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Keys to motivating tomorrow's workforce[☆]

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Abstract

Work motivation is a set of energetic forces that originate within as well as beyond an individual's being. It is a psychological process resulting from the reciprocal interaction between the individual and the environment that affects a person's choices, effort, and persistence. The purpose of this chapter is to peer inside the door to what might or should be the motivational sources of tomorrow's workforce. To discover the key for opening this door, the history of research and theory on work motivation in the 20th century is reviewed in order to identify principles that are likely to be timeless. Second, the current status of research and theory at the dawn of the present millennium is examined. Third, and on that basis, predictions are made regarding the design of organizations in the 21st century; predictions are made on ways to motivate the employees who will work in them.
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1. History of motivation research and theory

The history of workplace motivation has been described in detail by Latham (2006) and Latham and Budworth (2006). Motivational research conducted during the first 50 years of the 20th century was, for the most part, atheoretical. In the first two decades, the study of motivation was left largely to engineers. They believed that money was the primary, if not sole, source of an employee's motivation (Taylor, 1911). If the engineers had been correct, the well known actors in Hollywood and professional athletes would have been among the happiest people on earth; yet, this was and is not the case despite the fact these people were and continue to be paid exorbitant salaries relative to most people in the workforce.

In the third decade, attitude surveys conducted by industrial–organizational psychologists (I/O) such as Viteles (1932) revealed that it took a lot more than money to make people happy (e.g., job security, recognition, status). The resulting premise of I/O psychologists was that job satisfaction predicts job performance. Hence they, as did the engineers before them, reached an over-simplified conclusion, namely, that the happy worker is a productive worker.

Attitude surveys conducted in that time period made comparisons among, or generalizations to other firms difficult as they were for the most part tailored to the organization where they were administered. Dust-bowl empiricism, the adage that "if it works, use it" reigned as the primary heuristic guiding research on what motivates employees. And this

research was showing that people can be happy for non-job performance reasons (e.g., happy with one's co-workers, fringe benefits, physical work conditions) which have little or no bearing on their subsequent productivity (Brayfield & Crockett, 1955).

Theories for predicting, explaining, and influencing a person's motivation in work settings blossomed in the 1960s. Credibility was given to Maslow's (1943) need hierarchy theory by McGregor (1960). This theory states that people have five needs; their goal is to satisfy their lower order needs, physiological and security, before they focus on satisfying their higher order needs for affiliation, esteem, and self-actualization. The theory was based on Maslow's observations of people who came to see him in his role as a clinical psychologist. McGregor provided no data to support his endorsement of Maslow's theory for the workplace. This was left to Porter. Using Maslow's theory as a framework for developing survey items, Porter's (1961, 1962, 1963a,b,c) studies showed that people in low level jobs were concerned with satisfying lower order needs such as job security; people did not become concerned with their higher order needs until they had progressed to higher level jobs where their lower level needs had been well satisfied. The implications of this theory for organizational decision makers are straightforward. First, provide pay and benefits which ensure that an employee's physiological (e.g., food) and security (e.g., medical insurance) needs are met. Second, hire people who are compatible with one another. If these lower needs are satisfied, the theory states that the likelihood increases that a person will focus on self-esteem through achievement as well as self-actualization, that is, finding ways to maximize one's knowledge and skills.

In addition to need hierarchy, McGregor (1960) also endorsed the relevance of a second theory of motivation. This theory, developed by Herzberg (Herzberg, Mausner, & Snyderman, 1959) identified situational factors that facilitate or inhibit the "growth" of an employee.

As a graduate student at the University of Pittsburgh, Herzberg was torn between becoming a clinical or an I/O psychologist. In choosing to become an I/O psychologist, Herzberg decided to focus on the mental-health of the worker. His interviews with employees led him to conclude that one cannot motivate others per se, but one can enrich a work environment so that it becomes conducive to self-motivation. Using his mentor's methodology for conducting a job analysis, Herzberg adapted Flanagan's (1954) critical incident technique for collecting data on what satisfies and what dissatisfies employees. He concluded that the sources of an enriched job that lead to job satisfaction (feedback, recognition, task variety, autonomy) form one continuum while the sources of job dissatisfaction (supervisors, co-workers, pay, fringe benefits, physical work conditions) form another. Thus the opposite of job satisfaction is not job dissatisfaction, but rather no job satisfaction. Hence, two interchangeable names were used as labels for Herzberg's theory, namely, job enrichment and the two-factor theory (i.e., job satisfaction vs. job dissatisfaction).

Hackman and Oldham elaborated on Herzberg's theory regarding important characteristics of jobs, so as to take into account differences among individuals regarding their needs (Hackman & Oldham, 1976). Two key differences between their job characteristics theory and that of Herzberg's job enrichment theory is that they did not posit two distinctly different factors as sources of satisfaction versus dissatisfaction, and, more importantly, they did not advocate enriching jobs for everyone. Instead, their theory states that job enrichment only motivates employees who have higher order growth needs for autonomy, responsibility, task variety, feedback, and recognition.

Similar to McGregor's advocacy of Maslow's need hierarchy theory, Nord (1969) wrote a compelling essay endorsing another person's body of work, namely, Skinner's. Skinner was an experimental psychologist who studied the behavior of rats and pigeons in laboratory settings. Nord argued that there are many similarities between Maslow's theory, McGregor's translation of Maslow's theory, and Skinner's research on operant conditioning. The latter was known as behavior modification in clinical psychology and subsequently as contingency theory in I/O psychology. But unlike Maslow, Skinner's research was based on the philosophy of behaviorism. Two principles of behaviorism are that the mind is an epiphenomenon in that it has no causal effect on behavior; and determinism, namely, that the environment alone shapes a person's behavior. Strictly speaking this is a learning theory.[1] A person's response, "operating" on the environment, increases in frequency "contingent" upon the presence of reinforcers, and decreases "contingent" upon the presence of punishers or the withdrawal of a reinforcer immediately after the response occurs. The schedule with which a reinforcer is made contingent upon a response can be fixed (e.g., 100%, or after every 4th response) or variable. A variable schedule has the appearance of being random to the person (e.g., the payout of a slot

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[1] Skinner purposefully chose not to use the word theory in his description of his work: "I have never attacked a problem by constructing a hypothesis" (Skinner, 1964, p. 1385). "I object to theories of learning which attempt to explain observed facts by appealing to events taking place somewhere else, at some other level of observation, described in different terms, and measured, if at all, in different dimensions" (p. 1385).

machine in Las Vegas) but in reality it is programmed on a variable interval (e.g., on average once every 43 min) or variable ratio (e.g., on average one of every forty-one responses is reinforced). Thus, despite the fact both Herzberg and Skinner emphasized the importance of the environment on a person's behavior, they did so from very different perspectives. By controlling environmental contingencies, behaviorists such as Skinner showed how a person's behavior can be easily modified by someone else.

