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**Job Design: A Contemporary  
Review and Future Prospects**

**CEO Publication  
T 93-12 (232)**

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## **Job Design: A Contemporary Review and Future Prospects**

Job design is one of the most discussed and studied concepts in the entire field of organizational behavior (O'Reilly, 1991). Indeed, job design has become one of the core topics, alongside the study of individual differences, motivation, leadership, group dynamics, and a few others, that comprise the fundamental literature of the field. The purpose of this chapter is to summarize the historical development of job design theory and research, describe current theory and research regarding job design, and suggest new directions that job design theory and research might more fruitfully pursue in the future.

### **The Nature of Job Design**

While job design has a generally accepted meaning in the field, there is also some ambiguity as to its meaning. Thus, we will begin by defining job design and highlighting its importance. We will then discuss the motivational basis of job design and summarize early approaches to job design.

### **The Meaning and Importance of Job Design**

Over the years, the term job design has been used interchangeably with terms such as task design and work design. In general, this usage is usually meant to convey an approach to structuring the jobs of individuals so as to optimize such organizational outcomes as efficiency, quality, and productivity with such individual outcomes as satisfaction, motivation, and personal growth. This perspective on jobs has generally been differentiated from attempts to better understand job properties for selection and training purposes (i.e., job analysis), for compensation purposes (i.e., job evaluation), and for purposes of efficiency with little regard for humanistic consideration (i.e., human factors). In this chapter we will use job design to refer to the study of jobs, tasks, and constellations of tasks that encompasses properties, perceptions, and

responses to properties and/or perceptions. It thus includes job enrichment, job enlargement, job characteristics models, and social information processing perspectives.

Job design is clearly an important avenue of research for a variety of reasons. Its primary importance stems from the fact that a person's job is his or her most fundamental point of contact with the organization. Individuals may interact with their leaders on a fairly regular basis, for example, but still spend the majority of their time working away from them. Similarly, contact with co-workers may be frequent but still only periodic. But most people spend much of their time at work performing their job--it's what they do, it's why they come to work, and it's why they are rewarded. Thus, the person-job interface plays a major role in shaping how an individual perceives and responds to not only that job but the overall organization as well.

### **The Motivational Basis of Job Design**

It is the motivational basis of job design that gives the topic its essential identity and focus. While not every approach to job design deals with motivation, motivation is nevertheless one of the most common outcomes variables studied in relation to jobs. Moreover, even perspectives that do not explicitly include motivation often consider performance, satisfaction, effort, and absenteeism, all of which can be linked with motivation. The goal of some approaches has been to learn how to design jobs so as to improve motivation. In other instances, the presumed relationship has been more indirect and the focus has been on improving related phenomena such as job satisfaction or organizational commitment.

Regardless of how it is cloaked, the basic thrust of most job design theory and research has rested on the premise that job design and motivation are linked. The implicit belief that has guided this work has been that the design of jobs can be altered so as to motivate job incumbents to work harder, to do higher quality work, to do more work, and to be more satisfied as a result of having worked.

## **Early Approaches to Job Design**

While the historical details cannot be clearly documented, job specialization as expounded by Adam Smith (1776) was probably the first formal attempt to design jobs in the context of some framework of efficiency. Frederick Taylor's scientific management (Taylor, 1911) represented the first modern effort to design jobs so as to bring about some desired organizationally-relevant outcome.

As some of the fundamental shortcomings of extreme specialization began to surface (i.e., boredom, low levels of job satisfaction and motivation), managers and researchers attempted for the first time to optimize organizational and individual considerations. Organizations experimented first with job rotation and then job enlargement in an effort to enhance employee satisfaction and motivation while simultaneously improving performance. Ultimately, however, researchers learned that these approaches to job design were so simplistic in their assumptions and operationalizations as to have little real impact (see Griffin, 1982 for a review).

## **The Job Attributes Approach**

Herzberg's early work on job enrichment served to focus renewed attention on the importance of jobs in organizational settings (Herzberg, 1966; 1968). Most modern approaches to the study of job design, however, can trace their roots to early work that was concerned with identifying and studying job attributes. In a landmark study Turner and Lawrence (1965) identified and studied the effects of six job attributes--variety, autonomy, required social interaction, opportunities for social interaction, knowledge and skill required, and responsibility. They found that these attributes were positively associated with attendance but not satisfaction. Further analysis of their data led them to conclude that some employees were more satisfied with jobs with higher levels of these attributes, while other employees were less satisfied with the presence of those same attributes.

Hulin and Blood (1968) extended the role of individual differences by introducing the Protestant work ethic (Weber, 1947) construct into the job design literature. Hackman and Lawler (1971) refined this construct by reframing it into a motivational context. They suggested that higher-order need strength was the key moderator in the relationship between perceptions of task attributes and various outcome variables.

The task attributes approach reached its culmination with the development of the job characteristics model (Hackman & Oldham, 1976; 1980). The job characteristics theory suggests that five core job dimensions (skill variety, task identity, task significance, autonomy, and feedback) influence three critical psychological states (experienced meaningfulness of the work, experienced responsibility for outcomes of the work, and knowledge of the actual results of work activities). These states, in turn, are predicted to affect four outcome variables (high internal work motivation, high quality work performance, high satisfaction with the work, and low absenteeism and turnover). Employee growth need strength was predicted to moderate the relationships between core job dimensions and critical psychological states, and between the psychological states and the outcomes.

