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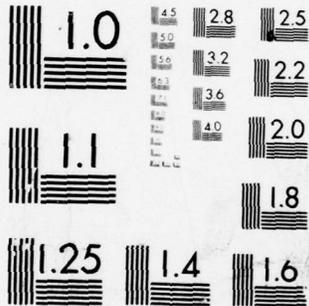
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Work Design in the Organizational Context

by

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Abstract

This report examines organizational factors that can compromise the implementation and persistence of work redesign. Three organizational systems that constrain the implementation of substantial changes in work are reviewed, followed by four organizational practices that can reduce the likelihood that the effects of work redesign will persist. Throughout the report, strategies for improving the "fit" between redesigned work and the organizational context are reviewed and evaluated.

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WORK DESIGN IN THE ORGANIZATIONAL CONTEXT

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People bring energy, talent and personal needs or wants to their jobs. Jobs make demands on people, and offer opportunities for people to use their talents and seek satisfaction of their needs. The goodness of the "fit" between the characteristics of people and the properties of their jobs is one factor that affects both work productivity and worker satisfaction.

When work is redesigned, the person-job fit is altered. We are particularly interested in those cases when the intent is to "enrich" the person-job relationship--that is, to make the work more meaningful for the jobholder, to provide him or her with increased personal responsibility for managing the work, and to increase the jobholder's knowledge of the results of the work activities (Hackman & Oldham, 1976, in press).

Research has shown that, under appropriate circumstances, work redesign can enhance both organizational productivity and the personal satisfaction of jobholders (cf. Katzell & Yankelovich, 1975; Katzell, Bienstock & Faerstein, 1977). Yet our observations of work redesign programs suggest that attempts to change jobs frequently run into--and sometimes get run over by--other organizational systems and practices, leading to a diminution (or even a reversal) of anticipated outcomes.

Sometimes it turns out that the changes actually made in the work are far less radical or far-reaching than those originally contemplated by the managers or consultants who initiated work redesign, and not large enough to make measurable differences in employee attitudes and behavior (Frank & Hackman, 1975). Other times substantial changes in the work actually are

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installed, but their effects fade over time (Walton, 1977).

The "small change" and "vanishing effects" phenomena call into question the efficacy and permanence of planned organizational change through the re-design of tasks and jobs. How are we to understand these phenomena? One possibility, of course, is simply that tasks do not make much of a difference in people's behavior and attitudes (cf. Salancik & Pfeffer, 1978). Another, and one we find more plausible, has to do with the ways that work design and other organizational systems and practices interact.

The "small change" effect, for example, often develops as managers begin to realize that radical changes in work design will necessitate major changes in other organizational systems as well. When managers discuss possible "enriching" changes in jobs, a frequent comment is something like, "Yes, but we couldn't do that, because..." And then follows a description of how the contemplated change would require revision of corporate personnel systems, or the technology of the work unit.

In most cases the concerns are valid: large changes in one organizational system (in this case, the work itself) invariably require alterations in related systems. These alterations are anxiety-arousing for the people involved, or expensive to make, or contrary to organization-wide policies--or, frequently, all of the above. So numerous small compromises are made from the "ideal" work design to minimize the disruptiveness and cost of the changes. The net effect, in many cases, is a project that meddles with the work rather than redesigns it. The changes are safe, feasible, inexpensive--and ineffectual.

Sometimes, especially in decentralized and low-technology organizational units, relatively substantial alterations are actually made in how the work is designed. When this happens other organizational systems and practices invariably are affected, and occasionally are thrown into disarray. People

don't like the way they are paid anymore. First-line managers feel stripped of their authority, and unpleasanties develop between them and the employees. Organizational control systems no longer work.

What we have is an aberration in one system that creates difficulties for many surrounding systems, and for the people who manage those systems. Either the surrounding systems must accommodate the new way the work is being done, or vice versa. Our observations suggest that the innovation "wins" relatively infrequently. Instead, the innovation is modified, slowed, or redefined in such a way as to be less of a problem for the surrounding systems. It is almost as if a foreign substance were introduced into the body: once its presence is recognized, the white blood cells arrive and attempt to render it impotent. The defenders usually prevail, given enough time, and the result is the "vanishing effects" phenomenon noted above.

Previously we have suggested that work redesign could be an excellent point of entry for broad-scale programs of organizational change (e.g., Hackman, 1975). The idea was that tasks, once changed, tend to stay changed. And because redesigning the work does create a "ripple effect" on surrounding systems, parts of the organization that previously were not amenable to change might become so following changes in tasks and jobs. By starting with work redesign and gradually folding in changes in related systems to make them consistent with the enriched work, major re-orientations in how organizations function could be achieved.

That set of ideas has turned out to work better in theory than in practice. Clearly we under-estimated both the difficulty of carrying out significant changes in the work itself, and the degree to which changes in tasks wind up being altered by surrounding organizational systems, rather than vice versa. Our present view, informed by numerous cases in which even well-executed work

redesign interventions have failed to have a broad or persisting impact, is that one must deal with the design of work and with surrounding organizational systems simultaneously, or very nearly so.

This is precisely what socio-technical systems theorists have advocated for years (e.g., Davis & Trist, 1974). It is clear to us now, as it should have been before, that the case for changes with multiple foci is a strong one, and that redesigned jobs may be at considerable risk unless they are congruent with other organizational systems and practices. If one adopts this view, then it becomes critical to understand which systems and practices most strongly compromise the implementation and persistence of work redesign, and to determine how these effects come to pass.

In this chapter we present some thoughts on these issues, and propose some new directions for research on work design that we believe could increase understanding about them. In the first half of the chapter we explore ways that existing organizational systems constrain the implementation of work redesign. Then, in the second part of the chapter, we examine ways that certain organizational practices can chip away at the persistence of changes that have been made in the design of work. While organizational systems and practices also affect the diffusion of work redesign within and across organizations, we restrict our attention here to matters that have to do with getting substantial changes in jobs made in the first place, and maintaining those changes over time. Readers interested in systemic effects on the diffusion of organizational changes are referred to Kimberly (in press) and Walton (1977).

Our chapter will necessarily be more speculative than most others in this series. While there are numerous case studies and tales of woe regarding problems in the implementation and persistence of work redesign, there is almost no systematic research on the topic. Therefore, we are unable to

point out many contradictory findings in the research literature, or to propose tests of competing hypotheses about the phenomena we address, or to evaluate which lines of existing research seem more or less fruitful. Instead, we must suffice with an attempt to construe the phenomena we are addressing in researchable terms, and to suggest some directions for research on these phenomena that may help in understanding them better.<sup>1</sup>

#### Constraints on the Implementation of Work Redesign

As noted above, sometimes it is not possible to alter the design of work substantially enough to make meaningful differences in the person-job relationship. What differentiates between those organizational circumstances in which substantial changes in the design of work can be made, and those when only small changes in the work itself are feasible?

The answer, we suggest, has primarily to do with the properties of three organizational systems: (a) the technological system, (b) the personnel system, and (c) the control system. As will be seen below, each of these systems has direct influences on how work is designed, and can limit the degree to which jobs can be changed and enriched.

