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## 1925–1950

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### *Dust Bowl Empiricism*

#### Introduction

Three events affected I-O psychology research in the second quarter of the 20th century. First, the world's economy crashed. Second, I-O psychology was embraced by departments of psychology (Koppes, 2003). The third was World War II. The first event, the worldwide collapse of the economy, decreased dramatically the need for the selection of workers. The Great Depression increased the concern of psychologists for the plight of human beings and the concomitant humanization of the workplace. With unemployment high, with access to food and shelter in danger for many people, the needs and goals of people became of paramount concern to psychologists such as Abraham Maslow.

In 1932, at the age of 34, Morris Viteles published *Industrial Psychology*.<sup>1</sup> Unlike Burt (1926), Viteles included a chapter on “Motives in Industry.” He argued that despite the use of financial incentive programs advocated by

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<sup>1</sup>From an obituary by Albert S. Thompson (on the web page of the Society for Industrial and Organizational Psychology, <http://www.siop.org/>): After several years of annual summaries of the literature on industrial psychology for the *Psychological Bulletin*, in 1932 at the age of 34, Viteles published *Industrial Psychology*. This monumental book not only established him as a leader in the field but also helped define the growing field. So influential was the book that some people later regarded him as the founder of the field, but Viteles himself credited Hugo Munsterberg with that role. Nevertheless, *Industrial Psychology* continued to be considered the

Taylor (1911), “analyses of restriction of output reveals not only an unhealthy economic condition but a serious situation in workers’ attitudes toward management” (p. 564).<sup>2</sup> He stressed the need for “a detailed analysis of *motives-in-work* to determine the factors that underlie attitudes and activities which

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“bible of industrial psychology” for many years. When Viteles planned to update it after World War II, he began by revising the original 15 pages on “Motivation in Industry” and ended up with a new 500-page volume in 1953 titled “Motivation and Morale in Industry.” That book became another “bible” in its subject. His own practitioner role was a model for other psychologists. Not only did he engage in careful research and application in the “real world,” but he also published his findings in both practitioner and scientific journals. The success of his consulting roles is evidenced by the scope and duration of his consulting relationships. For example:

- 1924–1961: Yellow Cab Company
- 1927–1964: Philadelphia Electric Company, where he served as a part-time director of selection and training
- 1930s and 1940s: technical board of the U.S. Employment Service, where he helped develop the USES Job Classification System
- 1942–1951: National Research Council Committee on Aviation Psychology where, among other activities, he monitored a series of studies on pilot training and helped develop the standard flights for pilot evaluation, as well as serving as the chairman of the committee supporting a wide range of research relevant to the war effort
- 1942–1951: National Defense Research Committee, involving studies of training and safety in naval settings
- 1951–1984: Bell Telephone Co. of Philadelphia, where he sponsored a management development program based on the need for “humanistic education” of managers. During the 1950s, nearly 140 members of the managerial staffs of Bell System companies spent a full year at Penn devoted entirely to the humanities, including history, science, philosophy, and the arts. As was typical of him, Viteles evaluated the program through use of control groups and follow-ups, which demonstrated that the experience resulted in long-term change in attitudes and managerial effectiveness. Viteles had an important impact not only on American psychology but also in international circles. In the 1950s, he was a leader in the founding of Division 1, Work and Organizational Psychology of the International Association of Applied Psychology (IAAP), serving as the first American president from 1958–1968. Michael Frese, an I-O psychologist in Germany, is the immediate past president of IAAP. The current president elect is Jose Maria Peiro, an I-O psychologist in Spain. I am President-Elect of Division 1.