The job characteristics theory spurred a large body of research. While much of this work was generally favorable (e.g., Orpen, 1979), it was also subject to criticism on a number of points. For example, as noted by Roberts and Glick (1981), the research evidence is often contradictory and most of it is subject to common-method variance problems. For example, most research on the job characteristics theory has relied heavily on a single instrument, the Job Diagnostic Survey (Hackman & Oldham, 1980). Still, the job characteristics theory has come to occupy a prominent niche in the organizational behavior literature (O'Reilly, 1991).

### **The Social Information Processing Approach**

In response to criticism regarding the job characteristics theory, Salancik and Pfeffer (1977, 1978) proposed an alternative perspective on job design called the social information processing (SIP) view. Salancik and Pfeffer point out that existing models of job design are



based on the assumption that individuals in organizations have fundamental needs they desire to satisfy and that properly designed jobs can be an important avenue for achieving need satisfaction. They argue against the validity of this assumption and also call into question the distinction between perceived and objective job properties. In particular, they argue that the social environment of people in organizations provides them with cues about which dimensions are salient and how those dimensions should be weighted and evaluated.

Again, several studies were conducted and published purporting to test the SIP approach (e.g., O'Reilly & Caldwell, 1979; Weiss & Shaw, 1979). These studies usually provided subjects with social cues about the jobs they were performing and then assessed differences in perceptions and attitudes between those who received positive cues and those who received no cues or negative cues.

The results of this body of research were both encouraging and troubling. On the one hand, the SIP model received generally positive support (see Thomas & Griffin, 1983, for a review). On the other hand, little evidence was uncovered to refute the basic premises of the job characteristics theory.

To better assess the relative merits of the job characteristics theory and the SIP model, Griffin, Bateman, Wayne, and Head (1987) designed and conducted a sophisticated laboratory experiment to test both main and interactive effects of objective task properties and social cues about those tasks. Subjects worked for one hour performing jobs that were either very high or very low on core job characteristics. While they worked, they also received either positive or negative cues about the job they were performing. Measures of both job perceptions and attitudes were then taken. Subjects then either changed to the other job or kept performing their original job.

In addition, they either received the other set of cues or continued with the same set. Measures of perceptions and attitudes were then taken again. It was found that changes in job characteristics and social information resulted in predicted changes in perceptions and attitudes. In addition, it was found that when job characteristics and social information were changed in the

same direction (e.g., both made more positive) the resulting changes in perceptions and attitudes were even greater. Moreover, it was found that when job characteristics and social information were changed in opposite directions (e.g., job characteristics made more positive and social information made more negative) the changes tended to neutralize each other and perceptions and attitudes remained essentially unchanged. These results provided reasonable support for both the job characteristics theory and the SIP approach. However, even stronger support was found for an interactive model that suggests that job characteristics and social cues work in concert to shape perceptions and attitudes.

In contrast to the job characteristics theory (cf., Griffin, 1991), however, there have been no longterm field studies of the social information processing model nor of the interactive model proposed by Griffin et al. (1987). Thus, field support for either the SIP model or an interactive model is unfortunately weak.

### **Contemporary Perspectives on Job Design**

Some scholars believe that the field of job design has become stagnant. However, during the past few years there have been several interesting and progressive attempts to reenergize the field and begin to move it forward again. Three recent developments in the job design literature will be discussed in this section. First we discuss the interdisciplinary approach to job design (Campion, 1988; Campion & Thayer, 1985).

This approach focuses on the need to integrate the diverse views of and perspectives on job design from the fields of industrial engineering, industrial psychology, organizational behavior, human factors engineering, and work physiology.

Next we examine an approach to studying job design called job-role differentiation (JRD). This approach was introduced and developed by Ilgen and Hollenbeck (1992). The premise behind this perspective is the need to link role theory with job theory to allow for a more comprehensive study of work structures.

Finally, we summarize an integrated approach to job design proposed by Griffin (1987). This approach integrates the key aspects of the motivational models of job design into what the author describes as a midrange theory. The major contribution of this theory is the integration of job characteristics theory (Hackman and Oldham, 1976) and the social information processing model of Salancik and Pfeffer (1977, 1978).

### **The Interdisciplinary Approach**

Campion and his associates (e.g., Campion, 1988; Campion & Thayer, 1985) introduced the interdisciplinary approach to job design as a mechanism for integrating various schools of thought into a single job design literature. Campion has argued that there are actually several distinct approaches to studying jobs. Each of these approaches is supported by a separate discipline with its own body of literatures. The four distinct approaches which together comprise the interdisciplinary perspective are the motivational approach, the mechanistic approach, the perceptual-motor approach, and the biological approach.

**The motivational approach.** As described and defined by Campion & Thayer (1985), their motivational approach to job design is a view quite similar to the conceptualizations of job design developed from the organizational perspective. Grounded in the earlier work on job enrichment, job enlargement, and various characteristics of jobs, the motivational approach has primarily been developed within the domain and scope of organizational behavior and organizational psychology. The motivational approach has generally searched for job design constructs that will be correlated with such primary outcomes variables as satisfaction, motivation, involvement, absenteeism, and job performance.