Specifically, the technology of the organization has powerful effects on the specific tasks that must be performed, and how those tasks are arranged and sequenced. The personnel system can constrain flexibility in determining which employees can do what aspects of the work, limiting the possibility of combining tasks into large and meaningful modules. And the control system can constrain both the scope of jobs and the procedures that are used to perform them. Under some circumstances, these systems may render work redesign wholly infeasible--for example, when the technology is both fixed and expensive, when the personnel system enforces adherence to a detailed and specific set

of job descriptions, and when work processes are prescribed and enforced by an elaborate and inflexible control system. Work redesign is almost sure to fall victim to the "small change" effect under such conditions--unless it is possible to redesign these constraining systems simultaneously with the redesign of the work itself.

### Technological System

The technology of an organization can constrain the feasibility of work redesign by limiting the number of ways that jobs within the technology can be designed. In certain kinds of technologies, for example, it simply is not possible to build meaningful amounts of autonomy, variety or feedback into the jobs (Slocum & Sims, 1978).

A well-worn but illuminating example of such a technology is the automobile assembly line. Employees working on the line have little control over work pace--this is controlled by the line itself. Moreover, both the size of the work unit for which employees are responsible and the variety of skills needed to complete the work of the unit are severely limited for technological reasons. What remains in many assembly line technologies are fractionalized, segmented jobs--jobs that must remain that way as long as the technology is the way it is (Blauner, 1964; Walker & Guest, 1952).

Perhaps key in understanding how technology limits the characteristics of jobs is the concept of employee discretion. Rousseau (in press) has argued that one of the most important features of a technological system is the degree to which discretionary behavior is required of the human operator. When few degrees of discretion are required or allowed by the technology, then work procedures are by definition highly standardized and structured. Under such conditions, employees' jobs are usually segmented and routinized, and contain little variety, autonomy, identity and significance for the people

who perform them. In essence, the technology usurps many of the most desirable features of the work.

Recent research has documented that technologies which permit few degrees of discretion are in fact empirically associated with simple and routine jobs. For example, Rousseau (1977) used Thompson's (1967) classification scheme to categorize technologies according to the degree of discretion permitted. The technological categories were: long-linked (exemplified by assembly line systems), mediating (where inputs are first sorted into groups and each group subsequently is subjected to prescribed treatments), and intensive (where customized techniques are applied to an input based on feedback from that input). Results showed that assembly line technologies were associated with low levels of several job characteristics (as measured by the Job Diagnostic Survey) relative both to national norms for the instrument (Oldham, Hackman & Stepina, 1978) and to job characteristic scores obtained for the mediating and intensive technologies. These results provide empirical support for the idea that certain technological systems do limit the presence of certain motivating characteristics of jobs.

Thus, any effort to redesign work in a technology that permits little employee discretion (e.g., long-linked systems) is probably doomed to failure from the outset, because of the mechanics of the system itself. The system has been designed to accommodate only segmented, routinized jobs. The only redesign activities that are likely to be feasible, then, are those that involve relatively small changes in the work itself (e.g., giving employees some choice of tools). However, as we have suggested earlier, this usually amounts to meddling with the work rather than enriching it--and the effects are likely to be neither substantial nor long-lasting.

These arguments suggest that if work is to be meaningfully redesigned

in an organization either: (1) the technology must be of the type which provides at least moderate employee discretion (e.g., mediating or intensive) or (2) the whole technology must be changed to be compatible with the characteristics of enriched work.

The latter route was taken, apparently successfully, when the management of Volvo planned its new automobile assembly plant at Kalmar (Gyllenhammar, 1977). It was decided early in the planning process to create enriched, challenging jobs at the new plant. The idea, however, was to design these jobs within a traditional conveyor line technology. As planning progressed, Gyllenhammar and his associates realized that the traditional technology and the innovative jobs were inherently incompatible. It became clear that if nontraditional, enriched jobs were to be created, a nontraditional technology also would be required. This realization led to cancellation of plans for the conveyor line and, instead, the development and installation of a technology permitting large amounts of employee discretion (e.g., moveable automobile carriers).

The cost of altering technologies can be very high and, in many cases, will be prohibitive. Volvo's nontraditional technology, for example, entailed an initial investment that was ten per cent higher than would have been the case if the traditional technology had been installed. Unless such an investment is made, however, the possibility for substantial and meaningful redesign of employee jobs is sharply reduced. Indeed, in many cases it will be advisable not to try to enrich work for traditional technological systems, but instead to find ways to manage people as effectively and humanely as possible within those systems.

To aid in such decision-making, and to increase understanding about the extent and dynamics of technological influences on the design of jobs,

better measures are required to assess the interdependencies between technological systems and the jobs that exist within them. The recent work of Rousseau (1977, in press) is a major step in this direction. But additional conceptual and empirical progress must be made before it will be possible to identify clearly those technological systems that are (and are not) appropriate for work redesign activities, and to specify what is required if enriching changes in jobs can be made within a given technological system.

#### Personnel System

In the interest of having a clear, fair, and concrete basis for recruiting, selecting and placing people on jobs, elaborate personnel systems often are developed in organizations. These systems often result in a set of fixed job descriptions that specify exactly who is to do what at work. As will be seen below, such job descriptions can introduce rigidity into how the work itself is designed, and limit flexibility in changing the duties of people who hold specific jobs.

Typically, a job description consists of a written statement that describes the basic duties and responsibilities of the jobholder (Wexley & Yukl, 1977). Job descriptions can be very elaborate and detailed. Consider, for example, "functional" job descriptions, which may specify all of the following (Fine & Wiley, 1974):

1. The action the employee is expected to take in the job. "A task statement requires a concrete, explicit action verb. Verbs which point to a process (such as develops, prepares, interviews, counsels, evaluates, and assesses) should be avoided or used only to designate broad processes, methods, or techniques which are then broken down into explicit, discrete action verbs" (p. 7-8).

2. The result the employee is expected to accomplish. "The purpose

of the action performed must be explicit so that (1) its relation to the objective is clear and (2) performance standards for the worker can be set" (p. 8).

3. The tools the employee is expected to use. "A task statement should identify the tangible instruments a worker uses as he performs a task; for example, telephone, typewriter, pencil/paper, checklists, written guides, and so forth" (p. 8).

4. The instructions an employee is expected to follow. "A task statement should reflect the nature and source of instructions the worker receives. It should indicate what in the task is prescribed by a superior and what is left to the worker's discretion or choice" (p. 8).

While an explicit, well-developed job description containing the information listed above can be useful to management in developing performance criteria and in determining selection, placement and training needs and practices, it also may impede the implementation of work redesign. In particular, descriptions that specify precise actions, tools and instructions for the jobholder provide so much detail, and so limit flexibility, that it may be impossible to meaningfully alter the design of any given jobs within a large, interdependent work system. In essence, work redesign is a difficult proposition because either (a) the whole job description apparatus would have to be changed if any subset of jobs within that system were changed, or (b) arrangements would have to be made for the focal jobs to be outside the traditional job description system.

These alternatives are likely to be resisted by numerous individuals who have a vested interest in maintaining the system as it exists--such as managers who created the system and who may be charged with maintaining and

enforcing it. Moreover, fixed job descriptions sometimes are the product of years of union-management negotiations, and are enforced with a legal, binding contract. Because of these conditions, both parties are likely to have vested interests in the descriptions. The very possibility of altering them clearly challenges these interests and creates the necessity for additional negotiations between management and the union.

