The Study of Work Motivation in the 20th Century

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Employee motivation is currently a cornerstone of industrial and organizational (I-O) psychology. By the late 20th century, motivation research dominated I-O psychology journal space, accounting for one third of the published articles (Cooper & Robertson, 1986). In the final decade, motivation became the "most frequently researched topic in micro organizational behavior" (O'Reilly, 1991, p. 431). Yet this was not true in the early part of that century. Then the focus was on employee selection, and the topic of motivation was left to studies of laboratory animals by experimental psychologists or to studies of tasks in the workplace conducted by engineers. As late as 1959, Cofer lamented that motivation was not one of the categories used by Psychological Abstracts.

When and how did the subject of employee motivation become so important in I-O psychology? To answer this question, this chapter reviews the scholarly literature over the past 100 years. In doing so, we try to follow a directionally chronological path. Thus, the chapter is organized loosely into four time periods: the first (1900–1925), second (1925–1950), third (1950–1975) and fourth quarters (1975–2000) of the 20th century. In the first time period, with the birth of behaviorism, experimental psychologists focused on observable behavior and the stimuli that elicited it. Inner motivational states were not studied. Engineers argued that money is the critical incentive for work and that employees should be assigned a specific difficult task or goal to be attained. The assumption was that a worker would choose to exert effort, to persist until the task goal was attained in order to obtain money. Choice, effort, and persistence are the three pillars defining motivation. In the second time period, I-O psychologists focused on employee attitudes and attitude measurement. The belief in this time period was that the pathway to discovering sources of employee motivation was to identify the attitudes of the workforce. Numerous surveys revealed that money was only one of multiple variables that people report as having an effect on their motivation. The Hawthorne studies and studies on participation in decision making supported this conclusion. Studies in this time period were for the most part atheoretical.

The third quarter of the 20th century witnessed the development of theories as frameworks for predicting, explaining, and influencing employee motivation. These theories focused on
employee needs, cognition, and characteristics of the job itself. In the final quarter, three scientific theories dominated the scholarly literature on motivation in the workplace.

1900–1925

As described in other chapters in this text, Hugo Münsterberg, frequently referred to as the father of I–O psychology, engaged in systematic observations as well as interviews of factory workers (Münsterberg, 1913). This work is a precursor to the study of employee motivation in that it pointed to the need for overcoming “dreadful monotony” and “mental starvation” in the workplace (p. 196). His call went largely unheeded for nearly 2 decades. Münsterberg himself was far more interested in the issue of employee selection than he was in motivation.

Experimental Psychology

Behaviorism, articulated cogently by its founder, John B. Watson, advocated epiphenomenalism, namely that consciousness has no causal efficacy: “The time seems to have come when psychology must discard all reference to consciousness; when it needs no longer to delude itself into thinking that it is making mental states the object of observation” (Watson, 1913, p. 158). Behavior was viewed as automatic or reflexive to a stimulus rather than cognitive or intentional; the focus of the behaviorists was on learning rather than motivation (see also chap. 11).

E. Thorndike found that by presenting a reward (e.g., food) immediately after a behavior targeted by the experimenter occurred, the behavior increases. Thorndike (1911) labeled this discovery the law of effect. He also conducted an empirical study on satisfaction with work (Thorndike, 1917) that was published in the first volume of the Journal of Applied Psychology. Specifically, he examined the productivity and satisfaction of 29 adults who graded 10 printed compositions for 2 hours on 2 days. Speed of work, quality of work, and satisfaction were measured every 20 minutes. The results indicated that the quality and quantity of work remained the same during the 2-hour period but “satisfyingness” decreased steadily. Thorndike concluded that lack of rest affected a person’s interest, willingness, or tolerance rather than the quality and quantity of the product produced. The seeds were now planted for what was to become a major controversy in I–O psychology throughout the 20th century, namely, the relation between job satisfaction and performance.

With minor exceptions, little or no attention was given by psychologists in this time period to the subject of motivation in the workplace. Widespread application of the methodology of behaviorism to motivation in organizational settings was ignored until the 1970s, some 50 years later. The emphasis of psychologists in this time period was on selection (see chaps. 1, 3, and 8). Burt’s (1926) comprehensive textbook on industrial psychology contained no mention of motivation. The implicit study of motivation, as defined by efficient/effective behavior, was left to engineers.

Scientific Management

As described in previous chapters, Frederick Winslow Taylor developed what he called scientific management (Taylor, 1911). Foreshadowing goal-setting theory, he advocated that each employee be given a task, that is, a specific difficult amount of work, of a certain quality. A task (or goal) was assigned on the basis of time and motion study. This technique, he said, identifies ways to maximize a person’s productivity. The primary incentive for work in organization settings was presumed to be money. Taylor believed that employees should be paid from 30% to 100% of their wages for goal/task attainment (see also chap. 10 in this text).
1925–1950

As noted in previous chapters, in 1932, at the age of 34, Morris Viteles published *Industrial Psychology*. Unlike Burt (1926), Viteles included a chapter titled “Motives in Industry.” He argued that despite the use of financial incentive programs advocated by Taylor (1911), “analyzes of restriction of output reveal not only an unhealthy economic condition, but a serious situation in workers’ attitudes toward management” (p. 564). He stressed the need for “a detailed analysis of motives-in-work to determine the factors that underlie attitudes and activities which promote or interfere with economic efficiency and individual satisfaction at work” (p. 565). Viteles recommended a focus on “worker feelings and experiences rather than his logic or reasons as a factor in all his viewpoints and attitudes” (p. 581). The prime element “is the wish to enjoy the feeling of worth—recognition and respect on the part of others” (p. 582).

The research emphasis in this time period was primarily on ways of measuring employee attitudes to identify sources of motivation. The implicit theory was that positive attitudes toward or satisfaction with one’s work has a positive effect on one’s job performance.

### Attitude Surveys

Thurstone (1929) defined attitude as affect or overall degree of favorability regarding a psychological objective. The anonymous employee attitude survey as a method for data collection in organizational settings by I-O psychologists became popular in the 1930s. Uhrbrock (1934) was among the first I-O psychologists to use the Thurstone (1929) scale. He assessed the attitudes of 3,934 factory workers, 96 clerical workers, and 400 foremen toward the company. Rensis Likert’s (1932) doctoral dissertation at Columbia University revealed that a straightforward method of assessing attitudes, subsequently known as the Likert scale, eliminated the need for judges in scaling the statements, as well as the inclusion of negative statements. It correlated highly with complex methods of survey construction such as Thurstone’s scales. Likert scales require nothing more than the respondent indicating on a 5-point scale the extent of agreement with, or approval of, a survey item.

The results of these attitude surveys immediately brought into question the validity of a core principle of scientific management, namely, that employees are uniformly motivated by a desire for money, and the assumption that other motives are of little consequence. House (1938) found that nonselling employees, including unskilled labor, of a large merchandising company ranked money as 21st in importance. Of far greater importance were chances to show initiative (11.5), safety (3), steady employment (2), and fair adjustment of grievances (1).

In a study that focused explicitly on job satisfaction, Hoppock (1935) reported that satisfaction is affected by many factors other than money, including relative status of the person within the social and economic group with which he or she identifies himself or herself, relationships with superiors and associates on the job, the nature of the work, opportunities for advancement, variety, freedom from close supervision, visible results, appreciation, and security. These two studies foreshadowed theories subsequently put forth by Maslow (1943) and Herzberg (Herzberg, Mausner, & Snyderman, 1959).

### Laboratory Experiments

Few laboratory experiments on motivation were conducted in this time period. An exception is a series of experiments conducted by Maslow (1935) in Great Britain. He found that the standard that was set affected a person’s performance, but only when the person’s skill had developed to the point where there was a reasonable expectation by the individual that the standard could be
reached. Otherwise, urging people to do their best led to the highest performance. This latter finding was replicated in the United States by Kanfer and Ackerman (1989) more than 50 years later in their goal-setting study involving Air Force cadets in an air-traffic control simulation. Setting a standard (goal) for the performance of the worker, Mace concluded, will be most effective if it is adjusted to his or her level of skill and ability. This finding is the bedrock of the field studies on goal setting by Latham and his colleagues 40 years later.

Field Experiments

By the late 1920s, the widespread use of time and motion studies by engineers led to highly repetitive work. Each employee was in effect “standardized.” As Dunnette and Kirchner (1965) noted, employees were viewed by engineers as identical elements in the production process to be studied and manipulated as any other cog in the machinery of production.

Research in Great Britain by Wyatt, Fraser, and Stock (1929) was a precursor to job enlargement. They found that changing jobs at specific intervals reduces monotony. With light repetitive work, employees produce their best output if their task is changed every 1.5 to 2 hours. More frequent changes interfere with the “swing” of work. In addition, they found that piece rate resulted in fewer symptoms of boredom than hourly pay. This finding predates Lawler’s (1965) findings and supports Taylor’s (1911) earlier conclusion that money can indeed be an incentive for performance if job performance is the criterion for determining the person’s pay.