Recent arguments from the motivational approach have suggested that while organizations attempt to make jobs more motivating by adding greater skill and ability requirements, the jobs may also have significantly longer training times and be more expensive and difficult to staff. Increased skill and responsibility requirements may also require higher

compensation (Campion & Berger, 1990). Finally, motivating jobs may require such higher levels of involvement and commitment that employees may be faced with mental overload, stress, fatigue and lower output quality.

**The mechanistic approach.** The mechanistic approach to job design draws primarily from the literature on industrial engineering. The early foundation of this approach was developed by Taylor (1911) and Gilbreth (1911) and includes basic ideas and arguments from scientific management, time and motion study, and work simplification practices (Campion, 1988). The emphasis of this perspective has generally been on improving the efficiency with which jobs can be performed. Jobs that are constructed according to the mechanistic approach require less training and are less expensive to staff. In essence, the jobs are simplified and have lower levels of responsibility. With mental demands being lower, output quality may increase and compensation requirements may be reduced (Campion, 1989). On the other hand, the mechanistic approach may carry with it additional costs. These costs include lower job satisfaction and motivation due to boredom brought on by repetitive, simple tasks. In addition, health problems may also result from the physical demands associated with repetitive, machine-paced work.

**The "perceptual-motor" approach.** The "perceptual-motor" approach is derived from research on human factors engineering. This approach has its roots in experimental psychology, which tends to focus on job skills levels and information processing requirements. The "perceptual-motor" approach emphasizes the limitations and capabilities of job incumbents in their person-machine interactions. Campion and Medsker (1992) suggested that the researchers dealing with the "perceptual-motor" approach are more concerned with machinery and technology than are psychologists, while also being more concerned with abilities than are engineers.

The presumed benefits of the "perceptual-motor" approach include the increase in output quality and a predicted decrease in accident rates due to the emphasis on the reliability and safety

of the job. The reduced mental demands of the job would also reduce employee stress and fatigue.

Campion and Medsker (1992) also noted that if the "perceptual-motor" approach is excessively applied, the costs might include lower satisfaction, lower motivation, and an increase in boredom. The reason for these costs is the lack of mental stimulation from the work, as the limit on a job's mental requirements is dictated by the least capable employee.

**The biological approach.** The biological approach stems from research on work physiology, ergonomics, biomechanics (body movements), and anthropometry (body sizes) (Campion, 1989). This approach focuses on designing jobs that have low levels of physical stress and physical discomfort. Similar to the "perceptual-motor" approach in its focus on equipment and workplace considerations, the biological approach is differentiated by its focus on more physiological concerns based on ergonomics, whereas the "perceptual-motor" approach is more psychologically oriented based on human factors engineering.

Jobs designed from the biological approach may result in less fatigue and fewer physical injuries than jobs designed with no consideration for biological factors. Due to the reduction in occupational illness, there may also be an increase in job satisfaction and lowered absenteeism. The costs of jobs designed from the biological approach include the expense of equipment necessary to reduce the physical demands of work. In addition, jobs that have few physical demands may cause an increase in boredom and potentially have a negative impact on job performance and turnover.

Evident from the discussions of each approach, there are four hypothesized primary outcome variables (Campion, 1988). The motivational approach is associated with a satisfaction outcome, the mechanistic approach with an efficiency outcome, the "perceptual-motor" approach with a reliability outcome and the biological approach is associated with a comfort outcome. Similar to the job characteristics theory, the interdisciplinary perspective was introduced in concert with a measurement instrument, the Multimethod Job Design Questionnaire (MJDQ)

(Campion, 1985). The current form of the instrument (MJDQ; Campion, 1988) is a 48-item self-report questionnaire which assesses the job elements associated with each job design approach. The measure has acceptable psychometric qualities (Campion, 1988; Campion & McClelland, 1991) and convergent and discriminant validity (Campion, Kosiak, & Langford, 1988) with the Job Diagnostic Survey (Hackman & Oldham, 1980).

The strength of the interdisciplinary approach is the simultaneous recognition it brings to somewhat competing job design approaches. Due to the state of the field of job design, researchers are being pushed to provide more integrated or sophisticated models of work systems. Industry has also recognized the competing disciplines problem when work models are attempted to be transferred to the workplace. As Campion (1988) has previously pointed out, the competing theories can be found in the functional disciplines inside organizations. Organizational development consultants, human resource professionals, industrial engineers, and quality professionals all tend to be guided by their own set of job theories. The interdisciplinary model takes important first steps, from a research perspective, in recognizing the various schools of thought on job design and the various approaches that exist.

A weakness of the interdisciplinary approach is the challenge that exists to researchers to use the model. Many times we, as researchers, become "believers" in our own respective disciplines and tend to take sides (i.e., motivational proponents versus efficiency proponents) as if we have a cause to protect. As stated earlier, for the field of job design to progress, we must start to understand and accept the complexities that alternative models provide. Each discipline has its own collection of research findings, some complement other approaches and some do not, but the field has matured to the point where it is short sighted to ignore alternative theories because they come from different disciplines other than our own.

A second weakness may be the theoretical grounding of the interdisciplinary approach. Future work may be necessary to improve the integration among the various approaches into a clear, understandable theoretical framework. Additionally, future theoretical development should

include the recognition of individual differences and social cues which may impact individual perceptions of jobs.

