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**Dynamic Perspectives on the  
Design of Work**

**CEO Publication  
G 81-3 (9)**

**Kenneth R. Brousseau  
University of Southern California**

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## DYNAMIC PERSPECTIVES ON THE DESIGN OF WORK

### Abstract

This article reviews recent research findings concerning factors which shape job-person relationships. Based on these findings, a dynamic job-person model is proposed. Implications of the model for the design of work systems and human resources development are explored, and critical research questions concerning job-person dynamics and work design are identified.

## DYNAMIC PERSPECTIVES ON THE DESIGN OF WORK

Research on work redesign is entering its fourth decade. During the past thirty years, this research has generated numerous insights into factors influencing employees' emotional and behavioral responses to their jobs. In addition, a number of strategies for improving the quality of work life and performance have been developed. In some cases, these strategies have undergone modification as new findings alter traditional assumptions and beliefs; however, there is reason to believe that work improvement methods have not kept abreast fully of newly generated knowledge about job-person relationships. This is not surprising, since job design research has created a massive literature dispersed among numerous books and journals.

The purpose of this paper is: to identify "key concepts" concerning the nature of relationships between individuals and their work emerging from research conducted during the past few years; to explore the implications of these concepts for the design and management of work; and to suggest a strategy for integrating the objectives of work design with organizational needs for human resources development. In addition, the paper highlights important research questions for the future.

### Key Concepts Concerning Job-Person Relationships

#### Concept I: Individuals Differ in Work Orientations and Values

Much of the current interest in job design in the United States can be traced to a number of early studies documenting the dysfunctional consequences (e.g., job dissatisfaction, high rates of turnover and absenteeism) that often result from simple and routine jobs (Blauner, 1964; Davis, 1957; Herzberg, Mausner and Snyderman, 1959; Walker and

Guest, 1952). As such, the job enrichment movement began as a reaction against the trend toward work simplification inspired by F. W. Taylor and the scientific management movement. Consequently, from the perspective of job enrichment, "good" jobs came to be viewed as those which involve high amounts of variety, autonomy, and the performance of "whole" (vs. fragmented) tasks.

Essentially, this view of the good job continues to prevail today with some qualifications. The qualifications stem primarily from research findings which indicate that employees are not equally enthusiastic about rich and challenging jobs. Although the findings have not always been consistent (Stone, 1976; White, 1978)--perhaps because of the theoretical and methodological problems involved in this type of research (Brousseau, Note 1)--the results of a number of studies indicate that employees' personality characteristics influence their reactions to the type of work they perform.

Of the research in this area, the most consistent and convincing evidence has been produced by researchers who have studied the "moderating" influence of "higher order" need strength (or growth need strength) on the relationship between job scope and employee attitudes and behavior. These findings indicate that persons who have strong growth needs respond most favorably to jobs that are broad in scope and offer high amounts of challenge and complexity (Hackman & Lawler, 1971; Hackman & Oldman, 1976; Oldham, 1976; O'Reilly, 1977; Peters & Champoux, 1979; Pierce, Dunham & Blackburn, 1979; Sims & Szilagy, 1976; Steers & Spencer, 1977; Wanous, 1974; Zierden, in press). Significantly, however, these findings do not show that persons with low growth needs react negatively to complex jobs. Rather, they suggest that persons whose growth needs are

weak tend to remain indifferent to the characteristics of their jobs, regardless of how challenging or simple, varied or routine, their jobs happen to be.

Concept II: The Work Context Influences Reactions to Job Content

Within the past decade several authors have called attention to the possibility that a person's reaction to his or her job may not only be influenced by the properties of the job and his or her needs and motives, but also by the nature of the work context or organizational milieu surrounding the job (Lawler, 1971; Porter, Lawler & Hackman, 1975). Recently, several researchers have reported findings which support this notion. At present, the evidence suggests that interpersonal relationships, reward systems, supervisory practices, and features of the organizational structure can affect job-person relationships in important ways (Dunham, 1977; Oldham, 1976; Oldham, Hackman & Pearce, 1976; Pierce, Dunham & Blackburn, 1979; Zierden, in press). For example, Oldham et al. (1976) report that persons who are satisfied with contextual factors such as pay, security, interpersonal relations, and supervision tend to respond more positively to "rich" jobs than do persons who are dissatisfied with these factors. Those who respond least favorably to high job scope are employees who are dissatisfied with the work context and who also have weak growth needs. In fact, the findings indicate that these employees in some cases react negatively to increased job scope. Apparently, even though weak growth needs alone seldom lead individuals to react against job complexity and challenge, a combination of weak growth needs and dissatisfaction with the broader work setting could create a situation in which individuals would be "demotivated" by increasing the scope of their jobs.

