what they were thinking and feeling at the time of action. Since action science promotes collaborative inquiry, the participants are encouraged to select problems for study which are relevant to them.

Three conceptual tools are used for data analysis: (a) theory-in-use models; (b) the ladder of inference; and (c) cognitive maps. The first are a set of abstract explanatory and
normative models, or ideal types, that guide the researchers in doing data analysis. They were developed by Argyris and Schon [3] to help action scientists decide which data and causal sequences of actions are important to their problem solving.

The ladder of inference serves three functions. First it is used to derive maps of action from collected data. These models are then tested in the action context. Second it is used to help connect generalized knowledge to specific cases during the design of new action strategies. Finally, it is a tool for retracing and making public the inferences that actors make when carrying out their action strategies.

The third tool, mapping, gives recognition to the fact that participants edit their organizational experience into scripts of personal knowledge. A cognitive map consists of the concepts and relationships an actor uses to understand action situations. When these maps are limited to defining causal relationships, they are called cause maps. Maps can be either graphic or narrative representations of action-strategies. They describe the tacit and propositional logic which are embedded in the action-strategies along with their effects on the behavioral world of the actors.

4.2.2 Hypothesis Testing

Hypotheses are derived from maps and tested in real-life action-experiments. Although the action context is a formidable domain for ensuring the validity tests, it is the only setting that provides the multitude of interacting variables which actors face in practice. Testing is a repetitive cycle of mapping action-situations, deriving hypotheses, designing action-experiments, and implementing them in practice (cf. Figure 4). The objective of this activity is to develop generalizable maps suitable for problem analysis and solving across a wide variety of case situations.

5. CONCLUSION

This paper has presented a review of the basic assumptions of critical social theory, and its principles for collaborative practice oriented research. The analysis of current research suggests that it is time to re-orient toward more practical concerns. The critical social theory approach was never intended to be an abstract philosophy. It was to bring about real change in the human condition. Although it may be argued that rushing from theory to practice results from the fear of speculation, and from shallowness of action and knowledge [56], it must be remembered that Theoros (the Greek god with whom theory is associated), was sent out to contemplate the cosmos only on holidays; praxis dominated the workdays.

Much fieldwork is needed to better understand how information systems research and practice can be improved by critical social theory. The latter sections of the paper have attempted to deal with the methodology problem.
which has impeded progress on practice oriented research. While work continues on adapting and implementing an action science methodology [53], other methods need to be identified and tested for suitability to this type of research. Further, the discourse needs to be more accommodating of other forms of social research and practice if a dialectic is ever to be achieved. The critical theory information systems research programme could learn a great deal from dialogues with the Soft Systems Approach and Trade Union Perspective.

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6. REFERENCES