A subsequent study by Wyatt, Frost, and Stock (1934) foreshadowed field research on goal setting. Factory workers reduced their boredom by creating “definite aims” to complete a certain number of units in a given period of time.

The application of scientific management principles in a Philadelphia textile mill in the 1920s increased employee antagonism toward management as well as labor grievances and turnover. Elton Mayo, a sociologist at Harvard, concluded, on the basis of observation, that these difficulties were due to the monotony of the work. His solution was to allow the workers to take rest periods according to their own agreed-on schedules. The result was a large decrease in turnover and an increase in productivity. Mayo’s solution was based on his reasoning that money is only an effective incentive when it is used in conjunction with, rather than in opposition to, people’s other needs.

Hawthorne Studies. Mayo and his colleagues were subsequently asked to become involved with a series of studies of employee productivity (Mayo, 1933) for the Committee on Work in Industry of the National Research Council. Field experiments were conducted in the Hawthorne (Chicago) plant of the Western Electric Company, a manufacturer of equipment for the telephone industry. These experiments led to the “realization that the productivity, satisfaction, and motivation of workers were all interrelated” (Roethlisberger, 1977, p. 46).

The Hawthorne studies were attacked vigorously by Argyle (1953) for their lack of methodological rigor. In a reanalysis of the data, Franke and Kaul (1978) showed that two key reasons for relay performance improvement were the replacement of two low-producing workers as well as the introduction of an incentive system. By modern standards, these and other methodological confounds render the conclusions of the Hawthorne studies highly suspect. Where the advocates of scientific management simplistically assumed that person’s most basic motive is economic, Mayo and his colleagues made an “equally oversimplified assumption that group membership and affiliation are the most fundamental and essentially the only human needs of any consequence” (Dunnette & Kirchner, 1965, p. 133).

Nevertheless, these studies were said to be seminal because they showed that when people are given the opportunity to express their preferences and opinions, are free of overly strict su-
pervision, and are given standards, that is, goals that take into account their ability, they work effectively (Ryan & Smith, 1954). Years later Blum and Naylor (1968) concluded that just as Münsterberg's work is considered the birth of industrial psychology, the Hawthorne studies can be considered its "coming of age." (See chap. 14 for additional information and perspective on these studies.)

**World War II**

In response to the war with repressive fascist regimes in Europe, and in light of the findings of Mayo and his colleagues, the importance of employee participation in the decision making process (pdm) was becoming an implicit if not an explicit hypothesis of I-O psychologists, as well as union leaders. Harold Ruttenberg (1941), research director of the Steel Workers Organizing Committee, stated that the urge for self-expression is present in every individual in an industrial plant and that each person constantly seeks some way to express himself or herself.

Fifteen years of economic depression and war led Maier (1946) to conclude that the most undeveloped aspect of industrial progress is management of labor power. He cited an unpublished field experiment by Alex Bavelas, a former student of Kurt Lewin's, as an example of how to motivate workers. By securing group participation, management found that previously unattainable goals were reached by those workers. Two years later Ghiselli and Brown (1948) argued that the new emphasis of industrial psychology should be to maximize productivity consistent with the abilities, energies, interests, and motives of the worker.

French, also a former student of Lewin’s, showed that employee participation in decision making can overcome resistance to change (Coch & French, 1948). Similar findings were obtained 40 years later in terms of "voice," a concept central to organizational justice theory (Greenberg, 1987). Empirical research conducted by the University of Michigan's Survey Research Center (1948) in an insurance company also corroborated the importance of pdm:

> People are more effectively motivated when they are given some degree of freedom in the way in which they do their work than when every action is prescribed in advance. They do better when some degree of decision making about their jobs is possible than when all decisions are made for them. They respond more adequately when they are treated as personalities than as cogs in a machine. In short, if the ego motivations of self determination, of self expression, of a sense of personal worth can be tapped, the individual can be more effectively energized. The use of external sanctions, of pressuring for production, may work to some degree, but not to the extent that more internalized motives do.² (p. 10)

By the end of the second quarter of the 20th century and at the beginning of the third, I-O psychologists were showing contempt for scientific management. For example, Ryan (1947) concluded that time and motion study was inadequate because it relies on extremely crude estimates of effort by engineers. Moreover, it is based on the erroneous assumption that effort remains constant throughout comparisons of different work methods. Foreshadowing the research on job enrichment, he argued that wages are of secondary consideration because workers want a certain degree of independence and initiative plus recognition for their work and value to the organization. In addition, people want a superior who guides and directs rather than commands.

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¹It was Maier (1955) who proposed that job performance = motivation × ability.

²Erez (1997) reported that pdm is now used across cultures as a motivational technique. However, a meta-analysis by Wagner (1994) showed that the effect of pdm on an employee’s performance has statistical but lacks practical significance.
Similar to Ryan, Harrell (1949), as did Mayo, argued that motivation does not occur through the application of money alone. Harrell called the erroneous assumption that money is the only important incentive the "rabble hypothesis" because workers are treated as a group of unorganized rabble insensitive to the social motives of approval and self-respect. Similarly, Stagner (1950) stated that the problem of industrial harmony would not be solved until there is realization that both executives and workers want democratic self-assertion. He took strong issue with what he called the dollar fallacy, the erroneous belief that employers and employees are motivated only by dollars and cents.

Tiffin (1952) took umbrage with reference to workers as "hired hands" because it too reflects a mistaken viewpoint by management. A person's hands alone are never hired. The factors he cited that affect a worker's morale were similar to those identified in the Hawthorne studies. It is not so much the job as how the person feels about it and how the boss regards the employee that determines morale. In addition, Tiffin advised the necessity of taking into account social factors and working conditions.

The concept of motivation was now being explicitly discussed in the I-O literature, so much so that Harrell (1949) concluded that as recently as 1930, we assumed that the importance of psychology in industry was largely confined to the use of tests; today we view its function as the analysis of human relations in industry. Ryan (1947) stated that motive refers to factors that raise or lower the level of effort an individual puts into the task. Shortly thereafter, with his former doctoral student, Patricia Cain Smith (Ryan & Smith, 1954), he stated that motivation is the central problem of industrial psychology.

Harrell (1949), after reviewing the literature, concluded that motives are based on physiological drives (i.e., food, water, rest, sleep, and sex activity) that act in combination with a learned response to gratify this drive. His conclusion was based on the ongoing research of the behaviorists in experimental psychology (e.g., Hull, 1943). The most important motives in industry are the activity or the work itself, hunger, sex, social approval, and self-respect. Sex as a motive for work, he said, operates indirectly by making a person work harder and steadier in order to get married or to support his wife and family. In addition, he emphasized: "Whether or not motivation will be effective depends in part on the internal state of the organism—the level of aspiration—what a man expects of himself" (p. 269). In general, American employees in either the professions or management, concluded Harrell, are highly motivated; this is not true, he said, of the factory worker.

As the first half of the 20th century came to a close, the near exclusive emphasis of I-O psychologists on employee selection had shifted to include the topic of motivation and satisfaction. With one exception, however, research up to this point in time was atheoretical. The exception was an essay written by Abraham Maslow, a clinical psychologist. In that essay he specified needs, and the cues that arouse them, that energize and direct behavior.

Need Hierarchy Theory

Maslow's (1943) theory of human motivation was based on his observations of individuals who came to him for assistance in coping with difficulties in their personal lives. The theory was written during the Great Depression. From the outset of his paper, Maslow acknowledged that

The present theory then must be considered to be a suggested program or framework for future research and must stand or fall, not so much on facts available or evidence presented, as upon research yet to be done, researches suggested perhaps, by the questions raised in this paper. (p. 371)

Rather than focus on attitudes, Maslow posited that there is a hierarchy of five sets of goals for which people strive in seeking satisfaction of their basic needs, namely physiologi-
cal goals, safety, love, esteem, and self-actualization. Systematic research based on Maslow's theory did not occur in organizational settings for another 2 decades. Nevertheless, it had a tremendous influence in the very next decade on McGregor's (1957) formulation of "theory X" and "theory Y."

1950–1975

Research in the early part of the 1950s did not differ appreciably from the 4 decades of research that preceded it. Attitude surveys continued to be the primary method of data collection for I-O psychologists in their study of motivation. Behaviorism was at its zenith in experimental psychology with B. F. Skinner (1953) as its articulate champion.

