APPLYING THE HUMAN RELATIONS PERSPECTIVE TO THE STUDY OF NEW MEDIA[+]

by

Ronald E. Rice

Annenberg School of Communications
Univeristy of Southern California
Los Angeles, CA 90089

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ABSTRACT

The Human Relations perspective is one of six perspectives, suggested by Kling and colleagues, that analysts take when studying the impacts of computers. This short note looks at the assumptions of this perspective by focussing on a particular component of the human relations approach. This component is the participation or involvement of users in the implementation and management of communication systems in organizations. It very briefly notes prior literature on this component, with particular reference to socio-technical systems research. This note considers the implications of using the human relations perspective and the focus on participation in light of results from a lengthy study of the management of word processing in 200 organizations. It concludes by considering the joint advantages of the other perspectives in analyses of participation.

If we wish to define "new" media as computer-based technologies that facilitate human communication and human information processing, then the study of the uses and impacts of new media has been active for 20 years or so. Of course, this implies that the first "new medium" was the mainframe computer, used in the context of organizational information processing. Simon (1960) early on wrote about widescale economic implications of automation; Rhee (1968) and Whisler (1970) reported on comprehensive analyses and discussions of the organizational and social impacts of information technology. By the end of the 70s, there was a sufficient body of research, and sufficient interest in the social sciences, about the impacts of computers and computer-mediated communication systems, that extensive review articles began to appear (Kling, 1980; Rice, 1980).

Kling and his colleagues suggested a typology for looking at this large body of research. This typology provided both a way to organize the material as well as an implicit warning that the perspective a researcher takes when conceptualizing, measuring, testing and reporting computing impacts is a significant determinant of the kinds of impacts found. Slack (1984) later independently developed a typology which maps onto Kling's fairly well, though it includes fewer categories An integration of these two typologies by Rice and Associates (1984: 76-79) suggested that awareness and judicious application of these perspectives should be helpful not only as single ideologies guiding programmatic research, but perhaps more so as a set of analytical tools. This set would help researchers look at a variety of aspects of technological impacts from different perspectives, at different stages of the system life cycle and organizational implementation effort. Indeed, a practical implication is that implementors need to be sensitized to these perspectives in attempting to alter the social fabric of an organization or institution adopting such systems. Researchers and implementors can then "see" a process and apply a perspective according to their particular audiences, needs and goals. What is necessary, then, is to be aware of possible perspectives, and be explicit as to which perspective is being used at the time.

So, what are the perspectives suggested by Kling? The first set of perspectives may be called the systems rationalism perspective (related to Slack's mechanistic category. This approach "takes technology as its starting point, and assumes that rational design and use of the system is possible...it assumes that consensus is possible, and that hierarchical authority accepted by organizational members is one form of consensus" (Rice and Associates, 1984:77). This set includes "technical rationalism, with an emphasis on procedures, efficiency, productivity, users, tasks and goals; structural analysis, with an emphasis on organizations and formal units, information flow, uncertainty and structural attributes; and human relations, with an emphasis on small groups, organizational resources and rewards, motivation, leadership, and participation."

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The second set is segmented institutionalism, which focusses on relationships between the social order and technology. This set includes "interactionism, with emphasis on computing as a package within a milieu, differentially situated social actors, and the negotiation and construction of meaning and identity; organizational politics, with emphasis on the interests of social positions, opportunities and constraints, and bargaining; and class politics, with emphasis on stratified social relations, control over production and distribution, and struggles for power" (pp. 77-78).

Now, the human relations perspective focusses primarily on organizational members as individuals working within a group setting. Three major topics of human relations research within this focus are: attitudes toward employees, group communication, and participation in work design and organizational change. While most of the discussion in this note will concentrate on participation in organizational change stemming from the implementation of computer-mediated communication systems, the three topics are related.

The human relations school may well be said to have started with the landmark "Hawthorne" studies by Roethlisberger and Dickson, 1939. Their results indicated the need to understand psychological processes of workers: their motivations and attitudes, and the relation of those to organizational performance. This change was, in part, a rejection of the assumptions of the school of scientific management that the only significant motivation for workers was pay, that jobs should be designed strictly for efficiency (by fragmenting, simplifying and supervising jobs) and that hierarchical organizational structures were most efficient (Taylor, 1911). Humans were not seen as particularly efficient information processors; so organizational control, stability and efficiency were emphasized. One could say that workers were just part of the company's technology, and management viewed workers from a technical rationalist's perspective.