Herzberg's job enrichment theory said that money can be a source of a person's dissatisfaction, but that it has no effect on a person's motivation. Skinner was agnostic. What constitutes a reinforcer is an empirical issue; if money that is made contingent upon a response increases the probability that the response is repeated (i.e., "reinforced/strengthened"), it is by definition a reinforcer. Yukl, Wexley, and Seymore (1972) were among the first to show that this is indeed the case. In a laboratory setting, people paid on a variable ratio schedule performed at a higher rate than those paid on a continuous schedule. In a field experiment involving unionized employees, Latham and Dossett (1978) found, consistent with Skinner's work with rats and pigeons, that inexperienced unionized employees had higher performance when a bonus was paid on a continuous rather than on a variable ratio schedule. The opposite was true with those who were experienced.

In summary to this point in time, psychologists now knew the importance of (1) taking into account a person's needs (Maslow's need hierarchy theory, Hackman and Oldham's job characteristics theory), (2) creating a job environment that is likely to facilitate self-motivation (Herzberg's job enrichment theory, Hackman and Oldham's job characteristics theory), and (3) ways to directly modify, that is, to directly increase or decrease another person's behavior by administering environmental reinforcers and punishers contingent upon a person's response (Skinner's contingency theory).

The 1960s was the decade that heralded in the cognitive revolution in psychology; people were now viewed by psychologists as immersed in thought. No one deserves more credit for fostering this revolution within I/O psychology and organizational behavior (OB) than Vroom. Vroom's (1964) expectancy theory is expressed in a mathematical equation that serves as a heuristic for predicting a person's choice, effort and persistence, the three pillars of motivation. In conceptual terms, this heuristic shows that people choose to engage in a given behavior based on their subjective probability estimate that (1) their effort will lead to effective performance, (2) multiplied by their subjective probability estimate that their performance will lead to various outcomes, (3) all of which is multiplied by their valence, that is, the degree to which these outcomes are valued. Thus expectancy theory casts a person's motivation to apply one's knowledge and skills (ability) as a thoughtful rational decision making process. A person's motivation can be influenced by others to the extent that they can provide outcomes that are valued by the person, and create situations whereby the person's two probability estimates (i.e., subjective expective utility) are high. Drawing upon expectancy theory, money, Lawler (1970) argued, can indeed motivate employees if (a) they value the amount that is offered, (b) if they believe that their performance will lead to the attainment of a desired amount, and (c) if they believe their effort will result in them performing effectively.

Based on his mentor Ryan's research on intentions, a second cognitive approach to the study of motivation in work settings was put forth in this same time period by Locke. Reluctant to call his work a theory until the mediators and moderators were identified, Locke (1968) advanced three propositions that he induced from a series of laboratory experiments that he had conducted. These propositions, more simple and straightforward than expectancy theory are: (a) specific high goals lead to higher performance than no goal setting or even a vague high goal such as an exhortation to "do your best"; (b) given goal commitment, the higher the goal, the higher one's performance; and (c) variables such as monetary incentives, participation in decision making, competition, and feedback only increase a person's performance to the extent that they lead to the setting of and commitment to a specific high goal. As a result of Latham's field experiments on goal setting (Latham & Kinne, 1974; Ronan, Latham, & Kinne, 1973), he and Locke became collaborators in the mid-1970s (e.g., Latham & Locke, 1975). Initially labeled an effective motivational technique for increasing performance (Locke & Latham, 1984), goal setting subsequently became a formal theory (Locke & Latham, 1990) based on induction, that is, on the vast accumulation of findings from both laboratory and field experiments specifying the mechanisms by which goals affect performance, and identifying moderators or boundary conditions (e.g., Latham, Locke, & Fassina, 2002; Locke & Latham, 2002, 2005).

Psychology is concerned with three broad constructs: cognition, affect, and behavior. Skinner, a behaviorist, focused solely on the third construct whereas Locke and Latham, who are cognivitists, focused on the first two in terms of their effects on the third. Affect was defined as a cognitive appraisal of one's performance (actions/behavior) in relation to one's goals (Locke & Latham, 2002). A goal is at the same time a target to attain (e.g., a level of proficiency to achieve usually within a specified time period) and at the same time a standard by which to evaluate the effectiveness of one's performance. When people attain their goals, they not only feel satisfied, they generalize their positive affect to the task

(Locke & Latham, 1990). Goals and feedback in relation to goal setting are the cornerstones for self-management (Latham & Locke, 1991).

Adams focused explicitly on the influence of affect on one's behavior. His observations at the General Electric Company, and his subsequent empirical research led to his formulation of equity theory (Adams, 1963). In brief, this theory states that feelings of equity/inequity stem from a cognitive appraisal of one's outcomes (e.g., pay, promotion) relative to one's input (e.g., education, skills) relative to one's comparison others (e.g., co-workers).

An example of equity theory was provided by a former professor (input=knowledge, skill), initially ecstatic at being hired away from a university to become the Vice President of Human Resources (outcome) of a large US auto-company. He regaled the authors with laughter as he explained why he came close to quitting his job within the first week of his employment. He wanted to do so despite the fact that he loved the new job (outcome), the salary (outcome), the people with whom he was working (outcome), and the fact that he would be given a new car annually that would be washed and waxed daily (outcomes). The sole source of his feelings of inequity was discovering on his first day that his peers (comparison other) were chauffeur driven to work. The situation was subsequently corrected to his satisfaction, so he stayed.