Ryan and Smith (1954) argued against I-O psychology adopting the prevailing motivational paradigms of experimental and clinical psychology. To translate worker goals into Watson's terms of stimuli and responses, they said, was not only useless but misleading because it implies that the laws governing these stimuli and responses in experimental laboratory paradigms are the same as those which hold for all other stimuli and responses in everyday situations. The authors took issue with Hull's research on primary drives because to postulate some simple mechanism by which new activities come to be attractive to the organism makes it difficult, if not impossible, they said, to demonstrate that a particular activity in the work setting arises through biological determinism. As for Freud, Ryan and Smith noted wryly that his evidence that the individual is unaware of his or her real wish is likely due to the fact that the individual does not wish to admit or explain it to the listener. Finally, they dismissed the relevance of behaviorism and psychoanalysis because of the deemphasis of the importance of consciousness in regulating behavior. Consequently, Ryan and Smith called for general theories of motivation by industrial psychologists that take into account the wants, wishes, desires, and experiences of the individual. They argued the importance of intentions to anticipate future obligations or to avoid them.

Whether a means activity is initiated, and the degree of effort which is devoted to it, are functions of (a) the attractiveness of the goal, (b) the attractiveness of the means activity itself and of its surrounding conditions, (c) the uniqueness of the goal (as perceived by the individual), (d) the directness of relationship between the means and the end result, also as perceived or understood by the subject, and (e) the individual's estimates of his ability to perform the means activity well enough to achieve the goal. (Ryan & Smith, 1954, pp. 387–388)

Job Satisfaction and Job Performance

Viteles (1953) equated motivation with employee performance and morale. The conclusion emanating from attitude surveys as well as from the Hawthorne studies was that the worker who is highly productive is a worker who has positive attitudes toward the job. Thus, a primary variable of interest to I-O psychologists was employee morale or satisfaction. 2

A major breakthrough in knowledge occurred with an enumerative review of the literature by Brayfield and Crockett (1955) that forcibly and thoughtfully challenged that belief. They showed that there was little or no relation between these two variables. Shortly thereafter, a

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2 Although people in the workplace were still referred to as men or girls, the use of the word worker was shifting to that of employee and the neutrally descriptive term individual.

2The term job satisfaction and morale were used interchangeably until Glion (1958) and Stagner (1958) argued for differentiation. The former refers to the individual's attitudes toward the job; the latter refers to the perception that, through cooperation with the group, one's motives or needs will be met.
subsequent review by Vroom (1964) showed that the median correlation between a person’s satisfaction and performance was only .14. Nevertheless, these two variables remained interdependent in the eyes of employers and I–O researchers.

Motivation Theory

As noted in previous chapters, in 1953, Viteles published his book *Motivation and Morale*. This became the definitive textbook on this subject for 3 decades. In his review of theories in both experimental and social psychology, he commented favorably on Lewin’s “insistence that without a good ‘theoretical’ foundation applied research follows a path of trial and error, and becomes misdirected and inefficient” (p. 121). One-shot, one-context attitude surveys in the 1930s had mitigated the development of motivation theory in the workplace.

In the opening sentence of his *Annual Review of Psychology* chapter, Heron (1954), a psychologist in the United Kingdom, observed that

> it may well be that in the last five years we have experienced the end of an era in the history of industrial psychology. No startling development took place, no new theory provoked widespread discussion and opened fresh vistas; but perhaps something less sensational may be detected. Discontent can sometimes be divine, provided it results in thinking which ultimately issues in more appropriate activity. (p. 203)

Heron’s observation proved to be remarkably prescient. Innovation and knowledge in I–O psychology were about to blossom in the form of myriad theories of work motivation. These theories provided a framework for planning, conducting, and interpreting research. McGregor argued for the applicability of Maslow’s theory to industry.

*Theory X and Theory Y.* Douglas McGregor received his PhD from Harvard University, where he was influenced by Gordon Allport. However, McGregor did not see himself as an experimentalist (McGregor, 1960). Rather, he was, in the words of Warren Bennis (1985), a champion of the application of behavioral sciences with a flair for the right metaphor that generated and established a new idea. Of all behavioral scientists, he was in this time period the best known by managers until his death in 1964 (Boone & Bowen, 1987). (See also chap. 14 in this text.)

McGregor (1957) argued that the time had come to apply the social sciences to make human organizations truly effective: “To a degree the social sciences today are in a position like that of the physical sciences with respect to atomic energy in the thirties. We know that the past assumptions of man are in dispute and in many ways, incorrect” (McGregor, 1957, p. 22). The subject of motivation is the best way, he said, of indicating the inappropriateness of the conventional view of employees, which he called “theory X.” The assumption underlying theory X is that without active intervention by management, people are passive—even resistant—to organizational needs. This is because the average person is by nature indolent, lacks ambition, is inherently self-centered, and is not very bright. This behavior is not a consequence of people’s inherent nature, argued McGregor; rather, it is the outcome of management philosophy and practice. He then explained Maslow’s theory in detail to show why theory X is an inadequate approach to motivation: “Unless there are opportunities at work to satisfy these higher level needs, people will be deprived” (p. 28). He further noted, “People will make insistent demands for more money under these conditions. It becomes more important than ever to buy the material goods and services which can provide limited satisfaction to the thwarted needs” (p. 28).

Thus McGregor concluded that a different theory of human motivation was needed in the workplace, a theory based on the correct assumptions about human nature, a theory that makes
explicit "the human side of an enterprise." McGregor called this "theory Y." Theory Y differs from theory X in that the latter places exclusive reliance on external control of behavior, whereas theory Y emphasizes self-control and self-direction. McGregor stated that

the motivation, the potential for development, the capacity for assuming responsibility, the readiness to direct behavior toward organizational goals are all present in people. Management does not put them there. A responsibility of management is to make it possible for people to recognize and develop these human characteristics for themselves. (McGregor, 1957, p. 6)

As was the presentation by Maslow (1943), McGregor's (1957) paper and subsequent book (McGregor, 1960) were void of data to support either theory Y or Maslow's theory on which it was directly based. It was not until the 1960s that theory-driven research was conducted.

Porter used Maslow's theory to frame issues of managerial motivation. Consistent with Maslow's theory, Porter (1961) showed that the highest order need, self-actualization, is the most critical in terms of both perceived deficiency in fulfillment and perceived importance to both bottom and middle management.

"A good theory is one that holds together long enough to get you to a better theory" (Hebb, 1961, p. 21). In the next decade, with the publication of Wahba and Bridwell's (1976) critique, Maslow's needs hierarchy theory was largely abandoned by I-O psychologists. None of the factor analytic studies showed clear support for Maslow's classification of needs.

Alderfer (1972) reformulated Maslow's theory based on three related needs in an organizational setting, namely existence (e.g., pay, fringe benefits), relatedness (e.g., social interactions), and growth (e.g., esteem and self-actualization). Alderfer argued that, unlike Maslow's proposed hierarchy, these three needs can act simultaneously. Much of the research on this theory, conducted by Alderfer himself, yielded mixed results.

**Job Characteristics.** McGregor (1960) argued for a shift from research on employee selection to an emphasis on satisfying the employee's needs:

The reason is that we have not learned enough about the utilization of talent, about the creation of an organizational climate conducive to human growth. The blunt fact is that we are a long way from realizing the potential represented by the human resources we now recruit into industry. We have much to accomplish with respect to utilization before further improvements in selection will become important. (Preface, p. x)

McGregor (1960) cited approvingly a comprehensive study published in a book a year earlier that described how to design jobs that are conducive to satisfying needs for human growth:

A recent, highly significant study of the sources of job satisfaction and dissatisfaction among managerial and professional people suggests that these opportunities for "self-actualization" are the essential requirements of both job satisfaction and high performance. The researchers find that "the wants of employees divide into two groups. One group revolves around the need to develop in one's occupation as a source of personal growth. The second group operates as an essential base to the first and is associated with fair treatment in compensation, supervision, working conditions, and administrative practices. The fulfillment of the needs of the second group does not motivate the individual to high levels of job satisfaction and... extra performance on the job. All we can expect from satisfying [the second group of needs] is the prevention of dissatisfaction and poor job performance." (p. 55)

This book was written by Frederick Herzberg (Herzberg et al., 1959). It was the basis for what was to become known alternatively as the two-factor theory, motivation-hygiene theory, or job enrichment. People have two basic sets of needs, namely, survival and growth. Characteristics of the job facilitate or hinder satisfaction of the "growth needs" of self-esteem and self-satisfaction.
Herzberg obtained his PhD under the supervision of John Flanagan at the University of Pittsburgh. Herzberg’s peers as a doctoral student included George Albee, who was to become a clinical psychologist, and William W. Ronan, who would become an I–O psychologist. Herzberg, torn between choosing a career in clinical or I–O psychology, decided to study the mental health of people in industry. In a doctoral seminar, he informed Flanagan that he wanted to use the critical incident technique (Flanagan, 1954) to collect data. Flanagan responded dryly as to the inappropriateness of doing so because of the likelihood that people would attribute satisfying incidents to their own behavior and incidents that were dissatisfying to them to factors outside their control (Ronan, personal communication, November 16, 1968). The warning was ignored.\(^6\)