<sup>2</sup>Years later, Bandura (1989) would argue that a focus solely on monetary incentives neglects the affective self-evaluative rewards of performance attainments. Forethought of outcomes (e.g., loss of one’s job) influences effort and performance.

promote or interfere with economic efficiency and individual satisfaction at work” (p. 565). Viteles eschewed the then-popular instinct hypothesis (e.g., curiosity, acquisition, anger) that was tied to Freud’s concepts of repression, rationalization, and sublimation. “The chief objection to the instinct explanation of motives is that in the final analysis instincts are nothing more than logical abstractions . . . the assumption that the instincts represent well-organized neurological or mental patterns of behavior is entirely gratuitous” (p. 567). Viteles recommended a focus on “worker feelings and experiences” (p. 581). The prime element, he said, “is the wish to enjoy the feeling of worth—recognition and respect on the part of others” (p. 582).

The importance of “feelings,” however, would not receive a great deal of research attention until the end of the 20th century. Instead, I-O psychologists shifted their emphasis to finding ways of measuring attitudes of employees in order to identify sources of motivation in the workplace. The implicit theory of these studies is that the predominant personal characteristic that affects subsequent performance is a person’s attitude.<sup>3</sup>

## Attitude Surveys

Thurstone (1929) defined *attitude* as affect or overall degree of favorability regarding an object. 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, subsequently known as the Likert scale, permitted the measurement of attitudes that is much simpler than Thurstone’s method of scale construction.<sup>4</sup> Moreover, Likert’s method eliminated the need for

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<sup>3</sup>Both Eagly (1992) and Ajzen (2001) concluded that there is now a strong basis for the argument that attitudes are indeed important causes and strong predictors of manifest behavior. Markman and Brendl (2000) argued that people evaluate objects in relation to currently active goals. However, they do not state or imply that job satisfaction leads to or predicts job performance. Attitude surveys are nevertheless used today by many organizations, including the Center for Creative Leadership, for gauging employee satisfaction with the job, the leadership team, and the organization as a whole.

<sup>4</sup>Likert’s name is among the most mispronounced in our field. It is phonetically *Lick-ert*.

unfavorable items, items to which management frequently objected to including in a survey. It also eliminated the need for judges in scaling the statements. Most importantly, Likert showed that his method correlated highly with more complex methods of survey construction such as Thurstone's.<sup>5</sup> Likert's method requires nothing more than the respondent indicating on a five-point scale the extent of agreement with or approval of a survey item.<sup>6</sup>

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. Houser (1938) found that nonselling employees, including unskilled labor, of a large merchandizing 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 as opposed to motivation, Hoppock (1935) reported that it is affected by many factors other than money.<sup>7</sup> These factors, he found, include the relative status of the person within the social and economic group with which he identifies himself, relations 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).

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<sup>5</sup>Likert (1932, p. 34) found that his method yielded "the same reliability with fewer items, or higher reliability with the same number of items" as Thurstone's scaling method. Seventy-five years after Likert's study, Drasgow, Chernyshenko, and Stark (2010) argued that his approach does not do justice to the underlying processes by which people make introspective judgments. "Certainly, as a rough and ready approach, a Likert scale works well. But for research and applications requiring a high fidelity representation of choice processes, the Likert approach has shortcomings" relative to Thurstone's (Drasgow et al., p. 474).

<sup>6</sup>Paul Thayer, now a retired department head of psychology at North Carolina State University, was formerly vice president of research from 1967 to 1973 and senior vice president from 1973 to 1977 of the Life Insurance Management Association. He stated (2003, personal communication) that "most people don't know what a Thurstone scale is, much less all the work that must go into building one. I've built one and it is a beast."

<sup>7</sup>Employee motivation should not be equated with job satisfaction. Satisfaction with one's job is often associated with high levels of work commitment and willingness to expend effort to attain organization-related goals, but satisfaction is not a prerequisite for motivation (Franco, Bennett, & Kanfer, 2002).

Comprehensive statistical studies by Kolstad (1938) showed that successful employees have higher morale than those who are struggling with their jobs. Specifically, he found that in a department store, employees with low sales had morale scores that were significantly lower than the scores of employees whose sales were high. Those results suggested that employees should not be placed or kept in jobs where they are unable to perform effectively. The data also lend support to the iconoclastic conclusion that Lawler and Porter (1967) would promulgate years later—that job performance affects job satisfaction, not the reverse.