But the Hawthorne studies and later human relations research led to different attitudes about workers and to different emphases in analysis. If the individual's motivations and needs were important to organizational performance, then the individual's group must also play a large part. Indeed, the emphasis on the effect of group communication patterns in an individual's performance led to a tremendous spate of research on small group communication (reviewed by Davis, 1969 and Morena, 1960). Certain communication patterns led to increased satisfaction by group members, although these same patterns did not necessarily lead to the most correct solution in the shortest time. But this research did serve to emphasize the importance of group communication for work performance.

More recent trends in theorization and research about job design and organizational change have placed more emphasis on employee motivations. Hackman and Lawler (1971), McGregor (1960), and Vroom (1964) among many others argued for management that assumes that workers can be self-motivated, mature; that they respond to complex jobs with motivation, satisfaction and performance if they have such higher needs; and that motivation is a result of perceived behavior outcome times perceived satisfaction derived from that outcome.

The literature on "contingency theory" argued that no one organizational structure or even job design is best fitted for all environmental conditions (Burns and Stalker, 1961). Given that the organization and work groups are sub-systems that receive inputs, engage in processes and produce outputs, they are subject to variations in environments that affect inputs, processes and outputs. In particular, Galbraith (1977), Lawrence and Lorsch (1969), Thompson (1967) and Tushman and Nadler (1978) began to emphasize the importance of information flows, feedback, patterns and processing in organizations. It must be said, however, that the empirical tests of these propositions have not been overwhelmingly supportive, and have not focussed much upon work units (Miner, 1980). We might expect that structuring of work groups is less influenced by the external environment, and more influenced by the internal environment -- organizational culture and resources, dependencies with other work units, and boundary-spanning supervisors and managers. One of the problems in this sort of research is that environmental uncertainty is very difficult to define and measure. Further, as environments and organizations change, the appropriate "fit" changes as well; little research has addressed this problem.

Thus, there are two gaps, or areas of fit, mentioned so far that are of concern to analysts taking a human relations (organizational structure) perspective: between employee needs and job rewards, and between work group structure and information processing demands. Human relations analysts concentrate on these gaps -- their sources, their correlates, their impacts, their solutions. The introduction of communication technologies into organizations has the potential to reduce these gaps, but often increases these gaps, at least for a while. Why is that so? We must turn to a more recent school of thought, the socio-technical systems approach. One of the very best books on the socio-technical systems approach is by Cummings and Srivastva (1977). The authors argue that several change processes occur simultaneously, and in opposite directions, when technology is brought into an organization. First, "social dynamics constitutes a change process whereby the social system appreciates in its capacity for learning and doing" (p. 100). That is, social systems (work groups) evolve and develop, by adapting and learning. Second, however, is that the learning process is relatively slow. Third, technological change can be quite rapid (especially if a new system is brought in "overnight" into an organization), while fourth, "technology depreciates in the hands of those who use it" (p. 101). That is, groups change slowly, but learn, while technology changes quickly, but becomes obsolete.

Increased gaps, tensions or problems are often blamed on "user resistance" or "inappropriate technology". However, the difficulty arises primarily when management decisions about work design, implementation and evaluation do not pay attention to this relationship: "since our knowledge of [creativity, complex problem-solving, motivation, and social interaction] is not well formulated, we often opt for simplistic work structures accounting for only well-known aspects of social behavior and hope that the other parts will somehow sort themselves out" (p. 102). The literature mentioned previously, and this warning, led to prescriptions for job design that include (a) feedback to the workers on their performance (b) involvement in a whole, rather than fragmented, task, (c) jobs that challenge the abilities that the individual considers significant, (d) rewards directed to group performance, (e) familiarity with all the skills needed for the task, (f) possiblility for reassignment if the individual does not interact well with the group, (g) opportunities for learning. These job attributes are presumed to lead to favorable psychological states (such as job meaningfulness and responsibility, and knowledge of results), which lead to higher motivation and satisfaction, and eventually to better performance, lower absenteeism and turnover, and the like (Rousseau, 1977). From this interest in the "fit" of technology and social systems comes the emphasis on a research variable and management activity strongly based in the human relations perspective: participation or user involvement.