In one instance, the administration of a university was convinced that work redesign was desirable for numerous secretarial jobs throughout the university. However, the personnel system of the university included a set of rigid secretarial job descriptions that had been accepted by both personnel officers and the employees' union. The implementation of the work redesign program would have involved substantial revisions in the secretarial job descriptions and salary schedules. This, of course, would have required new union-management negotiations concerning the job descriptions as well as additional discussions about salary for any revised job descriptions. After considering the possibility of these additional negotiations, the administration scrapped the entire work redesign project.

All of this suggests that having some "fuzziness" and slack present in job descriptions can be helpful in carrying out work redesign. If this slack is not present, and if the job descriptions cannot be circumvented or changed in major ways, then three possibilities exist. First, the redesign project will not be implemented at all (as in the university example given above). Second, a work redesign program will be implemented that is consistent with the explicit job descriptions. The probable result here is a relatively small change in the work content, producing few desirable results. A third possibility is that "fuzziness" will somehow be introduced into the job descriptions, prior to or simultaneously with the work redesign. It is in this

this latter situation that favorable results are most likely.

Research is now needed to determine the most effective process for introducing slack into job descriptions. In particular, we need to know about processes that will facilitate the loosening of descriptions without prompting excessive conflict between labor and management. Does the most effective process involve the union in an advisory capacity or in a fully collaborative role? What are the appropriate contributions by personnel officers in redesigning job descriptions? What are the consequences of job description changes alone on employee behavior and attitudes? Is it best to introduce changes in job descriptions prior to or simultaneously with work redesign? Answers to questions such as these should greatly enhance our understanding of the interdependencies between job descriptions and the design of work--and reduce substantially the number of work redesign activities that fail because they run afoul of existing personnel systems.

#### Control System

A third potential barrier to the implementation of work redesign is the organization's control system. By control system we refer to any "mechanical" system in place in the organization that is designed to control and influence employee behavior in an impersonal, impartial, and automatic fashion (Reeves & Woodward, 1970). Control systems include budgets and cost accounting systems, production and quality control reports, and attendance measuring devices.

Most control systems share certain structural properties (Lawler & Rhode, 1976). These are:

1. They collect, store and transmit information in the form of abstract measures of reality. Usually they deal with information in the form of quantitative measures intended for use by trained personnel.
2. The information is stored and transmitted in a specific form and

with a specific frequency.

3. The summarized information is distributed to a predetermined group of people. This group may or may not include all the members of the organization. (Lawler & Rhode, 1976, p. 6).

The existence of a control system with such properties obviously allows management to coordinate the activities of different jobs and departments. That is, redundancy of duties and tasks can be avoided by carefully specifying and measuring the behaviors of employees in different areas or jobs. In addition, control systems provide a basis for taking corrective action when employee behavior or work outcomes do not conform to standards.

However, control systems also tend to limit the complexity and challenge of jobs located within the system. Because it is important to pinpoint accountability, control systems often specify in considerable detail exactly who is to do what specific tasks--thereby restricting the autonomy in employees' jobs. Also, control systems often rigidify and standardize the work, so that performance indices can be developed and applied to all employees and work activities within the system.

An example of the effects of control systems on work design is provided in a study of the purchasing department in a large organization (Lawler & Rhode, 1976). A financial control system was designed both to provide information about work outcomes to higher management, and to prevent fraud and theft. In this situation, the control system required that employees who handled payments to vendors not talk with those vendors, and specified that each employee handle only a few of the activities necessary to pay the vendors. Thus, the jobs necessarily were routine and highly repetitive in order to meet the criteria for a "good" control system. The result in this particular case was low employee satisfaction and work performance.

Any subsequent attempt to redesign work in the purchasing department described above (or in other departments with rigid control systems) would probably result in only small changes in the work itself. For one thing, many control systems simply cannot tolerate substantial increases in the complexity of the work done by individual jobholders, or in the level of autonomy people have to manage their own work processes and procedures. Moreover, it may be difficult to introduce enriched job-based feedback for employees (a common change made when work is redesigned) and still have the control system function as intended. The reason is that data collected as part of the control system typically are supplied to staff personnel and line managers for use in managing unit performance. To redesign the work so that feedback comes naturally to the person who is doing the work (e.g., by having the jobholder do his or her own testing and inspection, or by placing that individual in direct contact with the "client" of the work) would throw many control systems into disarray. This is particularly likely if the form of the naturally-occurring feedback were not readily quantifiable or if it varied from job to job within the organizational unit.

To avoid the "small change" trap when work is redesigned in organizations where rigid control systems are already in place, it often is necessary to alter the control systems themselves as part of the work redesign activity. Unfortunately, significant redesign of control systems (and in particular "loosening" of them) is unlikely in many instances. In some cases, tampering with a control system may even be illegal. Certain government agencies, for example, require organizations to engage in specific, strict quality control activities. A contract may be awarded to an organization (or withheld from it) because of the organization's quality control procedures. The costs to an organization of loosening its procedures in such circumstances would

usually (and justifiably) be considered unacceptably expensive.

In addition, there may be large internal costs associated with altering or scrapping a control system. Establishing a good control system often involves a large initial investment, perhaps including the purchase of computer hardware and development of sophisticated programs to assess unit productivity and management performance. Altering such a system could involve the costly development of new control system technology in addition to the person-hours required to set-up the technology. Finally, whenever there is an organizational system in place, there are personnel whose own jobs depend on the maintenance of that system. Control systems are no exception: Attempts to substantially alter a control system (particularly if the idea is to "loosen" a technically sophisticated system) may encounter substantial resistance on the part of staff who have a personal and professional interest in the preservation and further refinement of the system in essentially its present form.

In summary, it appears that implementation of work redesign activities that involve substantial changes in jobs may often require simultaneous alteration of existing control systems. If such alterations are not feasible (e.g., for legal, economic, technical or political reasons), then the magnitude of the changes that can be made in the design of the work may be considerably restricted--and work redesign may not be advisable.

Unfortunately, there is almost no research available in the literature on the relationship between control systems and the design of work, so it is impossible at present to know just how serious a problem control systems typically pose for work redesign activities. Indeed, we do not even have descriptive data on how the characteristics of control systems and the properties of jobs within them are empirically related across organizational

units. Research on the interdependencies between control systems and the design of work seems to us well-warranted, both to further our understanding of the systemic properties of organizational units, and to provide practical guidance about the nature and magnitude of changes that feasibly can be made in organizational units that employ various types of controls over work and workers.

Summary: Constraints on Implementation

In this section we have suggested that rigidities built into an organization's technological, personnel, and control systems often can prevent the installation of meaningful changes in how work is designed. Attempts to redesign work within existing rigid boundaries typically result in small changes in the work itself--the kind that are likely to produce few desirable outcomes.

The organizational systems discussed above not only serve as a constraint in getting meaningful changes in jobs made, but also are part of the reason why the jobs may need to be changed. That is, each of the three systems reviewed itself tends to influence how jobs are structured, and we have seen that the type of job design that is consistent with a traditional technological system, personnel system or control system often tends to involve work that is routinized and simplified rather than complex and challenging.