Finally, as with other job design and organizational behavior research, measurement concerns also exist with the interdisciplinary model. The primary measurement instrument, the Multi-Method Job Design Questionnaire (MJDQ), is self-report. As Campion and his associates have attempted in recent work, other more "objective" measures should also be used in conjunction with the MJDQ. Future research using the Campion measures should also explore the problems associated with common method variance and item overlap.

The interdisciplinary approach offers an exciting integrative perspective which involves most major disciplines of job design. However, for this approach to be successful in the eyes of the research community, the model must become more widely accepted and used by researchers other than Campion and his associates.

### **Job-Role Differentiation**

Ilgén and Hollenbeck (1992) recently introduced an approach to the study of job design called job-role differentiation (JRD). This approach attempts to link, through clear differentiation, the often disparate literatures on jobs and roles. The authors state that JRD is an initial and necessary step in the process to fully integrate these two research domains.

An important assumption of JRD is the definitional distinction the authors make between jobs and roles. Relying on Blau and Scott's (1962) concept of prime beneficiaries and the idea of breaking jobs down into basic task elements (called the universe of task elements), the authors define jobs as "a set of task elements grouped together under one job title and designed to be performed by a single individual" (p. 173). Roles are defined as "larger sets containing emergent task elements plus those elements of the jobs that are communicated to the job incumbent through the social system and maintained in that system" (p. 174).

The authors suggest that jobs can be defined through objective task elements. However, jobs actually function in an environment only when additional tasks elements are added to the

original elements that defined the job. These additional or emergent task elements are specified by the social environment, as well as the job incumbent, and are described as subjective, dynamic, and specified by social sources beyond the prime beneficiaries. Therefore, work roles are differentiated from jobs by relegating only original task elements to jobs, and both original and emergent task elements to work roles.

The central argument is that the job design literature focuses too narrowly on the content of the elements called jobs. The authors define the job design literature quite narrowly, referring primarily to the job characteristics theory. The current study of job design emphasizes the physical demands of the task and the research has focused on establishing the objectivity of job perceptions. On the other hand, the role literature emphasizes the process whereby the expected set of behaviors called a role are established. The role literature tends toward the subjective reality that results from the process of sharing expectations between the role sender and the focal person.

Therefore, according to this logic, a job is regarded as a formal set of task elements influenced by an organization's prime beneficiaries. Roles include both formal and emergent task elements. An emergent task element may eventually evolve into a formal task element if there is consensus among members of a role set that the element is necessary or if the prime beneficiaries decide that the task should be formally established for all job incumbents.

Through a process of differentiation, the JRD approach is used to bridge the empirical and theoretical research on job design and roles. The concepts of content and objectivity from the job design literature are applied to the role literature. Process and social diversity in task expectations from the role literature are applied to the job design literature. By taking this approach, new perspectives are developed on a variety of overlapping issues in the job and role literatures. The authors propose an interesting argument for the fact that studying job design is a necessary but not sufficient condition for studying work structures. The same argument can be used for roles. These points provide the basis of this call to integrate job design and role theories.