Findings reported by Pierce et al. (1979) also support the notion that individuals' reactions to job content are influenced by the organizational environment. In a study which investigated levels of job satisfaction associated with different combinations of job scope, employee growth need strength and features of the "social" system (organic versus mechanistic types), they found the highest levels of satisfaction among individuals with strong growth needs who perform complex jobs within organic organizational units. Satisfaction was lowest for employees with high growth needs performing simple jobs in mechanistic units. In addition, they report that job satisfaction was significantly associated with two-way interactions between job complexity and growth needs and between social system structure and job complexity.

These findings contribute to an expanded view of job-person relationships. Work outcomes depend upon the job, the person, and the broader work situation. Failure by researchers to consider any one of these categories of factors can lead to misinterpretation of research results and inappropriate prescriptions for the design of work systems (Brousseau, 1979; Hackman & Oldham, 1980).

### Concept III: Time on the Job Alters Responses to Job Characteristics

An important new direction in recent research on job-person relationships concerns how they change over time. Until very recently, most researchers treated relationships between people and their jobs as static, subject to change only via interventions in the form of job redesign efforts or decisions to move individuals from one job to another. Once the temporal element is introduced, however, knowledge can be gained about processes which take place as an individual assumes



a new job, accumulates experience with it, and eventually moves on to a different job.

A major variable related to job-person dynamics is job longevity (i.e., the length of time an individual has been employed on the same job). Research on this variable has begun to produce some interesting findings. For instance, Katz (1978a; 1978b) has identified three stages of job longevity characterized by different patterns of employee response to job scope variables. During the initial "learning" stage--i.e., the first few months on a new job--job satisfaction correlates positively with task significance and feedback, but not with such other job dimensions as autonomy, skill variety, and task identity. For persons who are in a later stage of job longevity--i.e., 1-3 years on the job--satisfaction correlates positively with all five of the job dimensions mentioned above. Katz calls this the "responsive" stage. It is also during this stage that job satisfaction is most highly correlated with performance effectiveness and turnover. In contrast, the strength of the relationship between satisfaction and job characteristics declines for persons in later stages of longevity, until for persons with ten or more years on the job--i.e., the "unresponsive" stage--satisfaction is no longer associated with indices of job scope.

Katz (1978b) reports that, although these general patterns hold for individuals with strong growth needs as well as those whose growth needs are comparatively weak, individual differences in need strength appear to influence how rapidly employees respond to the more challenging features of their jobs. More specifically, high growth need individuals appear to respond more positively to opportunities to use a variety of skills and to work autonomously at an earlier stage of job longevity.

Nevertheless, these differences in job responsiveness tend to fade out over time, such that after three years on the job persons with strong growth needs and those with weak growth needs are about equally responsive to job scope variables. As discussed later, these findings have important implications for job training and work redesign. From a research perspective, they indicate that failure on the part of job design researchers to control for the influence of job longevity on employee attitudes and behavior may have led some researchers to overestimate, and others to underestimate, the role of growth need strength and other individual difference variables as moderators of employee response to job scope (Brousseau, Note 1).

#### Concept IV: Job Experiences Influence Personality

Another recent trend in research into job-person dynamics concerns the ways in which employees' personalities change over time as a function of their work experiences. Several early studies on this topic demonstrated that significant relationships exist between various job dimensions and employees' personality characteristics (e.g., see Kornhauser, 1965; Kohn and Schooler, 1969); however, the cross-sectional nature of these studies made it difficult to determine the degree to which these relationships reflect the impact of work experience versus the results of selection processes.