So work redesign may be especially difficult to carry out successfully under precisely the circumstances when it is most needed to improve work motivation and the personal satisfaction of employees. The alternatives in such circumstances are three. The first is to decide not to redesign the work, and to look to other devices for improving the functioning of the organizational unit. The second is to proceed with work redesign despite the constraints posed by the technological, personnel and/or control systems.

This alternative risks on the one hand succumbing to the "small change" pitfall (if the systemic constraints are not overcome) and on the other to throwing the existing systems into disarray (if substantial changes somehow do get made, but are inconsistent with the functioning of the established systems). And the third alternative is to redesign the organizational systems themselves, either prior to or simultaneously with redesign of the work, so that they can accommodate and support employees' work on the enriched jobs. This alternative obviously is not an easy, risk-free or inexpensive undertaking. But in many cases it may be the only way to proceed if the risk of small change and the risk of organizational disarray are to be simultaneously avoided when work is redesigned.

It must be emphasized that the implications drawn above are little more than informed speculation. The hard fact of the matter, as noted earlier, is that we have few research data to use either in determining the magnitude of the incongruence that can exist between work redesign and existing organizational systems, or for developing strategies for dealing with that incongruence. To allow firmer and more trustworthy conclusions to be drawn regarding the phenomena we have been addressing, research is needed on the following questions.

1. When plans for work redesign fail to be implemented, or when implementation results only in small changes in the work itself, what are the factors that compromise the plans for change that initially were laid? Careful survey research on work redesign projects could help ascertain the degree to which the technology, the personnel system and the control system do have the constraining effects posed here--or could show that other aspects of the organization are far more significant in determining when significant changes in the work itself are, and are not, actually made.

2. What are the empirical relationships between the properties of the systems discussed here and the characteristics of the jobs that exist within them? Is it true that elaborate technologies, personnel systems and control systems tend to be associated with relatively routinized work? What specific job characteristics show the greatest covariation with different aspects of these organizational systems? As noted above, research on the relationships between technology and the design of jobs is already well-under way (cf. Rousseau, in press). But this is not the case for either personnel systems or control systems, and cannot be so until ways of measuring the key properties of those systems are developed--which is yet another challenging research task.

3. How do work redesign activities develop when initiated in various systemic contexts? Once data are available regarding the first two questions posed, it will be possible to conduct both comparative case studies and action research (using quasi-experimental methods) to trace what happens when work redesign interventions are made under organizational circumstances that vary in a priori "favorableness" to job changes. Ultimately, such research should help in the development of conceptual understanding of the relationship between organizational systems and the design of work. It should also provide a basis for planning and executing organizational changes involving work redesign that are much more differentiated and far less speculative than has been possible here.

#### The Congruence Between Organizational Practices and Redesigned Work

Getting substantial changes in the work made can be difficult enough, as noted in the previous section. But that is only half the story. Once such changes are in place, questions about the congruence of the enriched work with "standard" organizational policies and practices come to the fore.

As noted in the introduction to this chapter, even well-conceived and well-executed changes in jobs can fail to have lasting effects when they are inconsistent with the way the organization is managed.

Both the aspects of the organization that are addressed and the dynamics of their effects differ as we turn from questions about the magnitude of job changes made to questions about the persistence of their effects. Previously we focussed on intact, entrenched organizational systems; now we emphasize on-going managerial practices.

Although almost any policy or practice of management at least potentially can affect how people react to enriched work, we have selected for attention here four organizational practices that appear most likely to lead to the "vanishing effects" phenomenon described earlier. They are: (1) training practices, (2) career development practices, (3) compensation practices and (4) supervisory practices.

#### Training Practices

By training practices, we mean instructional processes initiated by the organization to improve the job-relevant knowledge, skill, or attitudes of organization members. Training is a very popular device for attempting to improve the motivation and productivity of employees. Yet the benefit of time and money spent on training programs appears to depend substantially on how the work of the trainees is designed. Indeed, we will see that sometimes training (widely viewed as an inherently valuable activity) can actually make things worse rather than better.

The irony is that training often is provided when it isn't much needed--and that training is eliminated in precisely those circumstances when it could have real benefits. Consider, for example, employees who work on simple, routinized jobs. Training is unlikely to have beneficial effects

for these individuals, since the requirements of the job usually can be mastered very quickly without any special instruction. [O'Toole (1975) has estimated that employees can learn most routine jobs within two weeks, simply by proceeding to do the work.] Because training is objectively unnecessary in such circumstances, it may be experienced by employees as an attempt by management to gain even more control over their on-the-job behavior. The result is likely to be no improvement in work performance (the employees knew all they needed to know to do the job already) and heightened feelings of frustration and disillusionment with management. Yet when managers note performance problems on simple jobs, training is one of the most popular and widely used techniques for attempting to correct those problems (Hackman & Oldham, in press, Ch. 2).

On the other hand, training activities sometimes are completely eliminated after the work has been enriched (Hackman & Oldham, in press). The belief, apparently, is that work redesign will solve all problems of job performance--and that employees will informally provide one another with help in gaining any new knowledge or skill that may be required. These are very optimistic assumptions. The actual consequences of work redesign sans training, in many cases, is an increase in the motivation of employees to work effectively (because of the improved design of the work itself) but a decrease in their capability to do so (because new skills are required that they do not presently hold).

We know of one example of this in a large transportation organization. The job of reservationist was enriched such that it required a variety of skills and abilities and a good deal of autonomy on the part of the incumbents. However, the organization neglected to provide employees with sufficient information about how they should go about completing the new,

enriched tasks. The result was a group of frustrated reservationists who were not able to take advantage of the new opportunities the enriched job provided.

It appears, therefore, that training programs can substantially affect the persistence of changes caused by work redesign. Two types of training may be especially useful in avoiding such problems. The first is "technical" training, to ensure that employees have the knowledge and the skills necessary to execute their enriched tasks competently. If work redesign has been successful, then employees will care more than previously about performing well. They should experience self-reward when they find they have done well, and feel displeased with themselves when they fail. A good technical training program for employees on enriched jobs can increase the likelihood that their work experiences are characterized more often by self-reward than by displeasure with their performance.

The second type of training that often is needed when work is redesigned has to do with the management of interpersonal relationships and decision-making processes. When work is designed in accord with the dictates of the scientific management approach, employees have little objective need to coordinate and negotiate with others to get the work done or to make decisions about work processes or scheduling. All such matters are decided by management, and specified in clear detail for those who actually perform the work. On enriched jobs, however, a great deal of decision-making and coordination may be required--and the prior work experiences of the employees may have provided them with few chances to exercise or hone their skills carrying out such activities. So even if the employees are competent to execute the technical aspects of their enriched work, problems may develop because of insufficient knowledge and skill about how to manage their new and expanded

work responsibilities. Training about such matters should be welcomed by the affected employees, and could have substantial benefits on work performance, on employee attitudes, and on the social climate of the work unit.