## Laboratory Experiments

Few laboratory experiments on motivation were conducted in this time period. An exception is a series of experiments conducted by Mace (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.<sup>8</sup> Otherwise, urging people to do their best led to the highest performance. Mace's 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. They, too, found that when knowledge is lacking, performance is higher when people are urged to "do their best" than it is when a specific challenging performance goal is set. Setting a standard (goal) for the performance of the worker, Mace concluded, will be most effective if it is adjusted to his level of skill and ability. This latter finding is the bedrock of the field studies on goal setting by my colleagues and me 40 years later (e.g., Latham & Kinne, 1974).

## Field Experiments

By the late 1920s, the widespread use of time-and-motion studies by engineers led to the systemization of highly repetitive work. Each employee was, in effect, "standardized." As Dunnette and Kirchner (1965) noted years later, 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.

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<sup>8</sup>Mace's empirical work was a basis for Locke's doctoral dissertation on goal setting. Ability would later become a moderator variable in goal setting theory.

Research in Great Britain on job fatigue by Wyatt, Fraser, and Stock (1929) was a precursor to job enlargement. They found that changing jobs at specific intervals reduced 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 pay resulted in fewer symptoms of boredom than hourly pay. This finding predates Lawler’s (1965) 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.<sup>9</sup> Elton Mayo, a psychologist at Harvard, concluded, based on observation, that these difficulties were due to the monotony of the work.<sup>10</sup> His solution was to allow the workers to take rest periods according to their own agreed-upon schedules, a forerunner to the importance psychologists would give to participation in the decision-making process. The result was a significant 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, man’s other needs.

## Hawthorne Studies

Mayo and his colleagues were subsequently asked to become involved with a series of studies of employee productivity (Homans, 1941; Mayo, 1933; Roethlisberger & Dickson, 1939) for the Committee on Work in Industry of the National Research Council. Field experiments were conducted between

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<sup>9</sup>Locke (1982a) is highly appreciative of Taylor’s work. Taylor believed, in Locke’s words (2004, personal communication) in the rule of knowledge when designing work tasks and processes based on systematic studies. Taylor’s work, Locke believes, has been misunderstood because so many people misused his ideas. My own reading of Taylor’s original work supports Locke’s view. Taylor’s desire was for a highly motivated workforce. In many instances, his ideas are forerunners of both goal-setting and monetary incentive plans.

<sup>10</sup>Mayo was born in Adelaide, Australia. He received his B.A. (1910) and M.A. (1919) in psychology from Adelaide University. After teaching at the Universities of Queensland in Brisbane (1919–1923) and Pennsylvania in Philadelphia (1923–1926), he joined the Harvard Graduate School of Business (1926–1947).

1927 and 1933 in the Hawthorne (Chicago) plant of the Western Electric Company, a manufacturer of equipment for the telephone industry. They led to the “realization that the productivity, satisfaction, and motivation of workers were all interrelated” (Roethlisberger, 1977, p. 46). This research subsequently became the foundation of the human relations movement.

The original purpose of the Hawthorne studies was to determine the relation between intensity of illumination and efficiency of workers, measured in output. In Homans’ (1941/1977) words:

The experiment failed to show any simple relation between experimental changes in the intensity of illumination and observed changes in the rate of output. The investigators concluded that this result was obtained, not because such a relation did not exist, but because it was in fact impossible to isolate it from the other variables entering into any determination of productive efficiency. This kind of difficulty, of course, has been encountered in experimental work in many fields. Furthermore, the investigators were in agreement as to the character of some of these other variables. They were convinced that one of the major factors which prevented their securing a satisfactory result was psychological. The employees being tested were reacting to changes in light intensity in the way in which they assumed that they were expected to react. That is, when light intensity was increased they were expected to produce more; when it was decreased they were expected to produce less. A further experiment was devised to demonstrate this point. The light bulbs were changed, as they had been changed before, and the workers were allowed to assume that as a result there would be more light. They commented favorably on the increase in illumination. As a matter of fact, the bulbs had been replaced with others of just the same power. Other experiments of the sort were made, and in each case the results could be explained as a “psychological” reaction rather than as a “physiological” one. (p. 51)