Similar to Maslow and McGregor, Herzberg (1966) believed that “the primary function of any organization, whether religious, political or industrial, should be to implement the needs for man to enjoy a meaningful existence” (Foreword, p. x). He and his colleagues analyzed the content of the critical incidents they collected from engineers and accountants regarding when these people felt exceptionally good or exceptionally bad about their jobs in order to determine ways to increase productivity, decrease turnover and absenteeism, and smooth labor relations. Just as Flanagan had predicted, the results showed that job content factors were a primary source of motivation or satisfaction whereas context or hygiene factors were the source of dissatisfaction, hence the label two-factor or motivation-hygiene theory. Herzberg’s most controversial conclusion was that job satisfaction and job dissatisfaction, rather than being on one continuum, are two continua. That is, the opposite of dissatisfaction is not satisfaction, but no dissatisfaction; similarly, the opposite of job satisfaction is not dissatisfaction, but no job satisfaction. Herzberg (1966) argued that to enrich a job, attention should be given to the work itself (job content), recognition, responsibility, achievement, and opportunities for advancement. Contextual or hygiene factors such as working conditions, company policy, supervision (technical as well as interpersonal), and pay should be focused on only as ways to minimize job dissatisfaction. Focusing on the latter will have little or no effect on a person’s effort or performance.

The two-factor aspect of the theory was subsequently explained by Vroom (1964) in his book, and again (Vroom, 1967) to a standing-room-only symposium at APA where Herzberg was a presenter, to be a methodological artifact. Herzberg’s results were replicated only when the critical incident technique was used, a technique that had been originally designed by his mentor, Flanagan, for job analysis. Other psychologists agreed with Vroom’s criticism (e.g., King, 1970). The same events caused both satisfaction and dissatisfaction, but different agents were perceived by employees as responsible—the self for satisfying events, and variables other than the self for dissatisfying events (Locke, 1976).

Herzberg (1966) responded in vain to this attack:

> The supposition that people would prefer to blame hygiene factors rather than the motivators for their job unhappiness in order to make themselves look good is naïve. It does not take enough experience with job-attitude data to find that the opposite is more often true. Employees who wish to make themselves look good are much more prone to say they are unhappy because they do not have responsibility, are not getting ahead, have uninteresting work, see no possibility for growth. (pp. 130–131)

A later version of job enrichment theory was formulated by Richard Hackman and his former doctoral student, Gregory Oldham (Hackman & Oldham, 1975, 1976). This theory took into account individual differences. In brief, they developed a job diagnostic survey to assess the motivating potential of a job and the employee’s growth needs or readiness to perform in an

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\(^6\)Ronan was Gary Latham’s master’s thesis advisor.
enriched job. People who are high in achievement or growth needs are more satisfied and perform better than those who are lower when placed in an enriched job. An enriched job is one that scores high on skill variety, task identity, task significance, autonomy, and task feedback.

Subsequent studies showed that moderating effects of individual differences on task or job design were not significant. "Enriched jobs seem to exert positive affective and behavior effects regardless of an incumbent's desire for higher order need satisfaction, need for achievement, need for autonomy, etc." (Cummings, 1982, p. 546). Yankelovich's (1974) surveys of job-related attitudes among American youth revealed a strong preference for careers involving self-control over one's job activities and a desire for interesting work as well as material rewards, regardless of education level. He also found that people in general define success in terms of self-fulfillment. Moreover, consistent with what Maslow would have predicted in that time period, the survey showed that these respondents had little or no fear of economic hardship.

Equity Theory. Herzberg's theory of job enrichment states that money can be a major source of dissatisfaction. The theory says little about what the person will do as a result of this dissatisfaction. Equity theory, developed by Jean "Stacy" Adams, filled in the blank. Adams, born in Belgium, received his PhD at the University of North Carolina, Chapel Hill. His theory was developed as a result of his association at Stanford University with Leon Festinger as well as his work at the General Electric Company.

Adams was influenced by Festinger's (1957) cognitive dissonance theory which states that to the extent that a discrepancy exists within the individual, the person is motivated to reduce it; the greater the discrepancy the greater the motivation. Equity theory deals primarily with money. In brief, the theory (Adams, 1963) states that people examine the ratio of their "outcomes" (denominator) relative to their "inputs" (numerator) relative to those of a comparison other. Inputs include the person's effort, education, and experience. Outcomes include money, recognition, and working conditions. Equity theory states that unequal ratios produce tension within the person. This tension can be alleviated by cognitively distorting one's inputs or outcomes, leaving/ quitting the situation, changing the inputs (e.g., increases/ decreases effort) or outcomes, or changing one's comparison other. The solution most likely to be used to reduce inequity is the one with the least perceived cost.

The theory was attacked for lack of precision. Campbell, Dunnette, Lawler and Weick (1970) concluded that

predictions from equity theory are made very difficult by the complexity making up the input-output package and the multitude of ways in which inequity can be resolved. However, the theory presents a clear warning to organizations that they must learn a great deal more about the nature of the input-output comparisons and the way they develop and change. (p. 382)"
Because of these criticisms, and because another theory, expectancy theory, was viewed by influential psychologists, particularly Lawler (1970), as having greater predictive and explanatory power regarding performance in paid work settings than equity theory, the attention of I-O psychologists shifted to this theory. 9

Expectancy Theory. Victor Vroom, a Canadian from Montreal, earned his undergraduate and master's degree from McGill and his PhD from the University of Michigan, where he studied with N. R. F. Maier. Rather than focus on factors in a job that energize and sustain behavior, Vroom (1964, p. 6) used "the term motivation to refer to processes governing choices made by persons or lower organisms among alternative forms of voluntary activity." Influenced by the research of Tolman, an experimental psychologist, as well as Lewin, a social psychologist, Vroom developed a cognitive theory based on a person's expectancies, valences, choices, and instrumentalities. Central to the theory are two propositions (Vroom 1964).

Proposition 1. The valence of an outcome is a monotonically increasing function of the algebraic sum of the products of the valences for all other outcomes and his conceptions of its instrumentality for the attainment of these other outcomes.

Proposition 2. The force on a person to perform an act is a monotonically increasing function of the algebraic sum of the products of the valences of all outcomes and the strength of his experiences that the act will be followed by the attainment of these outcomes. (pp. 17-18)

That is, the effort that people exert is a function of their expectation or subjective probability estimate that certain outcomes will occur as a result of their performance and the valence for them of those outcomes. The greater the valence of any outcome, the more likely the person is to choose to exert effort to take action. The valence of an outcome is in turn a function of its instrumentality for obtaining other outcomes and the valence of those other outcomes.

Similar to equity theory, this theory states that people base their actions on their perceptions and beliefs. Unlike equity theory, which focuses solely on the outcomes of one's perceptions of fairness, expectancy theory was developed to explain virtually all work-related behavior ranging from occupational choice to performance on the job. Thus, expectancy theory was the first cognitive, broad-range theory of motivation developed by an I-O psychologist. The theory focuses on choice, effort, and persistence. Vroom's contribution was principally to show how expectancy-type theories could be applied to work behavior. These processes included the factors affecting people's choice of their occupation and of the organizations in which to practice them, their satisfaction with their choices, and the effectiveness of their performance. It is the last of these dependent variables that has received the greatest attention. People make choices that determine the amount of effort they devote to performing their jobs effectively. The amount of such effort is hypothesized to be a function of four classes of variables: (a) the valence of rewards and sanctions potentially linked by the organization to effective performance, (b) the perceived instrumentality of effective performance for the attainment of these rewards and/or the avoidance of sanctions, (c) the intrinsic valence of high performance itself, and (d) the expectancy that higher effort will result in higher performance. The first two variables are frequently thought necessary for extrinsic motivation, whereas the last two are components of intrinsic motivation.

In the previous decade, the belief that job satisfaction affects job performance had been shattered by Brayfield and Crockett (1955). On the basis of expectancy theory, Lawler, to-

9Lawler's first doctoral student was Martin Evans. Evans developed the theory of path-goal leadership for his doctoral dissertation.
gether with his mentor, Porter (Lawler & Porter, 1967), argued that it is nevertheless important
to measure the satisfaction level that exists in organizations because it influences both em-
ployee attendance and turnover. They then proposed the radical notion that rather than being a
cause of performance, satisfaction is caused by it. They concluded that organizations should
find ways of maximizing the relation between performance and satisfaction rather than
satisfaction itself.