As yet, there have been few studies of the interactions between training activities and work redesign. While a great deal is known about how to design good training programs for specific purposes (Bass & Vaughan, 1968; Goldstein, 1974), there is still much to learn about the focus and timing of training programs that will be most helpful to employees whose work is being enriched. Two research questions seem particularly pressing. First, we need to know whether or not technical and/or interpersonal training will actually enhance work performance and employee satisfaction on enriched jobs--and, if so, how such training can best be structured. So far as we know, that question has yet to be addressed in the context of work redesign activities. Second, little is known about the most appropriate timing of training activities when work is redesigned. Should training for work on enriched tasks be done before the jobs are actually changed? That would help increase the "readiness" of employees for their expanded responsibilities--but the training might not have its intended effects because the trainees do not yet experience a real need for the knowledge provided and skills taught. Or should training come after job changes are made? Presumably the experienced need would then be present--but psychological and behavioral dysfunctions might already have appeared because needed knowledge and skills were not immediately at hand when work began on the redesigned jobs. If we wish to better understand the interactions between training practices and the design of work--and if we seek to minimize the risk of "vanishing effects" that stem from insufficient or inappropriate knowledge and skill--then research on questions such as those posed above would seem well-warranted.

### Career Development Practices

Career development, as used here, refers to the process by which a synthesis is worked out between employee aspirations and the opportunities for mobility that are present in the work environment. Ideally, this synthesis will result in the fulfillment of both individual and organizational objectives (VanMaanen & Schein, 1977). Specific organizational practices having to do with career development include job rotation, various promotional systems, and workshops on life planning and career development.

It is becoming clear that how people respond to their jobs is strongly affected by the stage of their career and their tenure on the job (Katz, 1978 and Chapter 3 of this volume). It appears, for example, that a person's responsiveness to motivational opportunities that are present in enriched work may be diminished both for very new employees (who may have their hands full just getting settled into the organizational routine) and for employees who have a great deal of experience on the job (who may have adapted more-or-less permanently to the existing properties of their jobs).

In this section, we look at the other side of the coin--namely, how career development practices may affect the success and persistence of work redesign activities. Rather than focus on individual responsiveness to job characteristics, we examine whether career development practices are appropriately responsive to the experiences individuals have on enriched jobs. As will be seen below, the effectiveness of a work redesign program may be significantly compromised if career development programs do not help individuals respond and adjust satisfactorily to their new on-the-job experiences, problems and aspirations. We will address the issue separately for three types of employee reactions to enriched work: those of the "overstretched" employee, those of the "fulfilled" employee, and those of the "growing" employee.

The overstretched employee. We have suggested previously that work redesign may not be appropriate for certain people--such as employees with weak needs for personal growth, or with knowledge and skill that are not appropriate for the demands of the job (Hackman & Oldham, 1976, in press). These individuals may find enriched work threatening, and may balk at being "pushed" or stretched too far by the work. When employees are overstretched, adverse consequences may appear both for the persons involved and for their employing organizations (cf. Blood & Hulin, 1967; MacEachron, 1977; Turner & Lawrence, 1965). Examples include an increase in personal anxieties, psychological or behavioral withdrawal from the job, and various counter-productive activities that express employees' displeasure with the newly enriched work.

Typical career development practices (e.g., life-planning workshops and promotional schemes) that are geared to the upwardly mobile employee may be completely out of place in this situation--and produce few desirable outcomes. If management is interested in retaining overstretched employees, alternative career development practices that are responsive to their special situation may be in order.

One such approach assumes that the growth aspirations of over-stretched employees can and will be "rekindled" by the work itself. The idea is that after experiencing challenging work, employees may begin to desire it and respond positively to it. Under this assumption, then, some form of employee counselling might be all that is required to help overstretched employees begin to take advantage of the opportunities available in the enriched work. Later, after the enriched work had been mastered and the initially overstretched employees were comfortable with it, then discussions of further career opportunities would be initiated.

A second approach assumes that the overstretched employee is not likely

to grow to meet the demands of enriched work. In this case, creating alternative, downward career paths that lead to simpler jobs more consistent with the employees' needs may be in order. This might involve creating new, non-challenging jobs or transferring employees presently in lower level jobs to create additional openings for work on those jobs. In either case, the downward movement of the overstretched employee would require downward transfers to be legitimized. This would be difficult in many organizations because of strong norms against any downward movement. To overcome this norm, it might be necessary to begin by moving downward obviously competent employees who would prefer less demanding work (Hall, 1976).

Which assumption is correct--that employees will, or will not, gradually come to value and respond positively to enriched work that initially is psychologically threatening to them? There is, at present, little research evidence on the topic, and that which does exist is inconsistent (e.g., Andrisani & Nestel, 1976; Brousseau, 1978; Hackman, Pearce & Wolfe, 1978; Kohn & Schooler, 1976; Hall, Goodale, Rabinowitz & Morgan, 1978). Further research is needed on this question, as it is on strategies for structuring and legitimizing opportunities for downward transfers for overstretched employees on enriched jobs who remain that way even after a period of support and counselling.

The fulfilled employee. A second type of response to work redesign is a state of "fulfillment." By this we mean that individuals are basically satisfied with the responsibilities and challenges of their newly enriched jobs. Fulfilled persons perform well at work, but have no particular desire to move upward in the organizational hierarchy. Instead, they are pleased with their jobs and want to retain the amount of responsibility they presently have. Career development practices designed for the upwardly mobile

employee may be inappropriate for the fulfilled individual. Indeed, such practices run the risk of overstretching these employees. As suggested earlier, this can have adverse consequences--especially if the employee is performing well on his or her current job.

What are the career development practices that may be appropriate for fulfilled employees? What would one do to retain current levels of challenge and responsibility (and thereby avoid the risk of overstretching the employees), yet not create conditions where stagnation may emerge? Two types of developmental practices may be especially appropriate in these circumstances.

The first is traditional job rotation. In this practice individuals are periodically rotated through jobs where new learnings and skills can be obtained, yet which require little permanent or additional responsibility. Rotation, then, essentially involves short-term movement with employees eventually returning to their regular positions.

A second possibility is the formation of lateral career paths (Schein, 1978). These paths allow employees to move into different functional areas (e.g., manufacturing and finance) at approximately the same horizontal level in the organization. While these paths provide opportunities for movement, movement takes place without increases in responsibility. Thus, these paths should be attractive to an employee who is basically content with the level of responsibility in his or her current position.

As with the practice of downward transfer discussed earlier, there may be a stigma attached to job rotation and lateral career paths because historically employees who have moved anywhere but upward have been viewed as "failures." This stigma is not likely to be an easy one to reshape, but formal and public policies that directly legitimize (and even reward) lateral movement may ultimately create a positive image for such practices.

The growing employee. Another possible response to work redesign programs is movement by employees into a "growth cycle." In this condition, employees are so stimulated by the enriched nature of their work that they seek even higher levels of responsibility and additional opportunities for on the job learnings. After a period of time, then, employees who initially were challenged and stimulated by an enriched job may find that the job now provides insufficient opportunities for continued growth.

If action is not taken for employees in this situation, stagnation and disillusionment may result. Because they are no longer being stretched by their work, these employees may feel that their careers are at a standstill. Further, they may come to believe that the organization has little interest in providing the kinds of opportunities they seek, and therefore begin to look to other organizations for more challenging work.

Organizations might reduce the likelihood that human resources will be wasted in this fashion by installing career development practices tailored to meet the needs of the "growing" employee. Such practices should provide individuals with increasing responsibility and with opportunities to continue to grow and develop within the organization. Two such practices are described below.