In integrating expectancy, goal setting, and equity theories, organizational decision makers have a compelling body of knowledge on ways to create a highly motivated workforce. In addition to the three motivational principles articulated earlier, (4) set specific high goals that are judged by employees to be attainable (Locke and Latham's goal setting theory), (5) ensure that the attainment is tied to outcomes that are valued (Vroom's expectancy theory) and appraised as equitable (Adam's equity theory) by the employee, and (6) become aware of who is seen by employees as their comparison other. Failure to do the latter cannot only lead to decisions by employees to quit their job, it can spur social movements. African-Americans, judging themselves to be inequitably treated relative to whites, began the US Civil Rights Movement in the 1960s. The feminist movement in Canada and the United States occurred a decade later when women appraised their pay relative to men in the workplace as inequitable.

A fundamental value of science is to criticize what is known for the purpose of advancing knowledge. The 1970–1980s witnessed criticism that was tantamount to a "civil war" within the field of motivation as theorists and researchers engaged in an on-going attack of one another's work. For example, Wahba and Bridwell (1976) critiqued Maslow's theory after finding no evidence of five universal needs let alone a hierarchy. Their critique was so thorough that no further research was conducted on this theory for several decades. Both Vroom (1967) and Locke (1975) showed that Herzberg's notion of a two-factor theory of satisfaction versus dissatisfaction is a methodological artifact of his use of the critical incident technique. Roberts and Glick (1981) attacked Hackman and Oldham's job characteristics theory for its lack of discriminant validity with other attitudinal measures, as well as halo error among perceived characteristics of jobs. Heneman and Schwab (1972) critiqued both expectancy and goal setting theories, the latter for its lack of external validity in that time period. Hinrichs (1970) too questioned whether Locke's laboratory findings would generalize to organizational settings. Pritchard (1969) attacked equity theory for lack of precision regarding how people identify their inputs, outputs and comparison others, while Lawler (1970) argued that expectancy theory provides a more useful framework for explaining phenomena studied by equity researchers. Schmidt (1973) stated that the mathematical formulas of expectancy theory assume a ratio scale when there is no known way for assessing valences on this scale. Locke (1975) argued that Vroom was incorrect to assert that people are usually rational decision makers and that he was also wrong to believe that they make complex calculations when they are making choices. Leventhal (1980) opined: "What shall we do with equity theory?" And despite the usefulness of Skinner's methodology for predicting and influencing behavior, the vast majority of organizational behavior researchers rejected the philosophy on which it is based, behaviorism.

Three bright spots emerged in this era. First, numerous field experiments showed the generalizability of goal setting findings from the laboratory to work settings (e.g., Latham & Lee, 1986; Latham, Mitchell, & Dossett, 1978). Second, Bandura (1977, 1997a) presented social learning theory, later re-named by him as social cognitive theory (Bandura, 1986). The third was Greenberg's (1986) answer to the question asked by his mentor, Leventhal, as to what should be done with equity theory, namely, principles of organizational justice.

A former behaviorist, Bandura developed a theory that integrated and supplanted research in the workplace based on contingency and expectancy theories. In place of Skinner's unilateral determinism, Bandura posited triadic reciprocal determinism with regard to the person (cognition), the environment, and the person's behavior. Consistent with Skinner, Bandura (1977, 1986, 1997b) acknowledged that the environment can affect a person's behavior. But, unlike Skinner, Bandura also posited that the environment is affected by one's behavior as well as one's thinking (e.g., expectancies) regarding the environment, as well as one's task specific confidence (i.e., efficacy) that one can operate

effectively in a given environment. Specifically, Bandura posited three cognitive variables, namely, goal setting, outcome expectancies and self/collective efficacy. Consistent with Locke and Latham's (1990) goal setting theory, goals are desired outcomes or end states, and hence serve as the standards by which people evaluate their performance. Outcome expectancies, as the name implies, are the outcomes that people expect as a result of engaging in one or more behaviors regarding goal attainment. Self-efficacy which is specific to a given task, is a person's confidence, whereas collective efficacy is a group's confidence in causing or bringing about goal attainment through the exercise of one or more behaviors. The importance of these three cognitive variables to motivation can be seen in the following statements: (a) My goal is to attain X. (b) The outcomes I expect from pursuing this goal are Y. (c) My self-confidence in engaging in the behaviors for attaining this goal is Z. Arguably the latter variable, self-efficacy, is Bandura's (1997b) most important contribution to predicting, understanding and influencing motivation as his concepts of goal setting and outcome expectancies are similar to goal setting and expectancy theories, respectively.

Ways of increasing a person's self or a group's efficacy include enactive mastery, modeling, and persuasion by a significant other. Enactive mastery involves presenting or sequencing tasks in such a way that they all but guarantee the probability of early successes. Early "wins" breed confidence that "I (we) can do this". Modeling involves finding one or more people, with whom the person or team can identify, who have either mastered the desired task or are in the process of doing so. Seeing people similar to us performing effectively that which we aspire to do well instills confidence: "If they can, so can I". The third way to increase efficacy is based on the empirical finding that people tend to behave in accordance with the expectations of those who are significant to them (e.g., Eden, 1990). "If she believes in me (us), I (we) must be capable of attaining my goal". Given that a person has high self-efficacy, changing the person's outcome expectances will change the person's subsequent behavior regarding goal attainment (Latham, 2001).

A third bright spot in the field of motivation during this time-period was Greenberg's (1987) conceptualization of organizational justice, which supplanted research on equity theory. In a sentence, this theory states that to motivate people, leaders, in addition to being fair, must be seen as fair. To be seen as fair, leaders must be cognizant of an employee's concern with three broad issues: (1) What was distributed to whom? Who got the promotion? Salary increase? Corner office? New hire? Who got demoted? Laid off?

(2) Are there procedures, processes, systems for determining what gets distributed to whom? If the answer is no, feelings of injustice are likely to skyrocket. If the answer is yes, subsidiary questions asked by employees are raised. (a) Are the procedures, systems, or processes representative of the thinking of the group as a whole? (b) Are the procedures applied consistently, or are exceptions to these systems or processes the norm? (c) Are the processes ethical? If they were published on the front page of the local newspaper, would they be judged as fair in the "court of public opinion"? (d) Is there an appeal system? No system is foolproof. If an adverse decision is wrongly made in the eyes of one or more employees, can the decision be revisited without the person or persons who made the request fearing further sanctions?