Platt (1964) argued that a theory that cannot be mortally endangered cannot be alive. That
expectancy theory was very much alive is evident by voluminous research conducted to test it.
In less than a decade there were two comprehensive reviews of this literature published in the
prestigious Psychological Bulletin (Heneman & Schwab, 1972; Mitchell & Biglan, 1971). But
by the mid-1970s, Miner and Dachler (1973, p. 381) concluded that “a closer examination of
the literature reveals a number of inconsistent findings” and that it “is remarkably weak and
contradictory in other respects” (p. 382). Locke (1975, p. 458) noted that “there are no consist-
tent findings regarding which components are the best predictors of performance.” Moreover,
the results were suspect, he said, in that the theory predicts self-ratings of effort, attitude, and
performance better than supervisory evaluations. Furthermore, he argued that the theory was
incorrect in assuming (a) that people choose to maximize outcomes and (b) that they usually
perform complex evaluations in making choices that will enable them to maximize outcomes.
Finally, Schmidt (1973) pointed out that the formulas involved in the theory assume a ratio
scale when there is no known way of measuring valences on this scale. In an enumerative
review of 31 studies testing the theory, House, Shapiro, and Wakhba (1974) reached similar con-
clusions. A meta-analysis (Van Eerde & Thierry, 1996) indicated that there is modest support
for the individual components of Vroom’s theory but that the model itself is not valid.

Behavior Modification. With Vroom’s success in building a heuristic theory based in part
on theory and research in experimental psychology, I-O psychologists ignored the concerns voiced
by Ryan and Smith 2 decades earlier and began to examine behaviorism as studied and imple-
mented by Skinner and his followers. In an influential essay, Nord (1969) argued the similarities
between McGregor’s basic arguments and Skinner’s emphasis on the environment in shaping a
person’s behavior. In Skinner’s (1953) view, behavior is said to be a function of reinforcers.

Remove the gratuitous physiologizing, and the point is made that motives and purposes are in peo-
ple while contingencies of reinforcement are in the environment, but motives and purposes are at
best the effect of reinforcements. The change wrought by reinforcements is often spoken of as the
“acquisition of purpose or intention,” and we are said to “give a person a purpose,” by reinforcing
him in a given way. These are convenient expressions, but the basic fact is that when a person is
“aware of his purpose” he is feeling or observing introspectively a condition produced by rein-
forcement. (Skinner, 1974, p. 58)

Well trained in experimental methods, I-O psychologists in this time period increasingly
turned to both laboratory and field experiments to provide rigorous tests of phenomena that
were identified in correlational and case studies in the field. For example, Yukl, Wexley, and
Seymore (1972), in a laboratory experiment, obtained results that were contrary to what might
be predicted by instrumentality beliefs as posited by expectancy theory. Their results were con-
sistent with Skinner’s research with rats and pigeons. Performance was higher when people
were paid on a variable ratio schedule of reinforcement than on a continuous one. Latham and
Dossett (1978) showed that consistent with Skinner’s findings, unionized mountain beaver
trappers at the Weyerhaeuser Company who were inexperienced had higher productivity when
paid on a continuous reinforcement schedule whereas their experienced counterparts had
higher productivity on a variable ratio schedule.
In less than a decade following Nord's essay, Luthans and Kreitner (1975) published a book on ways of using behavior modification methodology in organizational settings. Dunn (1976) referred to this methodology as one of seven milestones in I-O psychology because it makes explicit the operations that must be followed to increase the probability that the interventions will bring about a relatively permanent change in behavior. The methodology makes explicit the types of data that should be collected and the operations that should be followed in collecting these data. A *Handbook of Organizational Behavior Management* was published (Frederiksen, 1982).

With few exceptions (e.g., Komaki, 1998), the interest of most I-O psychologists in behaviorism quickly waned in the final quarter of the 20th century. Experimental psychologists such as Dulany (1968) had demonstrated the effect of cognitive influences on these procedures as did Kaufman, Baron and Kopp (1966) regarding reinforcement schedules. I-O psychologists were troubled by the philosophy of behaviorism, especially determinism and epiphenomenalism. In addition, Locke (1977, 1978) showed how behavior modification researchers in I-O psychology implicitly include cognitive processes. He (Locke, 1980) argued that the effect of feedback on performance cannot be interpreted as supporting behaviorism, because feedback is mediated by goal setting.

With the decline of behaviorism in I-O psychology, two theories were about to dominate the literature on motivation for the remainder of the century, namely goal setting and social learning, later to be relabeled social cognitive theory.

**Goal-Setting Theory.** Edwin Locke was educated at Harvard University, the bastion of behaviorism in that time period. He did his PhD at Cornell under the supervision of T. A. Ryan and Patricia Cain Smith. There he became an ardent critic of behaviorism.

Ryan (Ryan, 1947, 1970; Ryan & Smith, 1954) argued that people strive to behave intentionally. Needs, beliefs, and attitudes affect behavior through intentions. Thus, once they are formed, intentions are the immediate antecedents for predicting and explaining behavior. Neither equity nor expectancy theory explicitly addresses intentions.

Locke's doctoral dissertation at Cornell was based on a series of laboratory experiments to test Ryan's hypothesis regarding the effect of intentions. The culmination of these experiments (Locke, 1968) led to three propositions that are at the core of goal-setting theory: (a) specific high goals lead to higher performance than no goals or even an abstract goal such as "do your best"; (b) given goal commitment, the higher the goal the higher the performance; and (c) variables such as monetary incentives, participation in decision making, feedback, or knowledge of results affect performance only to the extent that they lead to the setting of and commitment to specific high goals. In short, goals have the effect of directing attention and action (choice), mobilizing energy expenditure (effort), prolonging effort over time (persistence), and motivating the individual to develop relevant strategies (cognition) for goal attainment (Locke, Shaw, Saari, & Latham, 1981). Given goal commitment, job performance improves because the goal provides a regulatory mechanism that allows the employee to observe, monitor, subjectively evaluate, and adjust job behavior toward effective goal attainment. Goal setting taps a fundamental attribute of human behavior, namely, goal directedness (Lee, Locke, & Latham, 1989).

In their reviews of the literature, both Austin and Vancouver (1996) and Mitchell and Daniels (2003) concluded that the one overriding common theme among almost all psychological approaches to motivation is goals.

As noted by Pervin (1989), the concept of goal as a motivational construct has a number of advantages over needs and external reinforcers. By emphasizing the cognitive representation or image of a goal, the employee is freed from the immediacy of a current stimulus. The employee is oriented toward the future as far as cognitive capacity permits.
The results regarding goal difficulty seemingly contradict those of Atkinson (1953), a social psychologist who had been a student of McClelland. Atkinson’s theory of need for achievement states that task difficulty, measured as probability of task success, was related to performance in a curvilinear, inverse function. The highest level of effort is expended on tasks that are moderately difficult. Atkinson, however, did not measure personal preference goals or goal difficulty. His findings have not been replicated when task performance goals were measured.10

Similar to Lawler and Porter (1967), Locke (1970) too viewed satisfaction as resulting from performance. However, he argued that it is the result of goal-directed behavior and value attainment as a result of reaching one’s goals. Goal specificity delineates the conditional requirements for positive self-evaluation. An abstract goal such as “do your best” is at best a placebo. It provides little or no basis for regulating one’s efforts let alone for evaluating how one is doing.

In reviewing Locke’s laboratory experiments, Hinrichs (1970, p. 525) questioned whether similar results “will carry through in the complex behaviors required in organizations.” Similarly, in their review of expectancy theory, Heneman and Schwab (1972) stated,

A noteworthy aspect of research on expectancy theory is the emphasis on investigating employees in their natural work environments, thus providing a high degree of external validity. In the case of motivation... this is in direct contrast to research on... goal setting theory (Locke, 1968) which has usually entailed student subjects working on laboratory tasks in experimental settings. The cost of external validity has been of course, a general inability to make causal inferences. (p. 8)

This was about to change with Latham’s work at the American Pulpwood Association (e.g., Renan, Latham, & Kinne, 1973), followed by his research conducted at the Weyerhaeuser Company (e.g. Latham & Yukl, 1975).

1975-2000

By the final quarter of the 20th century, dust bowl empiricism, or atheoretical, data-driven research, was dead. In their Annual Review of Psychology chapter on attitudes and motivation, Miner and Dachler (1973) were able to restrict their focus to theory and theory-oriented research. Although one theory of motivation that had appeared in the previous quarter continued to thrive in terms of theoretical and practical significance, interest in other theories waned as two others took their place.11

In his Annual Review of Psychology chapter, Mitchell (1979, p. 252) reported that Maslow’s theory, Alderfer’s ERG model, and Herzberg’s theory of job enrichment “have simply been absent from current research.” The same was true of equity theory. “While most people believe that a sense of justice is important in effecting [sic] work motivation, we still do not know much about how it is defined or its actual impact on performance”(Mitchell, 1979, p. 259). The answers would not be forthcoming until nearly a decade later when Greenberg and his colleagues would publish their research on organizational justice.