The first involves establishing hierarchical career paths that allow individuals to move upward within their function to levels of leadership and authority (Schein, 1978). Such paths should provide persons new growth opportunities simultaneously with increases in responsibility for organizational outcomes.

Second, special assignments might be offered to the "growing" employee. These would be short-term, challenging jobs filled with opportunities to exercise authority and creativity. Because opportunities for hierarchical

mobility will always be limited by the relatively small number of top positions in organizations, some ingenuity in designing stimulating short-term assignments would seem well worthwhile in organizations where significant numbers of employees have demonstrated increased (rather than diminished) desires for further growth and development after work redesign.

While the career development practices suggested in this section clearly are not exhaustive of what might be done to support and follow-up work redesign, they do indicate the diversity of activities that may be called for if (as predicted) it turns out that different employees respond differently to the enrichment of their work. It would be informative to have research findings in hand to help in matching particular types of employee responses with particular kinds of career development activities. Perhaps of particular use would be research on the following three topics. First, can employees in fact be partitioned according to their dominant response to enriched work (i.e., over-stretched, fulfilled, and growing), and what are the major antecedents and consequences of these response patterns? Or is the typology useful only for heuristic purposes? Second, how malleable are employee needs and career aspirations as a function of work experiences and opportunity structures in organizations (Kanter, 1977)? Once "set" by experience (perhaps early in life) do needs and aspirations remain mostly unchanged until opportunities for their expression arise? Or do work experiences constantly shape and reshape what people want and need in their careers? As noted above, evidence on these issues presently is scattered and inconsistent. Finally, how can alternative, non-traditional (and non-hierarchical) career paths be established and legitimized within organizations? How can the stigma that is attached to all-but-upward job changes be ameliorated to allow increased flexibility in achieving good fits between people and their jobs? Such

questions will be difficult to research--but they are important if we are to significantly advance present understanding of the interactions between how work is designed and how careers evolve within organizations.

#### Compensation Practices

How people are paid for their contributions to the organization also can adversely affect the persistence of work redesign activities, and can neutralize some of the beneficial effects of enriched jobs. Three aspects of compensation arrangements are dealt with here: (a) the absolute level of pay desired by employees after their jobs have been redesigned, (b) the form of payment (i.e., contingent vs. non-contingent), and (c) the focus of the compensation system (i.e., on individual employees, work groups, or larger organizational units).

Absolute level of pay. One of the controversial issues connected with the practice of work redesign is its possible impact on employees' demands for pay. On the one hand, some commentators have argued that enhancing employees' responsibilities through work redesign usually results in demands for more money, because people simply expect higher pay for greater responsibility (Lawler, 1977). Alternatively, it has been suggested that enriching the work content only rarely leads to demands for higher pay (Walters & Associates, 1975). The argument here is that responsibility at work and pay demands are basically independent of one another--and, indeed, that an improved job may provide sufficient psychic rewards that more material rewards would be motivationally superfluous.

We know of no systematic research that has contrasted these viewpoints. Furthermore, we have observed cases where additional money is demanded after work redesign--and cases where it is not. It appears that under some circumstances employees do view pay and responsibility as interconnected, while

other times they seem to perceive pay and work content as unrelated.

What is clear is that if some (or all) employees in a work unit become dissatisfied with pay levels, undesirable consequences are likely. We have demonstrated previously, for example, that pay dissatisfaction can distract the attention of employees from enriched work and orient their energy instead toward coping with this more pressing problem (Oldham, Hackman & Pearce, 1976). The result may be relatively low levels of motivation and performance on enriched jobs.

If such consequences are to be avoided, some improvement in the level of pay offered employees following work redesign may be required. One approach to the problem is to give all employees in the affected work unit substantial pay increases as a sign that the newly enriched jobs are important, and that management is serious about the changes being made (Lawler, 1977). Alternatively, savings that result from the work redesign program might be shared with employees in the work unit on a proportional basis (Walters and Associates, 1975). Either of these approaches seems likely to reduce pay dissatisfaction that results from work redesign, and thereby increases the chances that behavioral changes prompted by the enriched jobs will persist. At present, however, there are no studies in the literature that compare the effects of the "flat increase" and the "gain sharing" strategies for raising compensation levels following work redesign.

Also at issue is the timing of changes in compensation arrangements for employees. One possibility is to design and announce a new pay plan prior to (or simultaneously with) changes in the work itself. Alternatively, several plans might be developed prior to the changes but held in reserve until (and unless) signs of pay dissatisfaction appear following work redesign. The first approach heads off possible problems with pay level before any damage

is done--and provides to employees a sign of management's good faith before the changes themselves are made. The advantage of the second approach is that the pay plan that eventually is introduced can be tailored to the particular compensation problems that emerge. Again, there presently is no research that examines the consequences of these alternative approaches.

Form of payment. When jobs are enriched, how should people be paid? Is it advantageous to use salaries, hourly wages, or some type of incentive or bonus for good performance? There is a good deal of controversy about the matter. On the one hand, some commentators (e.g., Deci, 1971) have argued that contingent rewards (e.g., bonuses) may be inappropriate for tasks that are intrinsically meaningful and interesting. The reasoning is that the employee paid on a contingent basis may conclude that he or she performed the task because of the external reward, and, therefore, that the task must not be very satisfying or interesting in and of itself. According to this view, a bonus system could change an employee's perception of the reasons for his or her behavior and ultimately diminish the motivational benefits of enriched work. Several laboratory investigations support this basic position (see Deci & Porac, in press; and Staw, 1976 for reviews).

Advocates of Deci's position argue that non-contingent rewards (e.g. salaries or hourly wages) are most appropriate for and supportive of enriched work. These rewards are seen as allowing individuals to experience all the benefits of redesigned work. Moreover, salary plans provide employees with freedom and flexibility and treat individuals as mature adults. In this sense, salary systems encourage responsibility and trustworthiness among employees--which is compatible in spirit with most work redesign programs.

A contrasting position is that contingent pay plans (e.g., bonuses and piece-rate systems) are perfectly appropriate for enriched jobs. The

notion is that the rewards available from the pay plan and those available from the work itself are additive. Thus, work motivation should be maximized when employees are paid contingently for performance on enriched tasks. There also is evidence that supports this view (e.g., Arnold, 1976; Hamner & Foster, 1975; Wyatt, 1934). For example, the Hamner and Foster research contrasted the effects of three pay systems (i.e., no pay, non-contingent pay, and contingent pay) for people working on a meaningful task. Results showed that individuals performed best when paid on a contingent basis.

What are we to conclude from these seemingly contradictory findings? Is it more appropriate to use non-contingent or contingent payment systems for enriched work? The answer, we believe, may depend on the following two factors.

The first factor is the degree to which it is possible to measure the output of enriched jobs. For many such jobs, this would involve measuring whole work units rather than small segments of the work. Simple quantity of output may not be the most appropriate output measure. As we have previously suggested, quality of the work performed is more likely than work quantity to be enhanced through work redesign (Hackman & Oldham, 1976). To the extent that managers and employees agree about what work outcomes should be measures (and how they should be measured), contingent pay systems may be indicated. When there is no agreement or when measurement is impossible, non-contingent systems (e.g., salary) may be more appropriate and more motivationally effective.