Within the past few years, several longitudinal studies have produced findings strongly indicating that numerous facets of work experience are capable of influencing changes in individuals' work values, beliefs, temperament, and cognitive styles. For example, Anderson (1976) and Andrisani & Nestel (1976) report that individuals who experience success in their work tend to develop a stronger sense of internal

locus of control. Brousseau (1978) found that over a six-year period individuals who performed jobs involving high amounts of task identity and task significance developed increasingly active orientations toward their lives and experienced decreased feelings of emotional depression. Brousseau and Prince (in press) report that task identity and task significance also are associated with changes in nine facets of personal temperament (as measured by the Guilford-Zimmerman Temperament Survey, 1949). Karasek (1979) has reported a longitudinal survey of a representative sample of the Swedish labor force showing increasing levels of depression to be associated with low job decision latitude. In a ten-year longitudinal study of a representative sample of men in the U.S. labor force, Kohn and Schooler (1978) found that jobs high in substantive complexity enhance intellectual flexibility. In another ten-year longitudinal study, Mortimer and Lorence (1979) observed that high amounts of autonomy on the job tend to strengthen individuals' intrinsic and people-oriented work values.

These findings highlight the dynamics of job-person relationships. They indicate that psychological and emotional characteristics which determine individuals' orientations to their jobs are susceptible to changes induced by the properties of those jobs. Viewed from this perspective, the degree of fit between an individual on his or her job must be considered in the context of time and experience.

#### Concept V: Career Stages Influence Work Orientations

Additional insights into the dynamic processes which influence individuals' work orientations emerge from research focusing on the life and career stages through which individuals evolve. Typically, this research has attempted to identify the kinds of "life tasks" and work-

related issues that are most salient for individuals at different points in their lives and careers (see e.g., Dalton, Thompson, and Price, 1977; Gould, 1972; Hall, 1976; Levinson, 1977; Schein, 1978; Vaillant, 1977). Although this research has not examined specifically changes in individuals' reactions to job content, many of the findings have implications for the ways in which individuals' reactions to their jobs might change across different stages of life and career.

For instance, Dalton et al. (1977), in a study of 350 professional employees, were able to identify four sequential career stages marked by different sets of demands on the individual. Those individuals who were judged most effective by their superiors tended to be those who were most successful in coping with the unique demands of their particular career stage. Specifically, success during Stage I appeared to depend on the individual's ability to assist, learn from, and follow the directions of more senior employees. During Stage II, individuals judged more successful were those who were recognized as having made significant contributions of their own to the organization. Those rated as most effective during Stage III were individuals who were seen as acting as teachers or "mentors" for more junior employees. Finally, during Stage IV, those individuals who focused more on planning and providing direction for the future of the organization were recognized as most successful.

Although career stages such as those identified by Dalton and his colleagues may reflect the kinds of demands that organizations place on their members as they progress through their careers, they might also reflect demands that individuals place on themselves. Said differently, changes in interests, values, and abilities that individuals experience

over time may lead employees to focus their energies on distinctly different issues at different points in their careers. If so, one would expect that the "goodness of fit" between the person and his or her job during a particular time period depends upon the degree to which the job provides opportunities for the individual to utilize and express those skills and talents most salient to his or her current career stage.

#### Limitations of Static Job-Person Models

Most current work redesign strategies recognize the importance of individual differences and situational factors as determinants of employees responses to redesigned jobs (e.g., Aldag & Brief, 1979; Davis, 1975; Hackman, Oldman, Janson & Purdy, 1975). Until very recently, however, they have tended to ignore the dynamic processes described above which are capable of altering the ways in which individuals react to their jobs as time passes. As such, the strategies have rested upon models of job-person relationships that implicitly are static. Consequently, interventions aimed at improving the fit between the individual and the job often involve "one shot" change projects.

Although such approaches may result in improved employee attitudes and performance in the short-run, several of the research findings described earlier raise doubts about their effectiveness as vehicles for maintaining an effective job-person fit over the long run. For example, an individual initially may respond enthusiastically to an enriched job that entails performing more complex and challenging work. However, as time progresses and no further changes are made in job content, what once seemed novel, challenging, and meaningful may come to be seen as routine and mundane. Even though the job offers greater challenge and complexity than previous jobs, the individual may feel a need to move on

to new kinds of work. In fact, experience with the job itself may have increased the person's desire to acquire new knowledge and to develop new skills. Additionally, new stages of life and career may bring with them the need to assume a new role in the organization and to use work to achieve personal objectives which are different from those to which the person attached importance in the past. Consequently, what initially was an effective job-person match gradually could evolve into as great a mismatch as that which preceded the introduction of the redesigned job.