10Masui, Okada, and Kukuyama (1982) found that achievement motivation has no effect on performance independently of goals that are set. Goals people set predict their performance and level of satisfaction better than do personality measures of achievement (Yukl & Latham, 1978). However, Konfer and Heggstad (1997) developed a 48-item scale that assesses a person’s general motivation. Using this scale, they found that people who have high achievement and low anxiety traits excel in self-regulation.

11A cynic might argue that researchers abandoned one theory for another because of fad, fashion, or folderol (Dunnette, 1966). History, however, suggests that identification of methodological weaknesses of the predictive or explanatory power of a theory by respected scholars led to the development of and subsequent attention to a new theory. As Philips (1987) noted, “Any position can be supported by positive reasons... but what really counts is how well the position can stand up to vigorous assault” (pp. vii–ix). Funder (1998) argued that a theory should be parsimonious; if one theory can legitimately subsume another, it should do so.
Roberts and Glick's (1981) highly critical review of Hackman and Oldham's job characteristics theory resulted in essentially no new work on it being published subsequent to 1983 (Schneider, 1985). Lack of reliability in measurement, lack of discriminant validity with other attitudinal measures of jobs, and halo error among perceived job characteristics were among the problems cited.

Goal-Setting Theory

At the beginning of the fourth quarter of the 20th century, there were a sufficient number of empirical studies on goal setting to warrant two literature reviews (Latham & Yukl, 1975; Steers & Porter, 1974). By the mid-1980s, "One topic that replaced expectancy theory for researchers was goal setting theory, a work motivation theory unconcerned with individual differences in needs, desires, or instrumentality perceptions" (Schneider, 1985, p. 577). Miner (1984), in his review of organizational behavior theories, concluded that goal-setting theory was among the most valid and practical. Pinder (1984, p. 169) stated that "goal-setting theory has demonstrated more scientific validity to date than any other theory or approach to work motivation presented in this book."

In a field experiment involving research scientists and engineers at Weyerhaeuser, Latham, Mitchell, and Dossett (1978) showed that consistent with the theory, praise and public recognition had no effect on behavior unless a specific difficult goal was set. Employee participation in setting goals led to higher performance than an assigned goal, not because of goal commitment but because higher goals were set. Consistent with the theory, high goals led to high performance. Subsequent studies (e.g., Latham & Saari, 1979a; Latham & Steege, 1983) showed that when goal difficulty is held constant, assigned goals that are accompanied by a rationale (Latham, Erez & Locke, 1988) are as effective as participatively set goals in increasing an individual's performance.

Latham, Winters, and Locke (1994) found that the effect of pdm on performance is primarily cognitive rather than motivational; that is, the effect is mediated by self-efficacy and task strategy. A subsequent study by Seijts and Latham (2001) showed that people with high self-efficacy are more likely than those with low self-efficacy to discover and implement task-relevant strategies that in turn affect performance positively. Mediation analyses showed that strategies had both a direct effect on the person's self-efficacy and an indirect effect on performance. Thus, participation in decision making is effective, as its advocates in the 1940s proclaimed, but only when it leads to the discovery of an effective task strategy and increases the employee's self-efficacy. Later goal-setting research showed that on tasks that are complex for people, a specific, difficult learning goal rather than an outcome goal should be set (Winters & Latham, 1996).

By the close of the 20th century, research had shown that setting specific, difficult goals increases performance on more than 100 different tasks, involving more than 40,000 participants in at least eight countries (Locke & Latham, 1990, 2002). In short, goal setting was shown to be among the most valid and practical theories of employee motivation in organizational psychology (Lee & Barley, 1992).

Action theory, developed by German psychologists (e.g., Frese & Zapf, 1994), is sympathetic with goal setting. The theory stresses the importance of implementation intentions in addition to goal intentions (Gollwitzer, 1993). The theory posits ways that people turn their intentions to actions, particularly in overcoming obstacles to goal attainment.

Control theory, as formulated by Carver and Scheier (1981), also emphasizes goal setting. As did Ryan (1970), Carver and Scheier stressed that when people pay attention to what they are doing, they usually do what they intend to do, relatively accurately and thoroughly. The the-
ory asserts that the source of motivation is a negative feedback loop, such as characterizes a thermostat that eliminates goal-performance discrepancies. Perceived discrepancy between performance and the reference standard automatically triggers action to reduce the incongruence.

In disagreement with this position, both Bandura (1989) and Locke and Latham (2002) argued that goal setting is a discrepancy-creating process. Motivation requires feed-forward control in addition to feedback. After people attain their goal, they often set an even higher goal. The subsequent setting of a high goal creates rather than reduces motivation discrepancies to be mastered. "Self-motivation thus involves a dual cyclic process of disequilibrium, production followed by equilibratory reduction" (Bandura, 1989, p. 38). A regulatory process in which matching a standard begins inactivity, argued Bandura, does not characterize self-motivation. Such a feedback control system produces circular action that leads nowhere. People can increase their level of motivation by setting goals before any feedback is provided regarding performance.

Farr and his colleagues (Farr, Hofman, & Ringsenbach, 1993) were among the first to draw the attention of the I-O community to Dweck's work in educational psychology on goal orientation. Dweck argued that

the study of motivation deals with the causes of goal-oriented activity. ... Adaptive motivational patterns are those that promote the establishment, maintenance, and attainment of personally challenging and personally valued achievement goals. Maladaptive patterns, then, are associated with a failure to establish reasonable, valued goals, to maintain effective striving toward those goals or, ultimately, to attain valued goals that are potentially within one's reach. (Dweck, 1986, p. 1040)

VandeWeele and Cummings (1997) found that this individual difference variable affects a person's performance in organizational settings. Those with a learning goal orientation focus on mastery (learning) of complex tasks while those with a performance goal orientation choose tasks on which they believe they can excel. Subsequent research suggests that on complex tasks, the effect of this trait is masked by the setting of specific high learning goals (Scyts, Latham, Tasa, & Latham, 2004). As is the case with a performance outcome goal, a learning goal is a strong variable (Adler & Weiss, 1988).

Social Cognitive Theory

Still another theory that emphasizes the importance of goal setting on motivation is Bandura's social cognitive theory. Albert Bandura, a social psychologist, was born and raised in Alberta, earned his undergraduate degree in psychology at the University of British Columbia, and received his PhD under the supervision of Kenneth Spence, the highly respected behaviorist at the University of Iowa.

Bandura repudiated behaviorism, because it embodies, he said, an erroneously "mechanistic" view of behavior. Reinforcing events change behavior through the intervening influence of thought (Bandura, 1974). Similarly, Mischel (1973) suggested that people regulate their behavior through goal setting and self-produced consequences to goal attainment: "Even in the absence of external constraints and social monitors, persons set performance goals for themselves and react with self-criticism or self-satisfaction to their behavior depending on how well it matches their expectations and criteria." (Mischel, 1973, pp. 273-274).

The year 1977 was a watershed year for psychology with the publication of Bandura's theory in the Psychological Review (Bandura, 1977a), described more fully in a book (Bandura,
1977b). Originally calling it social learning, Bandura re-labeled it social cognitive theory (Bandura, 1986) to avoid confusion with similarly named theories. In brief, the theory states that behavior is a continuous reciprocal interaction among cognitive, behavioral, and environmental variables. Explicit in this view is the argument that behavior both is determined by and affects environmental consequences, which in turn affect the person's conscious intentions or goals, and vice versa (Bandura, 2001). Thus, social cognitive theory provides a theoretical framework that encompasses the primary variables in both the cognitive and the behaviorist camps.

Whereas behavioristic doctrine states that learning can occur only through performing responses and experiencing their effects, social cognitive theory enlarges this view by emphasizing vicarious, symbolic, and self-regulating processes in acquiring and maintaining behavior. The theory states that people can learn vicariously by observing the behavior of others and its consequences for them. Through the use of symbols, people are able to foresee probable consequences, set goals, and act accordingly. Consequently, as a result of self-regulatory processes, people learn to function as agents in their own self-motivation, through rewards for progress toward goal attainment.

The impact of this theory on I-O psychologists was immediate (e.g., Latham & Saari, 1979b) for at least two reasons. The behaviorists advocated a "black box" approach to psychology. The sole focus on observable stimuli, responses, and consequences of responses removed the necessity of peering inside an organism (the "black box"); individual differences were dismissed as merely differences among organisms in their histories of reinforcement. Social cognitive theory identified two cognitive variables that play a mediating role among the stimulus, the response, the consequence, and the subsequent behavior. These two cognitive variables are outcome expectancies (one's belief that the given outcome will occur if one engages in the behavior) and self-efficacy (one's belief that one can execute a given behavior in a given setting). "In regulating their behavior by outcome expectations, people adopt courses of action that are likely to produce positive outcomes and generally discard those that bring unrewarding or punishing outcomes" (Bandura, 2001, p. 7).