A second factor is the level of trust between management and employees (Lawler, 1971). Contingent reward systems may be incompatible with enriched work if employees perceive the systems as attempts by management to control and manipulate their behavior on enriched jobs. In such cases, any motivational

advantages of contingent systems may be more than offset by suspicion of them, and salary plans may be more appropriate. If, on the other hand, there is high trust in the organization, employees are more likely to believe that the plans will be administered fairly--and they may see them as a fair and appropriate means of sharing in the gains generated by high work productivity. In such circumstances, contingent payment systems would seem fully congruent with enriched, challenging work.

Focus of the compensation system. If a contingent reward system is used to compensate people for their work on enriched jobs, then a decision must be made about whether to administer the system on the basis of individual, group, or organization-wide performance. We concur with Lawler (1977) that the appropriate focus of the system depends on the amount of interdependence that characterizes the design of the work itself.

When employees are basically independent of one another, it is most reasonable to use an individual reward plan. Employees are paid for their own performance, not that of others in the organization. There are numerous jobs for which employees work quite independently (e.g., salespersons) and where individual pay plans have been used with success.

On the other hand, when work has been designed for a group of employees, individual plans may not be appropriate. In such cases, it may be difficult to measure individual contributions to the group product, and therefore difficult to reward individuals differentially. Moreover, individual incentives usually do not reward employees for cooperation and teamwork--which often are essential for effective group performance (see Hackman, 1978).

So, for group work design, some type of group incentive system usually should be most effective. Individuals would share rewards for completion of the group task--not for completion of their own part of the task. Such

group incentive schemes have been used successfully in many socio-technical work redesign projects (see Davis & Trist, 1974).

Finally, unit- or organization-wide incentive plans (e.g., Scanlon plan) may be most effect when cooperation is necessary (or desired) among all employees in the organization, or when the contributions of individuals or groups to organization-wide performance cannot easily be disentangled. In these plans, bonuses based on measures of unit or company performance are given to all employees. When they are functioning properly, the better the organization functions, the better off are the employees. It is to the advantage of employees to produce more, to cooperate with others, and to adopt new procedures and technologies (Lawler, 1977).

Conclusion: Compensation practices. It is clear that there are major interdependencies between how work is designed and how people are paid. These interdependencies have to do with the level of pay that employees find satisfactory after their work responsibilities have been expanded, with the form of payment (i.e., contingent vs. noncontingent), and with the focus of the compensation system (i.e., individual vs. group vs. larger organizational units). Yet solid research findings are not available to help answer key questions that have been addressed in our discussion of compensation practices for enriched jobs. Here are some of the issues that seem to us to be especially in need of systematic research.

What factors influence the beliefs and attitudes of employees about their pay after job responsibilities have been expanded or enriched? When will people feel that a "better job" is compensation in itself, and when will they feel that they are being "exploited" by doing more work for the same pay?

At what time should attention be given to compensation arrangements in

a work redesign project? Before the changes, simultaneously with them, or after work has begun on the enriched jobs? What are the special benefits and risks associated with each of these alternatives?

What factors moderate the effects of contingent vs. noncontingent compensation arrangements for work on enriched jobs? Do the factors we have suggested (measurability of work outcomes and level of employee-management trust) most strongly determine when contingent payment will be effective, or are there other more powerful factors that must be accounted for?

How important is the level of interdependence among employees in determining the consequences of individual-focussed (vs. group- or unit-focussed) compensation arrangements? What other variables must also be considered in understanding the impact of pay plans with different foci on employees who perform enriched jobs?

We have generated hypotheses about all of these questions in preceding pages, but throughout we were forced to rely on speculation, on our own experience and observations, and on a smattering of research findings--which often were uncontrolled case reports. Given the apparent importance of compensation practices in determining when the effects of work redesign will prosper (and when they will disappear over time) more systematic research on questions such as those posed above strikes us as being of very high priority.

#### Supervisory Practices

The final set of practices to be considered deals with the behaviors of first-line supervisors toward employees whose jobs have been redesigned. Research has demonstrated that enriching employees' jobs can cause serious strains in the relationship that exists between them and their supervisors (Alderfer, 1967) and numerous case reports have shown that such relationship

problems can lead to an early and unanticipated demise of even well-conceived change projects.

These strains may be rooted in changes in the role of the supervisor that accompany the redesign of rank-and-file jobs. In many cases, autonomy, decision-making responsibility, discretion, and quality control activities are removed from the job of the supervisor and assigned to their subordinates as part of the enrichment process. Such shrinkage of the responsibilities of the supervisor may result in a substantial (and not necessarily constructive) change in the supervisor's behavior.

This apparently is what transpired in a study of the effects of work redesign on telephone operators' reactions to their work (Lawler, Hackman & Kaufman, 1973). Many of the responsibilities of first line supervisors were assigned to the operators, which resulted in supervisors experiencing large amounts of "free time" after the changes had been made. Most of the supervisors chose to use this time to supervise the operators rather closely as they worked on their newly enriched jobs. Post-change assessments showed few changes in employee motivation or satisfaction--but a substantial decrease in operator perceptions of the respect and fair treatment they received from their supervisors. The authors attributed the failure of the project to generate improvements in motivation or satisfaction to this deterioration in supervisor-subordinate relationships.

The pattern of results obtained in this study is consistent with the more general notion that reducing a supervisor's autonomy and power often prompts over-controlling, rules-minded and excessively critical behaviors on the part of the supervisor (Kanter, 1977). Such behaviors can more than offset any positive changes in employee motivation and satisfaction resulting from the enrichment of the work itself.

How might such counter-productive behaviors by supervisors be avoided when work is redesigned? The usual approach, of course, is to send the affected supervisors off to a training program where they would learn how to behave in ways that are constructive and supportive of their subordinates. The problem is that such programs have been shown to be largely ineffective in generating lasting changes in managerial attitudes and behaviors (Campbell, Dunnette, Lawler & Weick, 1970).

What may be required, then, is to redesign the supervisor's job, so that providing support for subordinates in performing their enriched tasks becomes a natural part of the supervisor's own responsibilities. Among the tasks that could be built into the supervisor's job are the following (cf. Walters & Associates, 1975):

- \* Gathering data for charting trends and forecasts in work volumes and workforce needs
- \* Training employees in their new responsibilities, and counselling with them about both work-related problems and career opportunities
- \* Helping subordinates set performance goals, and reviewing with them their performance in attaining those goals
- \* Providing increased openness of communication both upwards (i.e., sharing employee concerns with higher management) and downwards (i.e., sharing with employees information about changes in organizational objectives and policies)
- \* Developing and testing with subordinates innovations in methods and procedures for executing and coordinating the work
- \* Working on aspects of the work context (e.g., compensation, control systems, opportunity structures, equipment and space) that may be causing dissatisfaction or impeding employees' work
- \* Managing the evolution of the job enrichment process itself.