Increasingly, work design researchers acknowledge that to avoid the "vanishing effects" phenomenon (Hackman & Oldham, 1980; Walton, 1977) job redesign projects require more than one-shot interventions. For example, Hackman & Oldman (1980) point out that career development practices can influence the long term success of work redesign projects. Herzberg (1976) addresses the need to create jobs which enable individuals to continuously expand their skills and abilities. Beer (1976) suggests that "some sort of graded and self-paced job sequence is the optimal job enrichment strategy." Similarly, career development theorists and researchers increasingly are focussing on the job and planned job sequences as potential instruments for employee growth and development (Hall, 1976; Schein, 1978; Wellbank, Hall, Morgan & Hamner, 1980).

These views are converging on the inherent interdependence between human resources development and work system design. Once this fundamental interdependence is recognized, work systems in organizations appear less like collections of discrete jobs and more like networks of jobs, tasks, and roles which serve the productive objectives of the organization and provide the experiential media for the development of

human resources. Viewed from this perspective, any work system could be evaluated in terms of the degree to which it currently possesses the basic properties necessary for employee development through work. The following offers some observations concerning the nature of these basic properties.

### Basic Properties of Developmental Work Systems

#### Movement

The feature most central to a work system's capacity to promote development is the degree to which it allows movement of individuals across different types of jobs or work functions over time. If organizational policies and/or the design of the work system itself do not allow individuals to perform different types of work which facilitate the acquisition of new skills and abilities and contribute to new knowledge, employees must look beyond their work for developmental experiences. In addition, without movement the probability increases that individuals eventually will enter what Katz (1978b) describes as the unresponsive stage of job longevity. As this occurs, jobs lose their impact on internal work motivation and their abilities to sustain employee satisfaction and interest. Even though employees may be highly capable of performing their jobs effectively, there is a strong probability that reduced motivation to apply skills and knowledge acquired through experience with the job will outweigh whatever advantage might be gained by keeping individuals in the same job for great periods of time.

#### Orderly Sequencing

Movement alone does not assure development. To shuttle an individual indiscriminantly between different types of work could be worse than

leaving him or her in one job indefinitely. For movement to promote development, it must comprise an orderly sequence--a logical progression of work experiences that cumulatively contribute to the employee's development within one or more domain of skills and abilities. To be "logical," however, the progression must be tailored to the developmental needs and career orientation of the individual employee. Because individuals vary in terms of career "concepts" (Driver, 1979) and career "anchors" (Schein, 1978), employees are likely to express substantially different preferences for types of developmental sequences. For example, sequences which promote increased competence within a particular domain (e.g., interpersonal skills) might be preferred by some employees; others might elect a sequence which increasingly allows them opportunities to create new products or ideas of their own (Schein, 1978). Still others may see the "ideal" sequence as entailing shifts into new functional areas which contribute to development of a broad repertoire of skills and abilities and greater self-awareness (Driver, 1979). These differences argue for the creation of multiple job sequence possibilities within a work system.

#### Graduated Change

A third feature of developmental work systems concerns the rate of movement of individuals within job sequences. As Katz's (1978b) findings suggest, when individuals are placed in a new job they experience a period of learning and adjustment during which they are more concerned with receiving performance feedback than experiencing autonomy or utilizing a variety of skills. These latter features of the job assume greater importance at later stages of job longevity. Presumably, the learning and adjustment stage increases in length and is more markedly defined by



employees' selective responses to job characteristics as the magnitude of the change in job activities and duties increases. In some cases, even where a new job represents a shift within a developmental sequence, the sheer magnitude and suddenness of change may tax the individual's capacity to adjust and negate the potential developmental gains the job might otherwise have produced.