The likelihood that people will act on the outcomes they expect prospective performances to produce depends on their beliefs about whether or not they can produce those performances. A strong sense of coping efficacy reduces vulnerability to stress and depression in taxing situations and strengthens resiliency to adversity. (Bandura, 2001, p. 10)

Low self-efficacy can thus nullify the motivating potential of positive outcome expectancies. Goals, argued Bandura, give direction to pursuits. They invest activities with meaning and purpose. The common factors conducive to enduring motivation, he argued, are setting goals in accordance with one's perceived capabilities (self-efficacy) and having informative feedback of progress.

Wood and Bandura (1989) as well as Gist and Mitchell (1992) explained in detail the applicability of the theory to organizational settings. Two separate meta-analyses of empirical research in work-related settings showed the strong link between self-efficacy and a person's performance (Sadri & Robertson, 1993; Stajkovic & Luthans, 1998). Perceived self-efficacy contributes independently to subsequent performance after controlling for prior performance and indexes of ability (Bandura, 1997). A strong belief in one's performance efficacy is essential to mobilize and sustain the effort necessary to succeed. After people attain their goals, people with high self-efficacy set higher goals. These higher goals create new motivating discrepancies to be mastered (Bandura & Locke, 2003). As Locke (1965, p. 84) had shown years earlier, "getting closer to a 'standard' is both a source of satisfaction and an impetus to
continued effort." Latham (2001) showed the importance of changing employee outcome expectancies to gain commitment to an organizational goal.

The theory differs from Vroom's expectancy theory in that it argues that people exclude entire classes of options rapidly on the basis of their perceived efficacy. There is an important difference, Bandura and Locke (2003) argued, between belief in the utility of effort and belief that one can mobilize oneself to sustain effort in the face of perceived impediments and setbacks. Expectancy theory's emphasis on effort, argued Bandura, limits it to routine activities.

Goal-setting theory and social cognitive theory are similar in that both emphasize the importance of conscious goals for predicting, explaining, and regulating performance as well as the importance of feedback as a moderator of the goal-performance relation (Erez, 1977). Goal setting and feedback in relation to the goal provide the framework for self-management (Latham & Locke, 1991). The effect of self-management on self-efficacy and job attendance of unionized employees was shown by Frayne and Latham (1987).13

The two theories differ primarily in their relative emphasis on the variables that constitute them. The emphasis in goal-setting theory is on the core properties of an effective goal, namely specificity and difficulty level, as well as the mediators, direction, effort, persistence, and strategy. Moreover, goal-setting research, relative to research on social cognitive theory, has focused on goal content (performance vs. learning) as well as on the method of setting goals (assigned, self, or participatively set). Goal-setting theory is not limited to but focuses primarily on motivation in work settings. In contrast to goal-setting theory, social cognitive theory and the research that underlies it have emphasized the importance of self-efficacy as well as outcome expectancy, two different motivational systems that enhance goal commitment and persistence in the face of difficulties. Social cognitive theory, unlike goal setting, specifies the ways that self-efficacy can be enhanced. There are no points of disagreement between the two theories in the assumptions that underlie them. In fact, the concept of self-efficacy has been integrated with goal-setting theory. People with high self-efficacy set higher goals, are more committed to assigned goals, and use better task strategies to attain the goals, and respond more positively to negative feedback than those with low self-efficacy (Locke & Latham, 2002).

Organizational Justice Theory

Toward the end of the 20th century, O'Reilly (1991, p. 432) found that "the bulk of organizational behavior continues to focus on the two dominant theories: goal setting and equity." The issue of equity, specifically organizational justice, was addressed in a theory developed by Jerald Greenberg (1987), who received his PhD under the supervision of Gerald Loevingal at Wayne State. This theory filled a void noted earlier by Mitchell (1979) in that it provided a new framework that addresses fairness and trust in the workplace. It answered the question in the title of Loevingal's (1980) article, "What Should Be Done With Equity Theory?" Greenberg's theory supplanted Adam's equity theory as a central role in promoting organizational well-being.

Few things kill an individual's motivation faster than the perception that someone else is getting a better deal. Organizational justice theory states that in addition to being fair, the people who make decisions must be perceived as fair. Thus, the theory is arguably as much, if not more, about leadership than it is employee motivation. Distributive justice concerns what was

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12 Goal attainment, however, on tasks where there is no corresponding increase in the employee's growth or competence does not increase satisfaction (Latham & Yild, 1978).

13Frayne's doctoral dissertation, summarized in that paper, was the first and only dissertation to this date to win the award for best dissertation of the year from both the Academy of Management and the Society for Industrial and Organizational Psychology.
distributed to whom and who got what. Procedural justice is concerned with such questions as, Are there procedures, processes, or systems in place for determining what was distributed to whom? The theory was adapted from the sociological literature on conflict resolution. The theory, and the empirical data that support it, further stated that the more employees perceive that the procedures are fair, the more they evaluate positively their boss and trust management. They are also less inclined to leave their jobs (Lind & Tyler, 1988).

Two key factors that affect perceptions of procedural justice are a priori criteria for making decisions and "voice." Voice advances the concept of pdm in that people must believe that their viewpoint was taken into account before the final decision was made. To the extent that their voice is heard, people are likely to support decisions that are not congruent with their earlier viewpoint.

The effectiveness of following these principles was demonstrated by Cole and Latham (1997). Canadian supervisors were trained to follow procedural justice principles in taking disciplinary action. Human resource managers and labor lawyers, "blind" to both the hypotheses and the experimental conditions, observed these supervisors in role plays with actual unionized employees. Those who followed the principles were judged to be more fair than those in the control group. Skarlicki and Latham (1996) found that the organizational citizenship behavior of union members in Canada increased significantly when their union leaders adhered to principles of procedural justice.

**Job Characteristics Revisited**

Interest in the effect of the job itself on performance and satisfaction is ongoing. Hackman and Oldham's (1976) theory provided a mediational framework, particularly with regard to the effects of job autonomy and skill variety on an employee's job performance and satisfaction (Fried & Farris, 1987). Campion and Thayer (1985), in a survey of 121 jobs in five plants, found that jobs that score high in enrichment had employees who were more satisfied, had higher rated job performance, and had less absenteeism. The level of the job was a moderator variable. A study in Germany showed that autonomous and complex/enriched work increased one's personal initiative (Frese, Kring, Soose, & Zempel, 1996).

A meta-analysis by Judge, Thoresen, Bono, and Patton (2001) revealed a correlation of .30 between job satisfaction and performance. The moderator was job complexity; the correlation was stronger in enriched than in simplified jobs. Parker (2003) found that unenriched simplified jobs increased an employee's level of job depression. Such work designs, she argued, are not likely to be conducive to an employee's self-efficacy. Her findings from a UK-based company are consistent with those of Theorell and Karasek (1996), which showed that lack of job autonomy can increase the risk of cardiovascular disease. It would appear that Herzberg was correct in his hypothesis that the job can affect a person's mental health; it can affect one's long-term physical health as well.

**Comprehensive Theories**

Theories of motivation in the 20th century were, with few exceptions, middle range rather than grand. They focused on the person (e.g., expectancy theory), behavior (e.g., behavior modification), or the environment (e.g., job enrichment).

An initial step toward developing a complete theory was made by Locke and Henne (1986). They stated that the fundamental motivational concept is that of need, physiological as well as psychological. A need leads to action after the person has identified it and discovers how to satisfy it. People have different values with regard to what is satisfying for them. Values are what
the person takes action to acquire or keep. Whereas needs are inborn, values are acquired through cognition and experience. Many theories of motivation focus on the influence of one or more values such as fairness (organizational justice theory). Value theories are a step closer to action than need theories, argued Locke and Henne, but they are still incomplete because the acquisition and maintenance of values can occur in multiple ways. To predict what a particular person will do in a particular setting requires knowledge of how values are translated into specific goals. "Goals are a means of actualizing values. They are the mechanism by which values are translated into action" (Locke & Henne, 1986, p. 3). Thus, goals are the immediate precursor of action. Emotions are the experiences derived from value/goal appraisals. Positive emotion is a function of the extent to which the goal is attained.

At the end of the 20th century, Locke and Latham (1990) developed a theory of the high-performance cycle (HPC) that explains how to increase a person's performance as well as job satisfaction. It is an inductive theory based on the accumulated findings of empirical research on goal setting, performance, satisfaction, and organizational commitment. The theory states that

specific difficult goals plus high self-efficacy for attaining them are the impetus for high performance. Goals and self-efficacy affect the direction of action, the effort exerted as well as persistence to attain the goal. In addition, the goals and self-efficacy motivate the discovery of strategies for effectively doing so. The effect of goals on performance is moderated by ability, the complexity of the tasks, situational constraints, the feedback provided in relation to the goal, and commitment to the goal.