Researchers frequently report that a significant cause of the failure (technical or social) of organizational information systems is insufficient user involvement or participation (see, for example, Alavi and Wetherbe, 1982; Coch and French, 1948; Edstrom, 1977; Ginzberg (1981); Klaeysen, 1983; Kole, 1983; Lucas, 1981; Markus, 1981; Mumford and Banks, 1979; Sontag, 1983; Pirow, 1983; Taylor, 1982). There are lots of good reasons suggested by writers as to why participation and involvement should be facilitated and studied: (a) workers have a right to contribute to the design of their work, (b) involvement leads to a more accurate knowledge of user needs, the organization and the relevant tasks, (c) unimportant system features can be identified early on, (d) the user gains increased understanding of the system, (e) the user develops realist expectations of the system, (f) design issues can be resolved before the system becomes "fixed", (g) users develop committment and ownership, (h) user resistance is detected and considered early on, and (i) participation in communication leads to increased job satisfaction (Ives and Olson, 1984; Mumford, 1981).

Several articles have reviewed the relative merits of worker participation compared to other organizational interventions. Cummings, Molloy and Glen (1975), Nicholas (1982) and Pasmore (1980) looked at job design in general. Hirscheim (1983) and Ives and Olson (1984) considered information systems specifically.

Nicholas concluded from a review of 65 studies that job enrichment with worker participation, as well as a more general socio-technical systems approach, both had greater impacts on reduction in workforce turnover and absenteeism, and increases in productivity, than any other approach. However, they had the lowest impact on production costs and product quality. The general category of techno-structural approaches was most effective at the group level, and particularly for workers and supervisors. Human processual approaches, which focussed only on group processes but not on job redesign, were better for improving monetary outcomes (costs, sales) and product quality, at the organization-wide level, and for management, staff and supervisors.

Cummings, Molloy and Glen, analyzing 57 studies, found that participative management (as opposed to autonomous work groups, job restructuring or organizational restructuring) was the most effective in improving employee's attitudes, although job autonomy was sufficient to improve attitudes. However, participative management was least effective at improving productivity; providing information and feedback was the most successful. The authors go on to list 17 contingencies where positive results are more likely. For example, participative management was more successful when worker groups' skills were high, or when direct supervision was otherwise difficult. The literature reviewed suggested that at least the immediate supervisor should be involved in change, and the organization should be sincere in accepting the outcomes of worker participation. Fitting technology to the social system was more successful when tasks were interdependent and they formed identifiable wholes.

Pasmore did not find great differences among sociotechnical system, job-redesign and survey-feedback interventions in influencing outcomes in a field experiment involving around 350 workers. All approaches improved employees' attitudes. The sociotechnical intervention led to higher productivity and cost savings.

Hirscheim is quite pessimistic about participative systems design. His review of prior studies and his own study of 60 information system users in 20 organizations concluded that user involvement shows (a) few associations with system use, (b) contradictory associations with positive attitudes toward the system and (c) contradictory associations, when they exist, with system quality. He suggests that participatory design is much more complicated than usually described; it tends not to be formally evaluated; it is praised by participants; and is not normally used a second time.

Ives and Olson produced the most comprehensive and analytic review of studies about user involvement and MIS systems. They argue that few studies are grounded in theory, substantiated by data, or are methodologically sound. There seems to be an exceptional amount of factors affecting, and affected by, involvement, including (a) various kinds of involvement, (b) different types of participants, (c) different types and development stages of systems, (d) different levels of

involvement and (e) different kinds of outcomes. For example, involvement may improve acceptance, but have no affect on the actual system design. Problem definition and installation are likely to profit more by participation than system design and actual construction. In general, only about one of three studies show positive results on these outcomes: system quality, system usage, user behavior and attitudes, and information satisfaction. Finally, studies do not involve comparable organizations, systems or measures, and are seldom explicit as to whether system usage is required or voluntary.

We begin to get a picture that the question of participation and work unit communication, and its effect on system use and benefits are as obscured by contingent conditions and differences in research designs, as much other social science research. The human relations perspective posits that the satisfaction of, attention to, and support for work groups is a crucial element in the success of information systems. We briefly report here some preliminary results of an analysis of how 200 organizations implemented and managed word processing, certainly one of the most pervasive and accessible information technologies. The data, motivation and other results are explained in Rice and Associates (1984: chapter 7).