A key variable inherent in procedural justice is the concept of voice. Voice goes beyond mere participation in the decision making process. It requires answers to two interrelated questions: Was I heard? Did anyone take my viewpoint into account before the decision was made? If the answer is yes, an employee is likely to support the decision even if it is counter to the person's initial viewpoint. This is because the individual has had her "day in court". Being a member of a team, whether in a marriage or in a business, requires going along with decisions one does not necessarily advocate. However, if a decision is aligned with the viewpoint of an individual whose voice is consistently ignored, the result may be apathy on the part of this person leading to voluntary turnover. This occurs when a person realizes that what he thinks has little or no bearing on what the group ultimately decides or does.

In addition to distributive and procedural justice, a third issue of concern to employees is interactive justice regarding the interactions between them and the organization's leaders. This aspect of justice affects trust. Two drivers of trust are a leader's logic and a leader's sincerity. Hence the third broad set of questions asked by employees include: Do I understand the rationale for the decisions that were made? Is the organization's leadership sincere in what they are doing, or are they being manipulative?

Thus at the close of the 20th century, organizational decision makers had a wealth of knowledge for ensuring a motivated workforce. In addition to the six preceding motivational principles, there were now four more.

(7) Understand the outcomes people expect and you will understand their behavior; change the outcomes people expect, and you will change their behavior (Bandura's social cognitive theory).

(8) Increase a person's or group's efficacy, namely the conviction of "can do" versus "can't", through enactive mastery, modeling, persuasion by a significant other, or one or more combinations of these three methods (Bandura's social cognitive theory).

(9) Take the steps necessary for ensuring feelings/perceptions of procedural justice among the workforce (Greenberg's organizational justice theory).

(10) Similarly, take the steps necessary for ensuring feelings/perceptions of interactive justice (Greenberg's organizational justice theory).

The relevance of these 10 principles, derived from empirical research and theory would appear to be timeless. Thus we predict they will be as relevant for ensuring the motivation of tomorrow's workforce as they were yesterday.

2. Current motivation research and theory

A 5-stage motivational framework adapted from Locke and Henne (1986) by Latham and Pinder (2005) can be used as a key for opening the door in the present millennium for discovering motivational principles that are likely to continue to be relevant in the future. This taxonomy ranges from the most distal source of motivation, namely, a person's needs, and individual differences in the ways people seek to satisfy those needs, to a person's values, cognition, and affect.

2.1. Needs

Needs are physiological as well as psychological that affect a person's survival as well as sense of well-being. Yet, who in the past quarter of a century would have guessed that today there would be a resurgence of interest in Maslow's need hierarchy theory? The resurgence is due largely to the research of Ronen and Kluger. Working independently of one another in Israel, Ronen (2001) collected data in 15 countries. He found that Maslow's taxonomy of needs is essentially correct. Van-Dijk and Kluger (2004) and Kluger and Tikochinsky (2001) found support for the hierarchy. Threats to lower needs such as safety overwhelm individual differences. Finding ways to satisfy lower needs take precedent over seeking ways to satisfy one's higher order needs such as self-actualization. Only this latter variable is affected by individual differences.

Van-Dijk and Kluger (2004) drew upon need hierarchy theory to answer the question as to whether people raise their goal upon attaining it. They concluded that once lower order needs are satisfied, an individual's goal for food or safety is not increased. But, when a higher order goal for self-esteem or actualization is attained, an even higher goal is set for the satisfaction of these two needs.

Working in Nigeria, Ajila (1997) found that the satisfaction of lower order needs on the part of employees take precedent over the satisfaction of their higher order needs. Consistent with Porter's research conducted in the 1960s, Kamalanabhan, Uma, and Vasanthi (1999) reported that bank clerks in India stated that the satisfaction of their need for job security was most important to them, while bank officers were more concerned with the satisfaction of their higher order than they were with their lower order needs.

Haslam, Powell, and Turner (2000) conducted a survey in Australia which showed that people who score high on personal identity needs focus on ways of satisfying their needs for self-esteem and self-actualization. For those who score high on needs for social identity, the satisfaction of the need for affiliation is most important to them. With regard to leadership, Haslam et al. concluded that adherence to McGregor's Theory Y (e.g., allowing participation in decision making) is appropriate when a leader and a direct report(s) have the same identity needs (i.e., personal versus social); Theory X (e.g., autocratic leadership) is appropriate when their identity needs are different.

Socio-analytic theory states (Hogan, 2003; Hogan & Holland, 2003; Hogan & Warremfeltz, 2003) that people have innate needs for (1) acceptance and approval, (2) status, power and control of resources, and (3) predictability and order. The assumption underlying both Maslow and Hogan's theories is that needs are universal. Individual differences among people, particularly their personality, affect the ways people go about satisfying them.

2.2. Personality traits

Allport (1951) defined traits as needs or predispositions for behavior. Yet the reaction in I/O psychology in the 20th century was essentially to ignore them. Guion and Gottier (1965) had found that traits had little or no effect on the prediction of an employee's behavior in the workplace. In a review of the organizational behavior literature, Mitchell (1979) found that despite their intuitive appeal, there was no empirical evidence that traits act as mediators or moderators of behavioral science interventions in work settings. With regard to the motivational literature on the effects of goals, Locke,

Shaw, Saari, and Latham (1981) reported that the only consistent finding regarding the moderating effect of a person's traits was "inconsistency". But by the dawn of the present millennium, Mitchell and Daniels (2003) found that positive findings regarding the effects of personality traits on behavior in the workplace are overwhelming the motivation literature. This occurred as a result of the emergence of theories and frameworks for the study of personality.

Studies published in I/O OB journals regarding the effect of personality in the 1960s–1980s were for the most part atheoretical and ad hoc. At the close of the 20th century, Wiggins (1996) proposed the Five Factor Model (FFM). Subsequent research in I/O psychology, using this model, found that extroverts are attracted to enriched jobs, neurotics are attracted to jobs that excel on hygiene variables (e.g., fringe benefits, the physical working conditions), and people who score high on conscientiousness are attracted to jobs that allow them a high degree of autonomy (Barrick, Stewart, & Piotrowski, 2002; Furnham, Forde, & Ferrari, 1999).