This “psychological” reaction to the increase in attention the employees received led to the coining of the term *the Hawthorne effect* (Adair, 1984; Roethlisberger, 1977).<sup>11</sup>

<sup>11</sup>My initial experience with the Hawthorne effect occurred at a Weyerhaeuser plant. Because of low job attendance, the company, with the union’s support, decided to institute a Lucky Bonus Day whereby people who were on the job on a given day, determined by a variable-interval reinforcement schedule, would receive a sizable amount of money. My first invited colloquium was at the University of Maryland in 1974. There, Benjamin Schneider criticized me for failing to collect premeasures before I had randomly assigned pulpwood crews to conditions. So this time I did so. The result of the premeasure was an immediate increase in employee attendance. The increase remained so high for so long that the Lucky Bonus Day program was never implemented. Interviews with the employees revealed that the attention given to the premeasurement of attendance made them realize how much time they were missing work. As Mason Haire was fond of saying, that which gets measured gets done.

A subsequent study in 1927 involved the selection of six “girls” who were placed in a separate relay assembly test room. Homans (1941/1977) stated:

The girls had no supervisors in the ordinary sense, such as they would have had in a regular shop department, but, a “test room observer.” . . . whose duty it was to . . . secure a cooperative spirit on the part of the girls. The purpose of this study was to determine the effect of changes in working conditions such as rest periods, mid-morning breaks, and shorter working hours. Two weeks of pretest measures of each worker’s output were taken prior to the study, without the person’s knowledge. . . . The output of the group continued to rise until it established itself on a high plateau . . . , [yet] there was no simple correlation with the experimental changes in the working conditions. Interviews revealed that “the girls liked to work in the test room; ‘it was fun.’” Secondly, the new supervisory relation or, as they put it, the absence of the old supervisory control, made it possible for them to work freely without anxiety. . . . Another factor in what occurred can only be spoken of as the social development of the group itself. Often one of the girls would have some good reason for feeling tired. Then the others would “carry” her. That is, they would agree to work especially fast to make up for the low output expected from her. . . . Finally, the group developed leadership and a common purpose. . . . The common purpose was an increase in the output rate. [This output rate was] related to what can only be spoken of as the development of an organized social group in a peculiar and effective relation with its supervisors. (p. 53)

Dunnette and Kirchner (1965, p. 133) commented that “The impact of Mayo’s research was heightened by the zealous manner in which he publicized it.” His zeal garnered him unflattering comments within the academic community. In his autobiography, Roethlisberger (1977), Mayo’s colleague, recalled:

Mayo’s participation in the Hawthorne researches was unusual from the point of view of orthodox scientific methodology—so unusual that it aroused the curiosity of many social scientists. Some of them felt that some kind of skull-duggery was going on. Let me try to correct this understanding. . . . Mayo had nothing to do with the design of or conduct of the original illumination experiments or of the Relay Assembly Test Room. . . . Mayo himself never collected any of the data. . . . Mayo came into the—I cannot specify the exact date—some time around Period XII in the Relay Assembly Test Room, when the persons in charge of these experiments were having trouble interpreting the findings. (pp. 48–49)

The division of labor between Mayo and me was roughly this. He interacted with the top executives of the company more than I did. I interacted with the lower levels of supervision more than he did. (p. 49)