High performance on tasks that are perceived as meaningful and growth facilitating, plus high external and internal rewards, lead to high job satisfaction. The consequence is a willingness to stay with the organization and accept future challenges, hence the high performance cycle.

The theoretical significance of the HPC is that it provides a comprehensive sequence of causal relationships that is consistent with research findings. The practical significance of the HPC is that it provides a model or blueprint for creating a high performing workforce that is also highly satisfied. (Latham, Locke, & Passina, 2002, p. 203)

SEISMIC EVENTS: SUMMARY AND OVERVIEW

The seismic events that influenced research on and theories of employee motivation in the 20th century are at least 10-fold. The first two occurred as a result of research in experimental psychology as well as the methodology of engineers rather than the discoveries of I-O psychologists. Thorndike's law of effect is, in the words of Vroom (1964), among the most substantiated findings of experimental psychology and is at the same time among the most useful findings for applied psychology concerned with control of human behavior. Time and motion studies by engineers resulted in the routinization and simplification of tasks. Monetary incentives were tied to task completion, and performance increased significantly. The implicit theory in the first quarter of that century was that money is the primary, if not sole, motive of the worker.

I-O psychology's contribution to knowledge of motivation in the workplace occurred in the second quarter. "Restriction of output" by workers had become widespread despite the fact that bonuses were paid contingent on performance. Attitudes toward management were hostile as people during the Great Depression feared losing their jobs. The third seismic event was Rensis Likert's publication of findings from his doctoral dissertation. His methodology demonstrates the ease with which employee attitudes can be surveyed. Drawing on countless employee surveys, Vroom was able to argue forcefully that money is only one of many motives that influence choice, effort, and persistence to perform well. His argument was supported by a
fourth seismic event, the Hawthorne studies. These studies were interpreted as supporting the conclusion that low morale and negative attitudes toward one's job were the result of routinizing work through time and motion studies. In addition, they suggested the interrelations among motivation, satisfaction, and performance as well as the myriad ways that they can be increased.

The end of the second quarter and the beginning of the third witnessed the formal development and use of theory to guide research on employee motivation. The fifth seismic event that influenced understanding of motivation was Maslow's need hierarchy theory. Not only was it the bedrock for McGregor's theory Y, but it was the basis for the first series of empirical studies on employee motivation based on theory, namely the early research by Porter; in addition, it spawned subsequent theory, Alderfer's ERG. Finally, need hierarchy theory focused the attention of researchers such as Herzberg on the job itself as an enabler or frustrator of the attainment of a person's higher order growth needs.

The sixth seismic event was the conclusion that rather than being simplified, jobs should be enriched. Herzberg argued that to form job attitudes that motivate employees, motivators must be built into jobs that facilitate the attainment of growth needs. This is a seismic event because it shifted the attention of I-O psychologists to the importance of job design. It is a practical theory in that it stimulated practitioners to view the world of work, and to take courses of action, in ways they might not have done otherwise.

The development of theory in the latter half of the 20th century was an ongoing progressive process. In the third quarter, the emphasis shifted away from needs that people may or may not be aware of that influence their choice, effort, and persistence. Emphasis instead was on cognitive/perceptual theories. The seventh seismic event was Vroom’s expectancy theory that viewed the employee as an information processor. Vroom showed that it is not only the presence or absence of characteristics of the job that is important to motivation in the workplace; it is the employee's perception of those characteristics that causes him or her to form beliefs and attitudes about choices to be made. Choice is determined by the person taking into account anticipated valences, expectations, and instrumentalities. These cognitive variables, argued Vroom, instigate and direct an employee's behavior. People attempt to maximize their overall best interest on the basis of their evaluation of this information.

Ryan, Locke's mentor, argued that needs, beliefs, and values determine behavior through an intervening variable, conscious intentions, and that people strive to act intentionally. Ryan's work was the precursor to the eighth seismic event in advancing knowledge of employee motivation, namely goal-setting theory. Whereas intention is a representation of a planned action, a goal is the object or aim of such an act, the target of one's intentional act. It is the standard by which one evaluates one's performance.

Similar to expectancy theory, goal setting is a cognitive theory. Unlike expectancy theory, it is more easily operationalized, measured, and tested, thereby making it easier to demonstrate its validity (Pinder, 1998). Mitchell and Daniels (2003) stated that at the close of the 20th century, Locke and Latham's (1990) goal-setting theory was "quite easily the single most dominant theory in the field, with over a thousand articles and reviews published on the topic in a little over 30 years" (p. 231).

Although vehemently disagreeing on the philosophy of science, the behaviorists and the cognitivist have relative points of agreement. Both camps agree that a reward should be valued outcome and that these outcomes should be tied to desired behavior, as well as the effect of context on behavior. Job characteristics are important in that they influence perceptions regarding expectancy and instrumentality; they are antecedent stimuli for behavior as well as factors that affect the consequences of the behavior. The points of view between the two camps are also arguably complementary. Goals influence intentions. Expectancies influence choice.
Consequences or outcomes influence the probability that the behavior will reoccur. These similarities led to the ninth seismic event, Bandura’s social cognitive theory. The theory postulates reciprocal determinism among the person’s cognitions, behavior, and the environment. “External events may create the reason for doing something, but except in simple reflexive acts, they are not the originators of affect and action. External stimuli give rise to course of action through personal agency” (Bandura, 1986, p. 12).

This theory too emphasizes the importance of goal setting. Whereas Vroom had argued the importance of expectancy theory, namely one’s subjective probability that effort will lead to performance, Bandura, working without knowledge of Vroom’s theory, formulated the concept of self-efficacy, a similar yet broader concept that has generative properties. Self-efficacy can stimulate the behavior in question. To the extent that proximal subgoals promote and authenticate self-efficacy, they increase motivation through enhancement of perceived personal causation. In agreement with expectancy theory, this theory states that the person’s perceptions and thought processes mediate the impact of the job environment (Wood & Bandura, 1989). In agreement with Porter and Lawler’s contention that high performance leads to high job satisfaction, the theory states that people develop enduring interest in activities at which they feel self-efficacious. When people master valued levels of performance, they experience a sense of satisfaction.

Ford (1992) argued that three sets of variables are necessary for a complete theory of motivation, namely, goals, emotions, and agency. The tenth seismic event of the 20th century that advanced understanding of motivation focused on the second of these three variables, namely feelings of trust and fairness. Greenberg’s theory of organizational justice focuses on a person’s perceptions and attitudes, specifically evaluations of those perceptions. As an outgrowth of Adam’s equity theory, the theory states that perceptions of inequitable treatment generate motivational forces that instigate behavior to reduce these feelings. The distribution of outcomes as well as the procedures for determining what is distributed to whom determines perceptions of fairness and feelings of trust.

So, in closing, at least one question remains: What is work motivation? A comprehensive definition that reflects the history of research and theory on this subject is Pinder’s (1998, p. 71): Motivation in the workplace is a hypothetical construct defined as “a set of energetic forces that originate both within as well as beyond an individual’s being, to initiate work-related behavior, and to determine its form, direction, intensity, and duration.” This definition takes into account psychological processes in the direction, energization, and regulation of behavior. The definition acknowledges motive states that are not in awareness as well as those that are conscious. It acknowledges that features of the environment such as job characteristics trigger motivational forces. The concept of force, Pinder stated, is central to this definition. Energetic forces suggest the multiplicity of both needs and external factors. The definition suggests that motivation will manifest itself through effort. The notion of improvement also emphasizes the importance of internal as well as external origins. Thus, Pinder’s definition takes into account the importance of the environment in arousing as well as shaping behavior without downplaying the importance of the employee’s needs, values, attitudes, or the belief that effort will lead to a desired outcome. Importantly, the direction of the motivated forces is also inherent in this definition. To predict and understand work motivation, one must know the specific goal toward which motivated energy is directed. Motivated arousal occurs to the extent that the goal is difficult. Duration or persistence occurs to the extent that the goal is perceived to be attainable (self-efficacy).

At the dawn of this new millennium, it would appear that cognitive theories of motivation will likely be integrated with affective processes as well as personality. This is evident in the review by Brief and Weiss (2002) on moods and emotions. A review by Eccles and Wigfield
(2002) underscored the advice by Sojts and B. Latham (2003) to continue to integrate social and I-O psychology theories because the former already provide frameworks for examining affective processes more fully. I-O theories of motivation will likely also benefit from integration with those in clinical psychology including those that deal with the unconscious (Latham & Haslin, 2003; Locke & Latham, 2004). A meta-analysis by Judge and Ilies (2002) showed that there is a relation between personality variables, namely conscientiousness (high) and neuroticism (low) with an employee’s motivation (e.g., setting high goals). With the closing of the 20th century, I-O psychologists have done what William James (1892) suggested at the end of the previous millennium. They have taken conscious motivation seriously.

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