Kanfer and Heggestad (1997) and Heggestad and Kanfer (2000) proposed a self-regulatory/self monitoring theory of personality. The theory distinguishes between distal influences on the actions people take, namely personality traits, versus proximal influences, namely self-regulatory motivational skills that sustain effort and persistence through goal setting, as well as emotional control regarding anxiety and worry. Day, Schleicher, Unckless, and Hiller (2002) found that a self-monitoring personality often leads to leadership positions. This is because self-monitors are sensitive to the expectations of others, which in turn increases their likeability. Likeability is a key to one's job progression.

Judge and his colleagues (Erez & Judge, 2001; Judge & Bono, 2001; Judge, Locke, & Durham, 1997) developed a theory they labeled core evaluations with regard to an appraisal of people, events and things in relation to self. Their theory calls for an assessment of four traits, namely, a person's self-esteem, locus of control, neuroticism and generalized self-efficacy. These four traits, when used as an aggregate or composite, predict motivation (e.g., effort and persistence) and effort better than any one of these traits does alone.

Farr, Hofmann, and Ringenbach (1993) introduced Dweck's (1986) goal orientation theory to organizational behavior researchers. Dweck (1999) defined goal orientation as a stable individual difference variable. Not to be confused with Locke and Latham's goal setting theory which views goal setting as a state, Dweck found, in her studies with children, that those with a learning goal trait orientation seek tasks which will enable them to enhance their knowledge and skills. Errors are viewed by them as inherent in the learning process. Children with a performance goal trait orientation seek tasks that enable them to prove themselves competent to others; and avoid tasks where they are likely to be judged as incompetent. VandeWalle, Brown, Cron, and Slocum (1999) replicated Dweck's findings with employees.

Understanding the effects of personality traits is important due to the fact that people tend to choose tasks and work settings that are congruent with their traits (Tett & Burnett, 2003). However, these traits manifest themselves only in "weak" versus "strong" situations (Stewart & Barrick, 2004). Weak settings are characterized by jobs which allow a person a great deal of autonomy, whereas strong situations are highly structured (Mischel, 1973). Future research is needed to identify the effect of strong versus weak personalities, in addition to situations. Specifically, future studies are required to identify how strong versus weak personalities of people enable them to choose, create, and change the characteristics of their jobs, and the role of specific traits, if any, in doing so (Locke & Latham, 2004).

Bandura (2001) has remained skeptical of the value of research on traits. He believes that knowledge, goals, outcome expectancies, and self-efficacy to manage environmental demands are sufficient for predicting, understanding, and influencing an individual's motivation and subsequent performance.

2.3. Values

The global economy has been an on-going reality for the past two decades (Dalton, Ernst, Deal, & Leslie, 2002). Hence organizational decision makers have to take into account values in finding ways to motivate rather than demotivate employees.

Values are transituational goals. They serve as guiding principles in the life of an individual which are acquired through cognition and experience (Schwartz and Sagie, 2000). Few people have influenced the study of values more than a Dutch psychologist, Geert Hofstede (1980, 2001). In a study involving approximately 117,000 IBM employees from around the world, he showed how cultural values for individualism vs. collectivism, high versus low power distance, and certainty versus uncertainty affect a person's behavior.

Given the universal value for fairness and justice, scholars in the area of procedural justice took an early lead in conducting cross-cultural studies. Research by Thibaut and his colleagues (Houlden, LaTour, Walker, & Thibaut, 1978; Thibaut & Walker, 1975) have consistently shown that in an individualistic culture, people perceive as fair win-or-lose

adversarial type procedures made by third party decision makers (such as found in the American legal system). Conversely, a series of studies by Leung and his colleagues (Leung, 1987; Leung, Bond, Carment, Krishnan & Liebrand, 1990; Leung & Lind, 1986) found that in collectivistic societies, where there is an emphasis on group cohesion, people prefer non-adversarial procedures such as bargaining and mediation.

2.4. Job characteristics

Herzberg's hypothesis regarding the effect that one's job can have on one's health has been supported by Parker & Wall (1998). She found that unenriched jobs can lead to psychological depression as well as cardiovascular disease. These adverse effects are minimized, if not eliminated by introducing job autonomy, participation in decision making, and the opportunity to acquire new skills. Cordery (1997) reported that inherently routine structured jobs mitigate the beneficial effects of granting people autonomy. Attempts to introduce autonomy in such settings can foster cynicism among employees with regard to "control and job freedom over what?"

2.5. Cognition

Needs and values cannot be met without the knowledge necessary to understand what can be done to satisfy them. Three cognitive theories of motivation currently prevail in the 21st century, namely, goal setting; social cognitive; and action theory. Three advances stemming from goal setting theory include knowledge regarding the effect of learning versus performance goals, proximal versus distal goals, and goal setting as a "strong" condition.

Kanfer and Ackerman (1989) showed that contrary to the prediction of goal setting theory, there are circumstances when urging people to do their best can lead to higher performance than the setting of a specific high goal. Winters and Latham (1996) discovered why. Consistent with Kanfer and Ackerman's findings, they found that on a task where people have yet to master the requisite knowledge and skills, urging people to do their best is indeed superior to setting a high goal for a specific performance outcome (e.g., 88 for a golf score). But, setting a specific high learning goal (e.g., learn when and how to use your 5 wood, 7 iron, and pitching wedge) leads to even higher performance on tasks the person has yet to master than urging people to do their best.

On a dynamic task, that is one which is characterized by high uncertainty, Latham and Seijts (1999) too replicated Kanfer and Ackerman's finding regarding the benefit of urging people to do their best rather than setting a specific high performance outcome goal. However, when proximal outcome goals (i.e., subgoals) were set in addition to the distal goal, both self-efficacy and performance increased relative to those people who were urged to do their best.

On a relatively stable task, where people had yet to acquire the necessary knowledge to perform effectively, Seijts and Latham (2001) once again replicated Kanfer and Ackerman's findings on the deleterious effect of setting a high performance goal. But, a distal learning goal that included the setting of proximal goals resulted in higher goal commitment and higher self-efficacy than urging people to do their best, or having a performance outcome goal. Proximal learning goals did not affect performance directly, but they resulted in an increase in the number of task strategies, and task strategies mediated the positive effect of learning goals on a person's performance. It would appear that proximal goals on tasks that are complex for people are important to the extent that they increase error management, that is, the extent to which their picture of reality is congruent with progress toward goal attainment (Frese & Zapf, 1994).