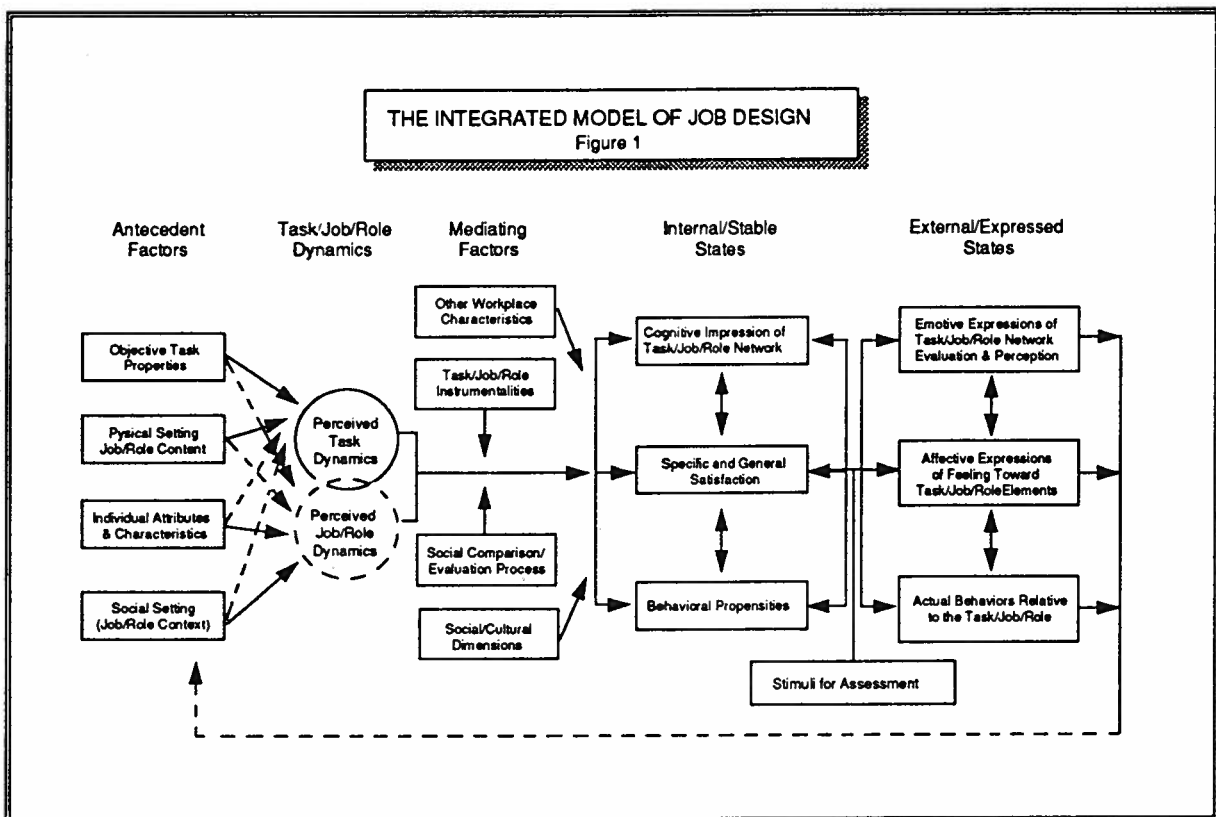


The strength of the JRD approach to job design is the important, though not novel, call for integrating job and role literatures. The larger concern that this work focuses on is the need to understand the subjective realities that exist in jobs. The study of jobs from strictly an objective sense is quite antiquated. Campion's interdisciplinary approach, discussed earlier in this section, may be an early victim due to the model's highly objectivist slant. Ilgen and Hollenbeck provide a necessary contribution to the field by restating the need to perform research from both a subjective and objective framework. An obvious weakness of the JRD approach is that the model doesn't go any further than making an argument for integrating role and job theories. Although the authors never claim to posit a theoretical model, an attempt to develop their ideas further may have been useful.

### **The Integrated Approach**

In an effort to move the field of motivational job design ahead, Griffin (1987) introduced an integrated theory of task design. Figure 1 summarizes this integrated theory. The intent of the theory is to provide natural extensions to the dominant, though somewhat divergent, job characteristics theory (Hackman & Oldham, 1976) and social information processing approach (Salancik & Pfeffer, 1977, 1978).

The key concepts and variables of the theory are job, role, task, perception, attitude and behavior. A job is defined by Griffin as the "array of elements and dimensions of the organization with which the individual comes into contact" (p. 94). A role is defined as the decision-making latitude of the person performing the task. The task is defined as "the set of prescribed activities a person normally performs during a typical work period" (p. 94). Perception refers to the processes individuals use to become aware of, interpret, and organize information gathered through their senses. Attitudes are generalized feelings individuals have toward an object or referent, in this case, their jobs, roles, and tasks. Relevant behaviors include performance, absenteeism and turnover. In addition, individuals are assumed to have choices, within boundaries, regarding the levels of any possible behaviors.



The integrated theory develops four antecedent factors to understand job-related phenomenon. These factors are the objective task properties, the physical setting, the individual attributes and characteristics, and the social setting. These antecedent factors are presumed to determine what Griffin refers to as task/job/role dynamics. This set of dynamics is comprised of perceived dimensions of the task, the job and the work role.

The task/job/role dynamics are the hypothesized to create three internal/stable states. These internal/stable states include cognitive impressions of the task/job/role, specific and general satisfactions, and behavioral propensities. The relationship between the perceived task/job/role dynamics and the internal/stable states is far from independent. For example, it is presumed to be mediated by a variety of factors including social comparison/evaluation processes, societal/cultural dimensions, task/job/role instrumentalities, and other workplace characteristics.

The internal/stable states are predicted to cause external/expressed states. These external/expressed states include emotive expressions of task/job/role evaluations and perception,

affective expressions of feelings toward task/job/role elements and actual exhibited behaviors. Griffin (1987) states the "actual correspondence between external/expressed and their analogous internal/stable states will be affected by mood, emotion, and other salient experiences, and will be mediated by the nature of the stimuli that elicits the expressed state to be made public" (p. 112). As noted earlier, the integrated theory of task design was expressly introduced to extend and integrate the job characteristics theory and social information processing approach to job design. In contrast to the job characteristics theory, for example, the integrated model represents a comprehensive conceptualization of work design processes. The boundaries of the integrated theory are more encompassing and its potential for explaining workplace phenomena is greater. In comparison to the social information processing model, the integrated theory is far more precise and focused in its approach to task perceptions and attitudes (Griffin, 1987). The integrated theory provides a clearer specification and prediction of the construct relationships.

The integrated theory was introduced as an attempt to demonstrate how the two dominant motivational models of job design can be linked in such a way as to capitalize on their relative strengths and, with the assistance of other organizational concepts, overcome some of their relative weaknesses.

Griffin's integrated theory takes the necessary risks to provide a highly sophisticated model of motivational approaches to job design. The strength of the integrative approach is that it provides a well developed theory. In some ways the strength of the integrative model may also be its weakness. The model is so complex, researchers have been unable to move it forward. Future research relying on this model must show how to turn the propositions into testable hypotheses. As we are all well aware, empirical job design researchers are used to receiving a measurement instrument with their theories! Unfortunately, this may be the reason for the lack of studies conducted using this integrated framework.

## Summary

These three new developments in the job design literature have provided a renewed sense of interest to this very important area of organizational research. A variety of issues emerge, or reemerge, from these latest developments. First, although the issue of objectivity has long been a concern in the motivational job design literature, these new developments push forward the philosophical debate between objective and subjective realities (Burrell & Morgan, 1979). Champion's interdisciplinary perspective fails to discuss the issue of objectivity, and therefore implies an objective reality of jobs. Both Griffin's integrated approach and Ilgen and Hollenbeck's JRD perspective emphasize the subjective, social reality of work structures.