Mayo was an adventurer in ideas. . . . Again and again Mayo performed the function of interpretation. The data were not his; the results were not his; the original hypotheses were not his; but as the researches continued, the interpretations of what the results meant and the new questions and hypotheses that emerged from them were his. Also the way of thinking which he brought to the research and which finally gave them a sense of direction and purpose was his. . . . By his behavior, Mayo escalated the positive Hawthorne effect. To his concern, interest and curiosity, the Hawthorne researchers responded with increasing vigor, just as the employees had responded with increased output to the concern, interest and curiosity of the researchers. . . . Let's bow our heads in silence for a moment, because without Mayo's contributions the results would still be in the archives of the company in the green files collecting dust. Nobody would have known what they meant. (pp. 50–51)<sup>12</sup>

The Hawthorne studies were attacked vigorously by Argyle (1953) for their lack of methodological rigor. In a statistical re-analysis of the data, Franke and Kaul (1978) showed that two key reasons for relay performance improvement were the replacement of two low-producing workers and the introduction of an incentive system. By modern standards, these and other methodological confounds render the original conclusions of the Hawthorne studies highly suspect. Where the advocates of scientific management simplistically assumed that man'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 are considered seminal. As Ryan and Smith (1954) noted, the Hawthorne studies showed that when people are given the opportunity to express their preferences and opinions, are free of overly strict supervision, and are given standards, that is, goals that take into account their ability, they work effectively. Years later, Blum and Naylor (1968) concluded that just as Munsterberg's work is considered the birth of industrial psychology, the Hawthorne studies can be considered its "coming of age."

## 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

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<sup>12</sup>In 1959, Harvard University awarded Roethlisberger its Ledlie Prize as the member of the faculty "who had by research discovered or otherwise made the most valuable contribution to science or in any way for the benefit of mankind."

participation in the decision-making process was becoming an implicit if not an explicit panacea 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.

Following World War II, the economy boomed. Severe employee strikes designed to compensate for wage freezes during the war were now crippling industry so much so that employers were forced to listen to employee demands on sundry issues so as to restore productivity in the workplace.

Fifteen years of economic depression and a second world war led N. R. F. Maier (1946) to conclude that the most undeveloped aspect of industrial progress is management of labor power.<sup>13</sup> He cited an unpublished field experiment by Alex Bavelas, a former student of Kurt Lewin's,<sup>14</sup> as an example of how to motivate workers. By securing employee participation in decision making, 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).<sup>15</sup> Similar findings were obtained 40 years later regarding the importance of "voice," a concept central to organizational justice theory

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<sup>13</sup>As noted earlier, it is Maier (1955) who proposed that job performance = motivation × ability. Wright and colleagues (1995) subsequently showed that need for achievement is positively related to performance among those high in ability and yet negatively related to performance among those low in ability. In short, there are few things more dysfunctional in an organization than a highly motivated incompetent running through the hallway. Hence the ongoing importance of training for improving an individual's performance (Wexley & Latham, 2002).

<sup>14</sup>Lewin (1945), a renowned social psychologist, was famous for his research on level of aspiration and the variables that affect it. Among his many legacies is his dictum, "Nothing is as practical as a good theory" (p. 129).

<sup>15</sup>In his book *The Practical Theorist*, Marrow (1969), also a doctoral student of Lewin's, pointed out that Lewin became interested in the applications of participation in the decision-making process after experiencing and subsequently escaping from Nazi Germany. This led to the Lewin, Lippitt, and White (1939) studies on autocratic, democratic, and laissez-faire studies of leadership styles, which in turn led to the studies by Coch and French as well as Bavelas. After receiving his Ph.D., Marrow became head of the Harwood Manufacturing Company, where Bavelas conducted his experiment.

(Greenberg, 1987). Empirical research conducted by the University of Michigan's Survey Research Center (1948, p. 10) in an insurance company was also interpreted as corroborating the importance of employee participation in the decision-making process:

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.<sup>16</sup>

This research was a harbinger for the emphasis that Deci and R. M. Ryan (1985) would place on self-determination.

By the end of the second quarter of the 20th century and at the beginning of the third quarter, I-O psychologists were critiquing scientific management. For example, T. A. Ryan (1947) concluded that time-and-motion study was inadequate because it relies upon 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.