As noted earlier, goal setting is such a powerful motivational technique that it creates a "strong situation". A strong situation minimizes the effect of personality differences among people on performance. For example, setting a specific high learning goal, a state, over-rides the effects of a performance goal orientation trait. That is, on tasks that are complex for people, setting a specific high learning goal to discover specific procedures or processes for mastering a task is beneficial regardless of a person's goal orientation (Seijts, Latham, Tasa, & Latham, 2004). A specific high learning goal also masks the effect of a person's trait regarding a promotion versus prevention focus (Kaplan, Erez, & Van-Dijk, 2004).

2.6. Social cognitive theory

A meta-analysis conducted by Stajkovic and Luthans (1998) removed any doubt as to the importance of self-efficacy to a person's motivation and performance. People with high self-efficacy commit to high goals. Obstacles and set-backs provide the challenge and excitement to spur them on, to increase their effort, to persist until the goal is attained, and to set an even higher goal upon its attainment (Bandura, 2001). People with low self-efficacy look for

tangible reasons, such as set-backs and obstacles, to abandon their pursuit of a difficult goal. A boundary condition or moderator for the normally positive effects of high self-efficacy are those tasks where performance on one trial yields no useful information for performing well on a subsequent trial (Vancouver, Thompson, & Williams, 2001). Thus high self-efficacy on the part of a gambler who consistently plays roulette will prove beneficial for the gambling casino only.

2.7. Action theory

This theory, developed by Frese in Germany, is closely aligned with goal setting and social cognitive theories. Action theory states that (a) an action starts with a goal, (b) proceeds to considerations by an employee of events that may occur in the future, then (c) to the development of plans or strategies to attain the goal, (d) the selection of one of those strategies, (e) the implementation and (f) self monitoring of the selected strategy, and (g) the processing of feedback resulting from the implementation of the strategy. The four core features of this theory include intentionality, forethought, self-reactions, and self-reflection. The theory states that the better one can visualize and imagine goal attainment, the greater the motivation function of the goal that is set. Visualization leads to goal acceptance and the development of one or more strategies to attain the goal. This in turn leads to taking personal initiative to changing one's environment rather than merely reacting to it.

Morin and Latham (2000) found that training in visualization on the part of supervisors increased their self-efficacy and their performance with regard to interactions with union officers in Canada. Frese (2005) has shown the effectiveness of his theory for successfully developing interventions designed to increase the performance and profitability of entrepreneurs in starting small business enterprises in Africa.

2.8. Affect/emotion

Mowday and Sutton (1993) criticized motivation theories for an over-reliance on cognition for predicting, explaining, and influencing motivation in the workplace. Subsequently, Weiss and Cropanzano (1996) presented affective events theory which explains the effects of mood and emotion on a person's performance. Forgas and George (2001) developed the affect infusion model which shows how one's affect colors one's cognitive appraisal of one's job. Whereas the 1960s ushered in the cognitive revolution, the new millennium appears to be ushering in an affective one (Barsade, Brief, & Spataro, 2003).

Between 1989 and 1992 only 15 articles were published on organizational justice. Between 1993 and 2000 there were more than 100. Organizational justice is currently among the most popular topics of papers submitted to the Academy of Management. This fact reflects the importance of feelings of fairness in the workplace. Cole and Latham (1997) showed that adherence to procedural justice principles by managers when taking disciplinary action increases feelings of fairness on the part of employees, union leaders, and labor lawyers. A meta-analysis by Colquitt et al. (2001) showed that employee perceptions of justice correlate highly with job performance. Cropanzano, Byrne, Bobocel, and Rupp (2001) tied the importance of justice principles back to the satisfaction of a person's needs, namely needs for control, belonging, self-esteem and a meaningful existence.

Skarlicki and Latham (2005) explained how adherence to justice principles by union leaders increases union citizenship behavior among union members.

So, in the early part of this 21st century what is now known about ways to motivate people in the workforce? In support of theories in the 20th century, there is now corroborating evidence that a person's needs should be taken into account. While the universality of the needs reviewed in this paper remain debatable, they appear to be applicable to employees in Africa, Europe, India and North America. There is a dearth of knowledge on employee motivation in countries in Asia, South America, and the Middle East.

Second, there is corroborating evidence regarding the importance of job characteristics on a person's motivation. The implicit assumption underlying Herzberg's theory has been shown. Characteristics of jobs can enhance or debilitate both the mental health and the physical well being of employees.

Third, individual differences with regard to personality traits need to be taken into account to ensure a person-job fit. This is particularly true with regard to differences among people with regard to their values. Theoretical frameworks now exist which make this possibility a reality. Achieving this reality is a must for work that is highly unstructured.

Fourth, individual differences in values among cultures must be taken into account by organizations that participate in a global economy. Employees in work settings in one country may embrace political and religious ideologies that are

very different from those of their colleagues who work in another country. Taking into account differences in values is also imperative in multi-cultural countries where employees of various ethnicities, who embrace highly divergent values, work side by side (Latham & McCauley, 2005).

Fifth, the complexity of the task for individuals needs to be considered when goals are set.[2] Tasks that are straightforward for people require less information search, are easier to focus on, and are less likely to induce information over-load than are tasks that are complex for them. In such instances, specific high performance goals should be set. When people lack the necessary knowledge or skill to perform a task effectively, specific high learning goals should be set because they lead to an increase in cognitive effort on scanning options that enable them to discover effective strategies. Specific difficult performance goals hinder this process because they focus a person's attention on the outcome which can lead to a reliance on established behavioral patterns.

Sixth, on dynamic tasks, proximal in addition to a distal goal should be set.

Seventh, there is overwhelming evidence of the value of focusing on ways of increasing a person's self, or a group's collective efficacy, namely the strong conviction that the behaviors required to attain high goals can in fact be performed. In addition to enactive mastery, modeling and persuasion from a significant other for increasing self-efficacy, action theory suggests that visualization and self-reflection are effective in this regard.

Eighth, unlike the 20th century where the study of affect was limited primarily to attitude surveys on job satisfaction, knowledge is rapidly accumulating on the ways moods and emotions influence an employee's behavior in the workplace.