The focus of these activities is to support subordinates in performing their work effectively; the list does not include such traditional supervisory activities as direct monitoring of subordinates' behaviors, checking their work, or serving as disciplinarian. Many of the tasks listed require

that the supervisor turn his or her attention upward and outward in the organization--managing the organizational context so that it facilitates high subordinate motivation and effective work performance. Thus, if the supervisor is to perform these tasks well, his or her own job must contain considerable responsibility, discretion and control. These qualities would have to be pushed down to the supervisor from higher levels of organizational management--and the net effect would be to enrich the supervisor's job, just as previously had been done for the subordinates' jobs.

Such changes in supervisory jobs should prompt more supportive and effective behaviors by supervisors for at least three reasons. First, supervisors now would have the power to help their subordinates in meaningful ways. For example, the supervisor might have some significant influence over the pay system in his or her unit, or the career development practices that are available to employees. As we have seen, attention to organizational practices such as these can enhance the likelihood that work redesign changes will persist.

Second, because of his or her new responsibilities the supervisor should have less free time to closely supervise. In fact, there might be so many time constraints and demands that supervisors would be forced to give even more freedom and discretion to their employees.

Finally, because the supervisor feels that he or she is now an integral member of the management team, he or she is likely to have a greater investment in the success of the redesign effort. This should result in behaviors that directly support the redesigned work--especially if supervisors have been trained in the skill of helping (rather than bossing) their subordinates, and if they have been personally involved in the redesign of their subordinates' jobs.

The idea that supervisory work redesign can create appropriate behavioral patterns in supervisors is supported by a study by Davis and Valfer (1966). These researchers investigated the impact of a supervisory work redesign program on both the behavior of the supervisors and the performance of their units. Supervisors were given authority and responsibility for controlling all operational and inspection functions required to determine final acceptance of the products or services assigned to their work groups. After this change, most supervisors began to rotate workers and to provide training to facilitate worker interchangeability. Moreover, some supervisors assigned inspection activities entirely to employees. Supervisors found that they had less free time than before, and they felt less dependent on their superiors. The net effect was an improvement in work quality and stable levels of productivity.

Further studies along the lines of the Davis and Valfer research would be very helpful in understanding how the behavior of supervisors can support (or counteract) the effect of enriched work on rank-and-file employees. Also useful would be simple descriptive studies (including survey research) to provide documentation of what changes typically occur in the jobs and the behaviors of supervisors when their subordinates' work is redesigned. Perhaps especially informative would be detailed case studies, rich with descriptive detail, of how supervisors react to the changes that are made when job enrichment is carried out in their work units. Such research surely would yield numerous new hypotheses about the person and the role of the supervisor in work redesign projects--hypotheses that are both more detailed and conceptually richer than the speculations we have been able to set forth here.

### Work Redesign and the Role of Middle Managers

We have examined in this chapter several organizational systems and practices that may interact with the redesign of work--sometimes amplifying the effects of enriched work, sometimes counteracting them. In the first part of the chapter, we identified three organizational systems that can constrain the installation of large meaningful changes in the work itself: the technological system, the personnel system, and the control system. When attempts are made to redesign work in an inhospitable systemic context, we argued, the most likely outcome is a set of small changes that can have few noticeable or lasting effects. Work redesign will fail in such circumstances simply because the work itself cannot be changed substantially enough to make a difference in how people behave at work.

Next we highlighted four organizational practices that may compromise the "staying power" of changes that result from enriched work: training practices, career development practices, compensation practices, and supervisory practices. When these practices support the kinds of attitudinal and behavioral changes that are brought about by work redesign, then the effects of the job changes should be both strong and lasting. When organizational practices are incongruent with the new attitudes or behaviors, however, then the benefits of enriched work are unlikely to persist over time--the "vanishing effects" phenomenon we discussed at the start of the chapter.

Throughout the chapter we have lamented the paucity of research findings that relate directly to the phenomena we have been addressing, and we have posed numerous research questions that could aid in understanding the relationship between work redesign and those systems and practices that characterize the organization in which it takes place. Yet there is a more general hypothesis, never stated explicitly, that underlies the very organization of the chapter. It is that the intact systems that characterize an organization (and in

particular, the technological personnel and control systems) have a substantial effect on the magnitude of changes that are made when work is redesigned--but not much of an impact on the persistence of the effects of work redesign. The management practices of an organization, on the other hand, are viewed as having a substantial impact on persistence of work redesign effects--but as having little influence on the magnitude of the job changes that are made. This general hypothesis, like most of the smaller ones scattered throughout the chapter, awaits research test.

Regardless of the validity of our organizing hypothesis, it does seem to us indisputable that both the "small change" and "vanishing effects" phenomena are properties of organizations as social systems. And for this reason, it seems necessary to stop construing work redesign as a short-term, limited focus "fix" for specific attitudinal and behavioral problems observed among rank-and-file workers. Instead, it appears more appropriate to view changes in how work is structured as involving alterations in how the social system as a whole functions--and as something that will affect and be affected by other aspects of that system.

One implication of this view is that we need much better understanding than we presently have of the role of middle management when jobs and work systems are redesigned. In many organizations, middle managers, much more than supervisors or top managers, have responsibility for the organizational systems and practices that we have identified as critical to the potency and persistence of changes resulting from the redesign of work (cf. Oldham, 1976). It is the middle manager, for example, who is most likely to be in a position to alter control systems or to initiate a change in the work technology; it is he or she who may be able to revise compensation practices, or to redesign the job of a subordinate manager.

The role of the middle manager in the work redesign process is not an easy one. He or she must not only take responsibility for assessing existing organizational systems to see whether plans for change should proceed, but must also worry about bringing other managerial practices into congruence with the revised work system after jobs are changed. Moreover, while all of this is going on, the middle manager will need to deal with the fact that responsibilities are being pushed down in the organization--i.e., first line responsibilities to the rank-and-file, second line and staff responsibilities to first line--and that eventually the design of his or her own job may be affected, not necessarily for the better, by the change process as it continues to unfold.

Little presently is known either about how middle managers involve themselves in the process of work design, or what kinds of behaviors and managerial strategies are more likely to facilitate rather than impede effective change in how jobs are structured. So research is needed not only on the interdependencies between work redesign and organizational systems and practices, but also on the key role of middle managers in system-wide change processes that involve alterations in the design of work. Until we have better understanding of how interdependent and sometimes-conflicting organizational systems fit together when changes are made in the design of work, and how managers respond to the clashes that can occur among these systems, we are not likely to generate a very robust understanding of either the "small change" or the "vanishing effects" phenomena that prompted us to write this chapter in the first place.

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Footnote

1. The organization of this chapter is based on two underlying assumptions. First, throughout the chapter we treat organizational systems and practices as separate and unique properties. Organizational systems will refer to formal, structural characteristics (e.g., technological systems) that are firmly entrenched in the organization itself. Organizational practices will refer to on-going managerial programs and processes that are directed at employees (e.g., career development practices). A second organizing assumption is that systems and practices have differential effects on the implementation of work redesign and its persistence in the organization. The argument is that structural systems in place in the organization are most responsible for preventing or blocking the actual installation of work redesign. On the other hand, we suggest that managerial practices primarily influence the degree to which the effects of work redesign will persist over time. Both of these arguments (i.e., that systems and practices are independent and have differential effects) are based on our observations of various work redesign projects, and provide an organizing framework for the chapter. However, we have little empirical data to support these arguments, and they clearly await research test.