One's speed of adjustment to a new job and the degree of stress experienced during the adjustment period are likely to be determined both by the actual magnitude of the change and by the characteristics of the individual. For example, Katz's findings suggest that the learning stage generally is shorter and less clearly defined for persons with strong growth needs than for persons with weak growth needs. Other characteristics, such as tolerance for incongruity (Hunt, 1965), or what Kobasa (1979) refers to as the "hardy" personality, may also play a role here. Driver's (1979) schema of career concepts depicts some individuals as desiring frequent job changes entailing high amounts of variety and independence. Others are seen as avoiding changes which threaten one's sense of security.

Viewed in this way, individuals differ in their preferences ( and tolerance) for rate of movement within sequences just as they vary in their preferred directions of movement. To effectively promote development, the frequency and magnitude of movement across jobs and work functions must recognize these differences--as well as the possibility that the underlying personality characteristics which influence responses to change may themselves change as individuals progress along developmental sequences.

### Developmental Work System Design Strategy

Work systems within organizations vary in the degree to which they currently facilitate movement, orderly sequencing and graduated change. To create these properties requires a design strategy and a set of methods for implementing the strategy.

### Work System Assessment and Redesign

To gauge developmental possibilities within an existing work system requires knowledge of properties of the jobs and tasks the system presently contains. Several kinds of information are needed: the skills abilities and knowledge required to perform existing jobs; the scope of responsibilities and the range of functional activities they entail; how they interact with control and feedback systems; and the overall diversity of the jobs contained in the system. This information is needed to identify potential developmental sequences in the existing work system and to determine the types of modifications in job properties and other organizational arrangements that might be needed to align jobs with what is needed to produce orderly, graduated job sequences.

Several techniques are available for job assessment. For instance, McCormick's synthetic job analysis procedure (McCormick, Jeanneret, and Mecham, 1972) can be utilized to identify skills and abilities required to perform existing jobs. Instruments such as the Job Diagnostic Survey (Hackman & Oldham, 1975) and the Job Characteristics Inventory (Sims, Szilagyi & Keller, 1976) are useful for assessing employees' perceptions of the motivational scope of specific jobs.

In some instances, assessment of existing jobs may reveal that one or more of the traditional job sequences through which employees are promoted lack the qualities of a developmental progression. For exam-

ple, after conducting an assessment of jobs in several functional areas, a large West Coast insurance company recently discovered that the usual job sequence for claims adjusters comprised an erratic progression. Middle level claims adjuster positions were substantially less complex and narrower in scope than entry level and senior level positions.

Redesigning sequences. Where job assessment data reveal gaps, discontinuities, or reversals in the skill requirements or scope of responsibility associated with two or more adjacent jobs in a sequence, steps can be taken to restructure the jobs with the aim of producing an orderly, graduated, developmental sequence. This is where current work redesign or job enrichment techniques (Hackman & Oldham, 1980) could prove to be especially useful. Instead of redesigning a job with the intention of producing an enduring job-person fit, the objective would be to create a better fit between a job (or set of jobs) and a particular stage of employee development. For example, enrichment of the middle level claims adjuster jobs mentioned above could be aimed at creating work experiences which build upon those encountered in entry positions and which prepare individuals for the more complex and challenging tasks of the senior level claims positions. Work redesign could also aid in designing "transition" jobs--jobs which represent "bridges" from one functional area to another. These types of jobs would serve as important links in building lateral job sequences for individuals who prefer opportunities to broaden their skills and abilities more than they desire opportunities for advanced achievement within a particular functional domain (Driver, 1979).

## Assessing and Tracking Employee Development

Development of an organization's human resources cannot be accomplished with maximum effectiveness solely through identification and design of developmental work sequences. Of equal importance is the collection and utilization of information about individual employees as they enter the system and move along its developmental pathways. This information will assist in deciding upon initial job placement and selection of particular job sequences for particular individuals. It is required also to guide decisions about rate of movement along developmental pathways and to signal the need to shift to new directions of development if and when individuals needs and motives change.