Second, each new perspective is at a different stage of theoretical development. The interdisciplinary approach relies on theory from four major disciplines of job design research to develop a measurement tool. Ilgen and Hollenbeck's JRD approach calls for, but does not attempt, theory development to integrate the jobs and roles literature. Griffin offers the most completely developed theoretical model. However, it also suffers from being too general. Moreover, empirical assessment of his theory has been slow, perhaps due to the comprehensiveness of the model.

Finally, the most fascinating result that comes from these contemporary developments to the study of job design is the lack of an approach to overcome, or seriously challenge, the domination of the job characteristics theory. These developments, for one reason or another, have lacked the powerful influence that the original job characteristics theory (Hackman & Oldham, 1976) has had, and continues to have, for this area of research.

Most researchers would agree that the study of jobs is ripe for new ideas and conceptualizations. But these new ideas and conceptualizations are not likely to come at the expense of replacing a long-standing theory which has yet to be refuted (Griffin, 1991). A healthy outlook toward the future study of job design would be to understand these contemporary perspectives as extensions, rather than replacements or competing theories, to the knowledge gained over the past three decades of job design research.

## **New Directions for Job Design Theory and Research**

In this section we will first outline some potentially fruitful new directions for both theory and research. We will then focus on three specific perspectives on job design that seem likely to take on increasing importance in the next few years: group-based approaches to job design, information technology and job design, and international issues in job design.

### **New Directions for Theory**

There are two quite different avenues for theory development that might be worth pursuing. The first is for continued mid-range theory development work along the lines of the interdisciplinary approach, the job-role differentiation approach, and the integrated approach. Each of these approaches is essentially an extension of existing theory, and each is an effort to take two or more existing frameworks, theories, or models and combine them into a new one. The advantage of such an incremental approach is that the new models that emerge are somewhat more comprehensive than their predecessors. To the extent that the resulting synthesized models yield a more realistic model of job design phenomenon, they do a more effective job of capturing the nature of jobs and individual responses to those jobs. Moreover, each also capitalizes on the known strengths of their component models. On the other hand, these same models are also subject to the same basic weaknesses and shortcomings inherent in the original models from which they are derived.

At any rate, these models seem to hold enough promise to warrant additional attention. Indeed, one logical variation might be to investigate areas where the three existing combinational models might be merged to create a single new integrated model or meta-theory. For example, the work of Griffin and of Ilgen and Hollenbeck include both task and role variables. Similarly, the work of Griffin and of Campion and his associates each include both perceptual and objective task elements. The virtue of a single overarching model is that it could focus research more efficiently on a single organizing framework. A major disadvantage of this approach, however, is that the resultant comprehensive model will include an accumulation of all the shortcomings and

limitations inherent in each of the existing models used to create it. Also, job design researchers have had little success in testing or attempting to test integrated models in the past (e.g. Griffin, 1987; Salancik and Pfeffer, 1977, 1978).

An alternative direction for new theory would be to start from ground zero. While existing job design theories, and those from which they were derived, yielded valuable insights into job design processes, they have also failed to completely capture the job design phenomenon. By essentially starting over scholars could conceivably avoid the conceptual and empirical shortcomings of existing conceptualizations.

If this path were adopted, it would be most helpful to truly start with a blank slate. For example, several fundamental questions could be answered anew: what is a job? what is a task? what is work? how do people conceptualize jobs and work? what are the real antecedents and consequences of jobs, tasks, and work? Of course, this approach is a costly alternative in that a substantial body of existing work gets discounted or ignored altogether. Thus, a mid-range approach could instead focus on identifying existing perspectives that could be recast into a job design framework.

Regardless of which direction job design theorists take, however, a lingering question that clearly needs to be addressed is the role of individual differences. Much of the early work dealing with task attributes had the identification of important individual difference constructs as a major component. Apparently because much of the empirical work assessing the job characteristics theory found little or conflicting support for the JCT's hypothesized individual difference effects (i.e., growth need strength), many researchers began to ignore or discount the individual difference component. Only recently have individual differences reemerged as a central component in job design studies (e.g., Hunter, Schmidt, & Judiesch, 1990). The importance of individual differences in job design is intuitively appealing. If for no other reason than this, a more careful and thoughtful conceptualization of individual differences in job design can almost certainly be justified.

## **New Directions for Research**

From a pure research perspective, several observations can also be established.

Regardless of whether one takes an incremental or fresh perspective on job design theory, several specific directions can be identified. Foremost among these is measurement. Most research today continues to use the original Job Diagnostic Survey. Those studies that do not use the JDS usually use either a derivative of the original instrument or Campion's (1988) MJDQ.

More rigorous measures should probably include a self-development portion where job incumbents are allowed to formulate and express their own perceptions of jobs as opposed to indicating how much of a researcher-defined attribute is or is not present in the job. Moreover, future measuring devices need to include some component designed to assess critical elements of the social context within which the job is performed. That social information affects job perceptions and job-related attitudes seems sufficiently well-documented that not incorporating it seems to be a serious oversight. Depending on how individual differences are incorporated into future job design theory, their measurement may also need to be an integral part of measurement devices in the future.