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.

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<sup>16</sup>A meta-analysis by Wagner (1994) showed that the effect of participation in the decision-making process on an employee's performance has statistical significance but lacks practical significance. Nevertheless, Erez (1997) found that participation in the decision-making process is now used across cultures as a motivational technique. This issue is discussed later in Part I.

Tiffin (1952) took umbrage with reference to workers as “hired hands” because it, too, reflects a mistaken viewpoint by management. A man’s hands alone are never hired. The four factors that affect a worker’s morale, he said, were similar to those identified in the Hawthorne studies. It is not so much the job itself, as it is (1) how the person feels about it and (2) how the boss regards the employee that determines morale. In addition, Tiffin advised the necessity of taking into account (3) social factors and (4) 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 that needs to be addressed by industrial psychologists.

Harrell (1949), after reviewing the ongoing research of the behaviorists in experimental psychology (e.g., Hull, 1943; Spence, 1948), 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 these drives. 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—his level of aspiration—what a man expects of himself” (p. 269). In general, employees in either the professions or in management, concluded Harrell, are highly motivated; this is not true, he said, of the factory worker. Such was the thinking of eminent people in our field in that era.<sup>17</sup>

## Concluding Comments

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

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<sup>17</sup> Although Harrell’s comments may sound naïve if not elitist by today’s standards, 30 years later, Hofstede (1979), working with survey data on IBM employees, did in fact find striking differences in the saliency of work values among occupational groups. Whereas professionals stressed the importance of the content of their jobs, skilled workers and technicians placed greater value on job security and money, and the unskilled, he found, stressed only benefits and physical work conditions.

the topic of motivation and satisfaction. A major methodological breakthrough was the development and use of surveys to measure attitudes in the workplace. The implicit theory underlying these studies is that job attitudes affect job performance. Viteles's review of the literature showed convincingly that people are motivated by a multitude of variables in addition to money. The Hawthorne studies were said to have marked the "coming of age" of I-O psychology. Despite their methodological weaknesses, they were the stimulus for literally hundreds of subsequent studies on the relationship between employee attitudes and performance.<sup>18</sup>

It was in this time period that psychologists began to systematically explore the effect of participation in decision making on an employee's performance. As Harold Leavitt (1962) noted, prior to this time period, "Classical industrial psychology had been ideologically, at least, an ally of Taylorism and scientific management. Certainly our work on the measurement of abilities, on job analysis, on noise and monotony, were quite consonant with Taylor's physiological view of man" (p. 25). In contrast, the human relations movement was not only for participation, it was also "unswervingly against scientific management" (p. 25).

I-O psychology research, up to this point in time, was largely atheoretical. This was about to change as a result of an essay written by Abraham Maslow (1943), a clinical psychologist. In that essay, he specified needs and the cues that arouse them that energize and direct behavior. However, this essay went largely unnoticed until Maslow published his book in 1954 and McGregor argued cogently for the immediate applicability of Maslow's theory to industry. Hence, Maslow's (1943, 1954) theory is discussed in Chapter 3, "1950–1975: The Emergence of Theory."

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<sup>18</sup>Viteles (1932) is among the first to question this relationship. He cited a study by Kornhauser and Sharp (1932), conducted at the Kimberly-Clark Company on the feelings and attitudes of 200–300 girls employed on routine, repetitive machine and conveyor operations. One of the most significant findings is the discovery, in contrast to the findings of the Hawthorne investigation, that efficiency ratings of employees showed no relationship to their attitudes (p. 577).

Recall that Thorndike (1917), years earlier, had also found no relationship. The controversy regarding the causal effect of job satisfaction on job performance was about to emerge.

Viteles was so influential in industrial psychology in this time period that years later "when Marv and I put together the *I-O International Handbook* (Triandis, Dunnette, & Hough, 1994) I suggested we dedicate it to him. We went to his retirement home and told him. He was very pleased" (Triandis, 2011, personal communication).