In the most successful of the categories of work units, called "high-integration systems", we found that "word processing is managed rather than supervised, and increased capability is a clear goal...the form and function of the work group as well as the equipment are appropriate targets for reinvention" (p. 179). That is, the design of jobs and fitting of technology to social systems is not left to a default decision. "Idea sharing leads to idea development, and then to system development...in the sense of people working with technology to accomplish a mission. Interaction is the route to innovation." In order to manage jobs, people and technology in this way, there must be support for learning, communication about the job, application of workers' skills, autonomy in job decision-making, a sense of the whole job, and other aspects supported by the socio-technical approach.

Indeed, discussion of new procedures was significantly correlated with having input into decisions ($r=.32$) and receiving praise (feedback) from supervisors ($r=.57$). Simply being shown new procedures--that is, an indicator of control or mechanization of information transfer--was not correlated with having input into decisions, and not highly correlated with receiving praise. Job contentment and positive formal relationships, certainly two aspects of human relations management, are associated with being shown new ways of using the technology ($r=.40$, $r=.47$, respectively), but are not a factor in actively diffusing new ways of working ($r=$n.s., $r=.19$, respectively). Both of these sets of results imply that active participation is a strong factor in system implementation and application. These best-rated sites perhaps involve the right set of contingencies suggested by the studies noted above.

This hint into the relevance of the human relations perspective for the study of computer-based communication systems seems to indicate several things.

First, the focus on group communication, management attitudes toward workers, and participation seems appropriate.

Second, this focus is insufficient without a consideration of group and organizational structure, and the interactive "fit" with technology. This point argues that the organizational structure perspective is necessary for a fuller understanding of the processes involved in socio-technical systems design.

Third, the processes and variables involved in work-unit design of jobs, and in application of information systems, is quite complex and will not yield simple results. Given that, the interactionist and politics perspectives should prove quite useful in describing how these systems come to be implemented in the first place, and what user motivations and needs are accepted and met in the organization as a whole.

Fourth, the human relations perspective does not in itself help us understand the role and design of technology. While the technical rationalism perspective may help us understand the capabilities and potential efficiences of the technology, it's obvious that the same technology can be used in quite different ways to quite different ends.

Fifth, and finally, the class politics perspective would likely point out that regardless of differential use, benefits and performance, new communication systems and worker satisfaction are still designed for one outcome: organizational profits. Indeed, much of the human relations literature is concerned with performance outcomes, and satisfaction is seen as an intervening (and, typically, not a significant) variable, not a dependent one.

This note has been a tortuous consideration of just one aspect of the human relations perspective on computer-mediated communication systems, and even then limited to organization use of such systems. The answers are not straightforward, but there is a considerable foundation for future research. In the long run the human relations perspective is necessary for ideological grounds as well as empirical grounds. It argues that "users" are humans, and that their motivations, needs, abilities and interchanges are central to system design, implementation, use and potential. The other perspectives have much to offer as well, and the final story can only be told with all perspectives involved.

REFERENCES

Alavi, M. and Wetherbe, J. "Reducing Complexity in Information Requirements Planning." Systems, Objectives, Solution, 1982, 2, 143-157.

Bostrom, R. and Heinen, J. "MIS Problems and Failures." MIS Quarterly, 1977, September, 17-32 and December, 11-28.

Burns, T. and Stalker, G., The Management of Innovation. London: Tavistock, 1961.

Coch, L. and French, J. Jr. "Overcoming Resistance to Change." Human Relations, 1948, 1, 4, 512-532.

Cummings, T.; Molloy, E. and Glen, R. "Intervention Strategies for Improving Productivity and the Quality of Work Life." Organizational Dynamics, 1975, Summer, 53-68.

Cummings, T. and Srivastva, S.,Management of Work: A Socio-Technical Systems Approach. Kent, Ohio: Kent State University Press, 1977.

Davis, J., Group Performance. Reading, MA: Addison-Wesley, 1969.

Edstrom, A. "User Influence and the Success of MIS Projects: A Contingency Approach." Human Relations, 1977, 30, 7, 589-607.

Galbraith, J., Organization Design. NY: Addison-Wesley, 1977.