One fundamental confound that continues to plague research in the job design area is the reliance on job incumbent-generated perceptual data. To the extent that theory specifies variables- or components-based job perceptions, it obviously becomes necessary to measure those variables or components with perceptual apparatus such as questionnaires. But more objective components of theory should always be assessed with objective data of some sort, based on valid measurement strategies and assessed by someone other than job incumbents. Attitudinal outcome variables will also, of course, generally be measured by incumbents. But other outcomes such as performance, effort, and behavioral propensities need to be measured with data from sources other than job incumbents. Only if job design research begins to incorporate new and varied sources of data can it overcome its hallmark weakness of common method variance.

In addition to measurement improvement, researchers should also pursue stronger and more rigorous research designs. New and innovative research designs should also be explored. Several studies exist that rely on experimental designs (e.g., Staw & Boettger, 1990) and/or longitudinal designs (e.g., Griffin, 1991). However, important insights into job design processes may also come from designs that utilize participant-observation, self-study, or other qualitative approaches.

### **Group-Based Approaches to Job Design**

The primary focus of the study of job design has been at the individual level of analysis. Recent trends in organizations point to the widespread use of selfmanaged work teams (Manz & Sims, 1987), quality circles (Ledford, Lawler, & Mohrman, 1988) and other forms of group structures (Goodman, Ravlin, & Schminke, 1987). Due to this increased interest among practicing managers in using work teams, researchers are challenged to expand the job design domain to include group work design.

Debate continues over the most effective way to divide task objectives and associated rewards. For years the field of management was influenced by the scientific management approach which stressed the need to break jobs down into their most simplistic pieces, and then group these task pieces to create a job. Current personnel management practices of job evaluation and analysis and performance appraisal still remain heavily focused on the individual job. The difference between individual job design and group work design is that the task or set of tasks is assigned to a group of individuals instead of a single individual. Therefore, the work group becomes the unit of performance and associated group controls and rewards must follow.

The literature in the area of group work design is unsurprisingly sparse. Almost all of our knowledge of group-based approaches comes from international studies (which will be discussed later in this section). However, Hackman (1987) provides an interesting insight into the area of group work design. Based on the collective knowledge of years of group research, he identifies three primary group design variables.



First, the task itself must motivate group members. To produce a motivated group Hackman provides the following task conditions: 1) the group task should require members to use a variety of higher level skills, 2) the group task should be an identifiable, meaningful piece of work, with a visible outcome, 3) the outcomes of the group's work on the task should have significant consequences for other people, 4) the task should provide group members with substantial autonomy for deciding about how they go about doing the work, and 5) work on the task should generate frequent, accurate feedback about how well the group is performing (Hackman, 1987). This first variable, the task condition, is very similar to the seminal work of Hackman and Oldham (1980) discussed earlier in this chapter. The primary difference is simply that the traditional task characteristics or conditions are being applied at a group level of analysis as opposed to the individual level.

Second, group composition is critical to the effectiveness of the work group. The group should be composed of the right size and mix of members who possess the necessary task skills. Four conditions are delineated with regard to work group composition: a) individual members should have high task-relevant expertise, b) the group should just be large enough to perform the work, c) members should possess interpersonal as well as task skills, and d) group membership should be moderately diverse (Hackman, 1987).

Finally, group norms are critical to regulate group member behavior and to allow for flexibility in adapting alternative strategies to perform the work. Some form of group norm structuring will emerge in almost all work groups. When designing group work, careful attention should be given to the norm formation process to assure compliance to task-appropriate performance strategies (Hackman, 1987). It is imperative that the norm structure be understood by the work group and/or the managerial team in order to bring about necessary changes if the enforcement structure is dysfunctional to work group effectiveness (McMahan & Kacmar, 1991).

These three group work design variables are critical to achieving the process results necessary for group effectiveness. Hackman (1987) defined the process criteria as a) having

sufficient effort applied to the group task, b) assuring sufficient knowledge and skill is applied to the group task, and c) having task appropriate performance strategies. In addition to the group work design factors discussed above, issues of organizational context and group synergy are necessary ingredients to the normative model of group effectiveness proposed by Hackman (1987).

The need for research in the area of group work design is tremendous. Industry continues to make attempts to redesign work around groups of individuals in efforts to improve productivity and boost quality and responsibility. One of the certainties in future job design research is the inclusion of group level studies.

### **Information Technology and Job Design**

An extremely important area for future job design research concerns the impact of information technology on jobs and job incumbents. Some have stated that information technology (IT) may well be the single most important change affecting the modern day workplace (Gerstein, 1987). Turnage (1990) stated that the rise of automated systems has been compared to the tremendous impact of the Industrial Revolution. Information technology is hypothesized to produce significant impacts at the job and individual levels of analysis. Zuboff (1985) described two primary types of information technology. First, those technologies that *automate* the task through computer software, hardware, and other mechanisms. Second, those technologies that *informate* the task by going beyond the physical automation stage and allowing the information to be processed and used by the end user. Beard (1991) defined the end user as a worker who interacts with computerized information technologies, but who is not a programmer or analyst. In essence, an automated technology is a necessary but not sufficient condition for an informed technology. Zuboff (1985, 1988) argued that an organization has considerable discretion over the way an information technology can be applied or implemented in the workplace. It is the decision of the job designers in the organization as to how to construct the jobs that result from the implementation of IT.

