THE PROBLEM OF RATIONALITY IN COMPUTING

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Rapporteur: Professor John Dobson

The Problem of Rationality in Computing

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"Computers and Politics"

Danziger, Dutton, Kling, and Kraemer (1982)

Large-scale study of American local government

Who shapes and benefits from computerization

Surveys and case studies

Founded the institutional tradition

Defined the agenda for considerable subsequent work

Theories to be tested

Existing traditions of organizational theory

Differentiate four possible theories:

(1) Managerial rationalism
(2) Technocratic elitism
(3) Organizational pluralism
(4) Reinforcement politics

The last theory was defined as they went along

The Computer Package

Computing began with finance in the 1950s

Grew to include hundreds of applications

Question of adoption patterns

No simple technology-based story suffices

Need a larger unit of analysis

Package = equipment + people + technique

How the package as a whole arises and changes

The Computing Milieu

Defining variables to explain variation

Outside funding sources

Population and local financial resources

Political versus reform orientation

Half of variation is explained by:

(1) Population
(2) Outside funding
(3) Value orientation
(4) Formal decisional control

... in that order

But much variation remains unexplained

Types of bias from computing

Whose applications are implemented

Whose concepts and perspectives are used

Whose assumptions are built in

Differential access to information

Potentials for surveillance and control

Ease or difficulty of central coordination

Comprehensibility

Major results

No support for managerial rationalism

Pluralistic influence in the design process, but …

Benefits strongly influenced by dominant coalition

This is reinforcement politics

Computing thus functions as a conservative force

Limitations of the study

A major advance, but …

Fundamentally concerned with explaining variation

No analysis of inter-organizational phenomena

No analysis of vendor strategies

No analysis of the range of technical options

Technical architecture taken as given

Historically specific nature of the technology

Analysis shaped by strong opposition to rationalism

Many of these limitations persist

DISCUSSION

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Professor Malek asked for clarification of the role of inventors. Professor Agre replied that it was on the shoulders of everyone else and in particular on the shoulders of institutions. Invention is a collective activity. Professor Randell said he did not think that Turing stood on the shoulders of anyone. Professor Mamdani said he thought that perhaps we give geniuses too much individual credit; they are made by us. Professor Nygaard said that geniuses emerge over time, sometimes a very long time. An interesting question was how the need for their contribution spread.