Hackman, J. and Lawler, E., "Employee Reactions to Job Characteristics." Journal of Applied Psychology Monograph, 1971, 55, 259-286.

Hirscheim, R., "Assessing Participative Systems Design: Some Conclusions from an Exploratory Study." Systems, Objectives, Solutions, 1983, 6, 317-327.

Ives, B. and Olson, M., "User Involvement and MIS Success: A Review of Research." Management Science, 1984, 30, 5, 586-603.

Klaeysen, A., "Case Study of Two Information System Implementation Efforts Using the Kolb-Frohman Model of Consultation." Systems, Objectives, Solutions, 1983, 227-235.

Kling, R. "Social Analyses of Computing: Theoretical Perspectives in Recent Empirical Research." Computing Surveys, 1980, 12, 1, 61-110.

Kling, R. and Scacchi W., "Computing as Social Action: The Social Dynamics of Computing in Complex Organizations." Advances in Computers, 1980, 19, 249-327.

Kole, M., "A Non-Developmental MIS Strategy for Small Organizations." Systems, Objectives, Solubtions, 1983, 3, 31-39.

Lawrence, P. and Lorsch, J., Organization and Environment. Homewood, Ill: Irwin, 1969.

Lucas, H.C., Jr., Implementation: The Key to Successful Information Systems. NY: Columbia University Press, 1981.

Markus, L., "Implementation Politics: Top Management Support and User Involvement." Systems, Objectives, Solutions, 1981, 1, 203-215.

McGregor, D., The Human Side of Enterprise. NY: McGraw-Hill, 1960.

Miner, J., Theories of Organizational Behavior. Hinsdale, Ill: Dryden, 1980.

Moreno, J., The Sociometry Reader. Glencoe, Ill: Free Press, 1960.

Mumford, E., "Participative Systems Design: Structure and Method." Systems, Objectives, Solutions, 1981, 1, 5-19.

Mumford, E. and Banks, O., A Participative Approach to Computer Systems Design. London: Associated Business Press, 1979.

Nicholas, J., "The Comparative Impact of Organization Development Interventions on Hard Criteria Measures." Academy of Management Review, 1982, 7, 4, 531-542.

Pasmore, W., "The Comparative Impacts of Sociotechnical System, Job-Redesign, and Survey-Feedback Interventions" in Katz, D.; Kahn, R. and Adams, J. (eds.) The Study of Organizations. San Francisco: Jossey-Bass, 1980, 523-530.

Pirow, P., "Why Some Systems Don't Provide Solutions." Systems, Objectives, Solutions, 1983, 89-94.

Rhee, H.,Office Automation in Social Perspective: The Progress and Social Implications of Electronic Data Processing. Oxford, England: Basil Blackwell, 1968.

Rice, R.E., "Impacts of Organizational and Interpersonal Computer-Mediated Communication" in Williams, M. (ed.) Annual Review of Information Science and Technology, Vol. 15. White Plains, N.Y.: Knowledge Industry Publications, 1980, 221-249.

Rice, R.E. and Associates. The New Media: Communication, Research, Technology. Beverly Hills, CA: 1984.

Roethlisberger, F. and Dickson, W. Management and the Worker. Cambridge, Mass: Harvard University Press, 1939.

Rousseau, D. "Technological Differences in Job Characteristics, Employee Satisfaction and Motivation: A Synthesis of Job Design Research and Sociotechnical Systems Theory." Organizational Behavior and Human Performance, 1977, 19, 18-42.

Simon, H. The Shape of Automation. Englewood Cliffs, NJ: Prentice-Hall, 1960.

Slack, J. "Surveying the Impacts of Communication Technologies." in Dervin, B. and Voigt, M. (eds.) Progress in Communication Sciences, Vol. 5. Norwood, NJ: Ablex, 1984.

Taylor, F. The Principles of Scientific Management. NY: Harper, 1911.

Taylor, J. "Designing an Organization and an Information System for 'Central Stores': A Study in Participative Socio-Technical Analysis and Design." Systems, Objectives, Solutions, 1982, 2, 67-76.

Thompson, J. Organizations in Action. NY: McGraw-Hill, 1967.

Tushman, M. and Nadler, D. "Information Processing as an Integrating Concept in Organizational Design." Academy of Management Review, 1978, 3, 3, 613-624.