Ninth, there is a rapidly growing body of evidence on the effect of feelings of injustice or unfairness on a person's apathy, job performance, and organizational citizenship behavior.

Finally, there is a taxonomy or framework for guiding organizational decision makers in their choice of interventions for bringing about and sustaining a motivated workforce. This framework includes needs, personality, values, cognition, affect, the environment, and behavior.

3. The workplace of the future

As Latham and McCauley (2005) noted, from the outset of the 20th century the workplace has been undergoing significant changes. Electricity enables organizations to employ people 24 h a day. Electricity is also a source for heating buildings so that employees can work in them no matter how cold the outside temperature. The development of air conditioning, in the middle of the 20th century, enabled organizations to expand their operations to climates where employees can work efficiently and effectively no matter how hot the outside temperature.

The telephone, put into use in the beginning of the 20th century, enabled two people to listen directly to one another regardless of the geographical distance between them. Teleconferencing enables groups of people to do likewise. By the end of the 20th century, they could both see and hear one another, regardless of the geographical distance, through the use of a video-conference. In Taiwan, where automobile traffic is so bad that it can take hours to travel only a few miles, video-conferencing is now used daily by many organizations.

At the outset of the 20th century, written communication was delivered by a country's postal service. It took several days to several weeks for it to be delivered. By the 1980s, written communication could be sent anywhere around the world within minutes by fax machine. By the 1990s written communication could be sent anywhere by electronic mail within seconds.

At the outset of the 20th century, people traveled slowly, in many instances on horseback or by a horse-drawn vehicle. Within the first two decades of that century, leaders and employees would quickly visit one another by automobile, or airplane with relative ease. By the close of the 20th century the results of these changes to the workplace had led to the development of virtual offices, teams, and organizations. An IBM employee, for example, who lives in Phoenix, Arizona currently works out of her home where she processes and interprets company attitude surveys. She reports directly to and communicates daily with her boss who resides in London, England who in turn reports directly to a boss who has a traditional office in Armonk, New York.

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[2] Note that task complexity, although logically correlated with a task that is complex for an individual are not synonymous. Conceptualizing and writing a grant proposal is a complex task that is relatively easy for the present authors; fixing a leaky faucet is a simple and straightforward task that continues to baffle us.

All of the above would have sounded ludicrous to employees at the dawn of the 19th century; yet they proved not to be far-fetched in the subsequent century. So, what might occur in the workplace during this century? The field of information technology suggests several intriguing answers (Pearson, 2000). The world's fastest computer, IBM's BlueGene, can perform 70.72 trillion calculations per second, and is accelerating all the time. This is a far cry from only 40 years ago when researchers performed a one-way analysis of variance on their data using a "clunky" Friedman calculator. Thus it is anything but absurd to predict that computer chips will be developed, within the next 40 years "with everything". A pollen sensor will be in cars and in the workplace to alert people when to take an antihistamine. Chips will come small enough to enable people to impregnate them into their skin. Video tattoos will be very thin sheets of polymer that a person can stick onto the skin. People will even build a cell phone and connect it to the company's network, use it as a video phone or to receive and respond to email.

In addition to today's virtual teams and organizations, there will be virtual worlds. People will be spending a lot of their time in virtual speech, using high quality, 3D, immersive, computer generated environments to both socialize and do business. Information technology will provide life size 3D images; links to a person's nervous system will allow one individual to shake hands in greeting another individual. It will look and feel as if one is indeed in the other person's office.

4. Motivating employees in the future

4.1. Leadership

Employee motivation is inextricably tied to an organization's leadership. When facing increasingly volatile, uncertain and complex future contexts, it will no longer be feasible to look to a single leader or small group of senior executives to ensure motivation in a global, diverse and increasingly well educated workplace. Leadership will no longer be viewed as the unique characteristics or traits of any one individual, but rather will find its source in the dynamic processes through which people relate to one other. From this perspective, leadership will consist of collective activities of organizational members to set direction, build commitment, and create alignment (McCauley & Van Velsor, 2004).

Evidence of this shift can already be seen in a recent study of 305 mid- to upper-level executives in 29 different countries (Martin & Ernst, 2005). Participants were asked to evaluate their organization's approach to leadership at
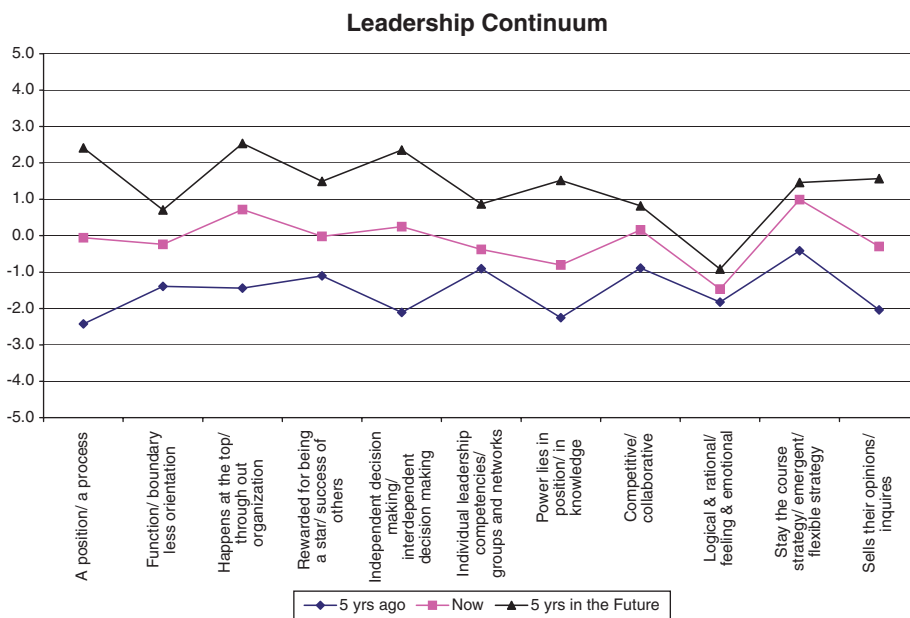

Fig. 1. Changing leadership — means plotted by time.

three points in time — five years in the past, present state, and five years into the future, along the 11 paired dimensions shown in Fig. 1. The paired dimensions, taken from the leadership literature, assess individual approaches to leadership (i.e., leadership as a position) as well as collective and relational processes (i.e., leadership as a process). Half the paired dimensions were reversed to minimize rater bias.