Parsons (1988) commented on the relative lack of empirical studies that have examined the changes that are produced as a result of IT and how they affect humans at work. However, some job design research has been conducted (e.g., Beard, 1991; Franz, Robey, & Koeblitz, 1986; Kling, 1978). These studies rely almost exclusively on the Job Characteristics Theory and the use of the Job Diagnostic Survey. Attewell and Rule (1984), in a review of the information technology literature, found that most questions concerning the impact of IT cannot be answered based on current research. The results of the research that has been conducted reintroduces the traditional debate over the effect of technology on work and individuals (Mesthene, 1970). One argument is that technology is basically bad, in that it deskills the worker and reduces the importance of the individual. On the other hand, technology is viewed as good, in that it tends to upgrade or enrich the work and helps to advance society.

The impasse that exists in the empirical research to date further suggests that the depictions of information technology by Zuboff (1988) and Walton (1989) were accurate. It is the discretion that organization members possess and the decisions they make on how they apply IT in the workplace that creates the real opportunity for job design researchers. What are the effects on jobs and workers when IT is implemented given various organizational objectives? What are the job costs and benefits associated with different types of IT? The use of Campion's (1988) interdisciplinary model may be a fruitful avenue to pursue with regard to these questions. His model focuses on a wider range of approaches and outcomes compared to the more traditional motivational approaches to job design.

Based on limited conceptual and empirical research concerning job design and IT, the need for rigorous, creative studies exists. The future challenges that face the field of job design, or even more the field of organizational behavior, rest in our ability as scholars to change with society and industry by increasing our understanding and predictive ability of organizational phenomena that affects people at work. This knowledge revolution (Drucker, 1988), of which IT is a major factor, is quite possibly the most important phenomenon in the workplace today.

## **International Issues in Job Design**

Finally, international and cross-cultural issues will also become an increasingly important arena for future job design theory and research. Indeed, some of the most influential theory and practice of group-based perspectives on job design comes from Europe. Beginning with the early work on sociotechnical systems theory (e.g., Rice, 1958; Trist & Bamforth, 1951), for example, researchers in Great Britain made significant advances. This tradition continues today with the work of Wall, Clegg, and their colleagues at the University of Sheffield (e.g., Wall, Corbett, Clegg, Jackson, & Martin, 1990). The autonomous work group experiments at the Volvo plant at Kalmar, Sweden also received widespread attention (Dowling, 1973) in this regard.

Aside from group-based approaches, however, other international and cross-cultural research on job design has been relatively narrow and restricted. For example, an increasingly common research approach is to take an existing model or instrument like the JDS and apply or administer it to samples of workers in different countries (cf. Birnbaum, Farh, & Wong, 1986). While these approaches yield some interesting and preliminary insights, they should also clearly be treated as only a first step in understanding job design in different countries and/or cultures.

The basic shortcoming in international and crosscultural comparisons is that little theoretical work has been done to better allow researchers to understand the validity of basic constructs across cultures. For example, by translating the JDS into different languages and having workers in different countries respond to its questions, it is clearly possible to get different sets of data from which comparisons can be drawn. Unfortunately, such a strategy presupposes that the underlying theoretical constructs, and thus the derived questions in the survey instrument, have meaning in those countries and cultures. Unfortunately, there is little or no theoretical evidence to support such an assumption.

Once again, the necessary starting point is theory. Scholars must start by carefully understanding what work and jobs mean to workers and managers in different cultures. If a job is something a person does to earn a living, the relevant attributes and outcomes of that job will

be quite different from the situation where a job represents one's social position in a status hierarchy. Thus, theorists and researchers might be advised to first develop theoretical understanding of job design processes in a particular culture before starting to study them.

England and Harpaz (1990) have taken some promising first steps in this regard with their MOW (meaning of work) research. This and similar work has attempted to develop an understanding of how people in different cultures define work. As this understanding continues to evolve, researchers will be able to more effectively study job design in other countries. In advancing this line of inquiry, however, researchers will need to seek the appropriate level of compromise between specificity and generalizability. For example, one approach is to study job design processes within a particular culture with such depth and specificity that true understanding of job design in that culture may be achieved. But if substantial cultural variations exist, it will be difficult, if not impossible, to generalize understanding between cultures. Thus, the challenge is to develop a framework for studying international job design processes that allows a meaningful degree of within-culture understanding while simultaneously providing meaningful channels for comparing and contrasting those processes across different cultures.

### **Summary And Conclusions**

Job design continues to be a dominant area of interest for theorists and researchers interested in understanding human behavior and in organizations. Jobs are the window through which individuals perceive, experience, and contribute to organizations. Similarly, jobs are also the window through which organizations direct the work of individuals in productive ways, assess their value to the organization, and undertake efforts to motivate their behavior. Just as organizations throughout the world are changing, so too are jobs within those organizations. The Job Characteristics Theory provided a solid foundation for advancing work in this field. Unfortunately, recent attempts to extend and broaden these preliminary perspectives have yet to have a substantive impact on the field. Thus, continued efforts to reenergize and redirect research in the job design domain are clearly warranted.

While there are many avenues this work might fruitfully follow, perhaps the most logical ones extend to group-based work systems, information technology and international and cross-cultural issues. Each of these areas is becoming more central to the work of most organizations today. Thus, linking them, either individually or together, with the fundamental relationships between people and their jobs holds great promise for better understanding how organizations can become more effective.

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