A detailed discussion of assessment methods is beyond the scope of this paper. Suffice it to say that industrial psychologists have developed an extensive array of tools and techniques for assessing skills and abilities, personal temperament, vocational preferences and work values, and cognitive styles (Driver & Rowe, 1979; Dunnette, 1976; Gough, 1976; Holland, 1976; Super & Crites, 1962). These techniques and others increasingly are used in company operated or external managerial assessment centers for purposes of appraising individuals' strengths and weaknesses for performing certain kinds of work and for making career-related decisions (Byham, 1970; Finkle, 1976).

Although the assessment center approach sometimes is utilized to make static types of judgments about individuals (e.g., assessment of an individual's managerial "potential"), the approach could play an important role in the management of a developmental work system. However, to be consistent with the dynamic orientation required for effective human resources development, access to assessment centers should not be lim-

ited to managers or candidates for managerial positions. Further, individual assessment must be a recurring activity in which individuals receive personal assessment and counseling upon entry into the organization and periodically thereafter. This program would serve to identify changes that occur within individuals over time, and would provide insights into the ways in which different types of jobs influence individuals' skills, abilities, and work orientations and values. Used in conjunction with decision procedures for job placement (Guion, 1976), such information would increase the effectiveness of periodic realignments of individuals and jobs within the work system.

#### Conclusion

The preceding discussion provides an outline for an approach to work design and human resources management based upon a dynamic model of job-person relationships. However, at present, both the approach and the underlying model remain sketchy. The description of developmental work systems presented above does not address organizational constraints which could limit how fully such a system could be implemented in a particular organization. These constraints might include: the short-term design and start-up costs, long-term maintenance costs; factors which limit inter-function mobility, such as union work rules, or professional and/or legal certification requirements; and the organization's "career culture" (Driver, 1979) which could restrict the legitimacy or acceptability of job mobility to one direction (e.g., "up-or-out") only. At present, we do not know how seriously such factors would limit implementation of developmental work systems, nor do we know whether, or how easily, such potential obstacles could be removed as part of a comprehensive change strategy.

## Research Questions

In addition, a number of important research questions remain to be answered before the job-person model can be presented in more detail. For the model to be more complete requires more knowledge than presently exists about the important dimensions of job-person fit that determine an individual's ability to perform a job well and likelihood to derive rewards from the job. The job scope-growth need strength research has produced some leads, but represents only one of many possible dimensions of fit. However, because the number of dimensions to study could proliferate beyond manageable size (Tyler, 1959), we clearly need our research in this area to be guided by theory indicating which (and why) specific facets of jobs are expected to fit with which particular characteristics of individuals (Dubin, 1976). Further, we need a more sophisticated taxonomy of jobs. There may be certain types of jobs or work situations where a close job-person fit is not critically important for effective performance or job satisfaction. Yet, there may be others where the zone of tolerance is very narrow and requires an exact fit (Faunce & Dubin, 1975).

The job-person model presented in this paper portrays relationships between individuals and jobs as dynamic. But, how dynamic are these relationships? How much do individuals change; how much could they change as a result of work experience? At present we do not know. The evidence is still very sketchy indicating at best that some facets of psychological and emotional functioning are influenced by job experience. However, it is too soon to say with certainty exactly which facets of jobs influence specific characteristics of the individual. It may be that certain characteristics of individuals (i.e., specific skills, particular facets of temperament) are relatively plastic and

susceptible to change as a function of work (and other) experiences, whereas other characteristics are relatively fixed. As indicated earlier, most of the past research in this area was cross-sectional and, therefore, unable to provide answers to these questions. However, even the more recent longitudinal research cited in this paper is limited in that none of the studies entailed introduction of experimental conditions intended to produce particular changes. Therefore, the results only provide rough indications of the kinds of changes that "naturally" occur in individuals as they pursue their careers. They do not indicate the types of changes that could occur if career movement was more consciously designed and managed.

Questions about the dimensionality and plasticity of job-person fit are crucial to the design and management of developmental work systems. However, to gain the necessary knowledge will require experimentation within an action research mode to discover not only what is, but also what could be (Argyris, 1976). Perhaps, through an experimental action research program, the type of work system that would be most consistent with a dynamic job-person model could be built "piece by piece" as it generates the information needed to bring the system one step closer to a truly developmental work system.

Note

1. The author wishes to express his appreciation to Thomas Cummings, James O'Toole, and Chester Schriesheim for their comments on an earlier draft of this paper.



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