When plotting the means shown in Fig. 1, one can see a clear movement from a focus on the individual to more relational forms of leadership already taking place. With the single exception of the logical and rational versus feeling and emotional dimension, the differences between these mean scores are statistically significant. Interestingly, this pattern of results is even more pronounced in the European than in the North American sample.

The implication of these trends is that emphasis will be placed on motivating, recognizing, and rewarding collectives (i.e., groups, teams, task forces, communities of practice) in addition to the individuals within them. Reward systems will focus on enhancing group-level attributes such as unit-level performance, collective efficacy, collaboration, and working across organizational boundaries. Further, as leadership comes to be viewed as a property of an organizational system, it will increasingly call on all members of the organization to take responsibility for ensuring that the conditions necessary for high motivation exist. In short, motivation in the future will be a communal activity and a communal achievement.

4.2. Leadership across differences

While 'globalization' is the buzzword of our present era, 'glocalization' will become the word du jour in the future. Glocalization is the mutual interpenetration or push and pull of global and local forces (Prahalad and Doz, 1987). "Social and cultural realities that previously orbited safely in distant cultural galaxies collide daily in our businesses, educational and government institutions, and communities… As the physical and tangible boundaries of our world shrink, the psychological boundaries of people deeply divided by race, ethnicity, ideology, politics, region inequality, and marginality seem to be headed toward greater impermeability" (Karim, 2003, p. 34).

As birthrates decline in economically developed regions, as technology and trade increasingly link people together, as changing organizational forms break down old "bricks and mortar barriers," the workplace will increasingly be made up of social identity groups that have historically remained apart (e.g., previously disenfranchised tribes, castes, religious, and ethnic groups).

Recent cross-national research has demonstrated that long-standing tensions and conflicts in society spill over into organizations in the form of triggering events (Ernst & Latham, 2003). A trigger is an event that reveals fault lines in the organization's structure that separates group members, and makes social identity differences salient. Examples of triggering events include clashes of values, favoritism, as well as customs and symbols.

The implication of these trends for work motivation is that leaders will need to be able to identify superordinate goals that pull disparate groups together as socio-historical forces serve to pull them apart (Latham, 2003). Goals that are embraced by both in-group and out-group members foster a newly inclusive group identity. In a review of the literature, Dovidio, Gaertner, and Bachman (2001) concluded that creating a common category that is inclusive for different social groups influences motivation-type cognitions that include perceptions of shared beliefs, the facilitation of empathic arousal and the reduction of blame for negative outcomes. In the realm of procedural justice, Huo, Smith, Tyler, and Lind (1996) found that employees, who identify with their work organization, react to how their supervisors handle conflicts in terms of whether they were treated fairly, that is, the appropriateness of the process. Employees who do not identify with their organization evaluate supervisors only in terms of the outcome. Was it favorable or unfavorable to them?

4.3. Subconscious goals

At then end of the 19th century, William James (1890) urged psychologists to study the realm of consciousness. By the end of the 20th century I/O psychologists and OB researchers had heeded his request. Now, in the 21st century, there is emerging research in social psychology which suggests the value of enlarging this domain to the study of the subconscious. Gollwitzer (1999) has identified the importance of a person's implementation intentions. Implementation intentions are a mental link that is created between a specific future situation and the intended goal directed response. Once an appropriate environment or situation is encountered, goal directed behavior automatically occurs in the absence of a person's conscious intent.

Bargh and Ferguson (2000) found that conscious and unconscious goals are affected by the same moderators (e.g., ability, feedback, situational constraints). The only known difference between them is that subconscious goals operate without a person's awareness, or the necessity for conscious guidance.

Shah (2005) has used three effective ways for priming subconscious goals. The first is through the use of semantically related words. For example, people are requested to find achievement related words in a "word-salad", and are then given a non-related performance task to complete. They perform better than do those in the control group. Instrumental goal priming is a second priming method. A means–ends relationship facilitates goal attainment through unconscious pursuit. This can occur by subliminally flashing on a board or screen a goal such as to clean one's attic. When people who have been exposed to this stimulus are put in a situation where cleaning the attic is possible, they are more likely to do so than are people who are in the control group, that is, people who were not exposed to the subliminal presentation of the goal. Interpersonal goal priming can occur in a similar fashion. The result is people in the experimental group gravitating toward individuals who they believe are supportive of them attaining the goal, and avoiding those who they believe are non-supportive.

In 2005, the Society of Industrial-organizational Psychology held a symposium (Latham, 2005) on the effect of the subconscious on a person's motivation. Both Miner (2005), a past editor of the *Academy of Management Journal* and Howard (2005), a past president of the Society, showed the criterion related validities of projective tests for assessing an employee's unconscious motivation in work settings. In addition, Stajkovic, Locke, and Blair (in press) replicated findings in social psychology regarding the effect of subconscious goals through semantic priming on a person's behavior.

Based on all of the above findings, our predictions for the future are as follows:

Deans and Department chairs will someday deliberately arrive late to meetings so as to give faculty the opportunity to stare at a seemingly blank board or screen. Subliminally presented messages on the screen or classroom board will specify goals regarding the number of committees on which faculty should serve, the number of courses they should teach, and the number of research projects they should initiate. Managers in the private sector will do likewise regarding subliminal assigned goals for revenue to be generated and costs to be reduced. Union leaders will grieve these management practices when they become aware of them; yet, they will behave similarly regarding subliminally presented goals for organization (union) citizenship behavior among the rank-and-file. Fear of employee burnout from subconscious goals will disappear with the advent of legalized prescription drugs.

4.4. Psychotropic drugs

Employees, especially high achievers, will prospect for better brains in order to enhance their ability through prescriptions for psychotropic medications; they will do likewise in order to enhance their motivation. This prediction is based on the fact that prescription drugs already exist to manipulate a person's memory, concentration, capacity to learn, mood and general ability to cope with stress. Employees who wish to be the selected candidate for a lucrative job position may choose to take prozac to alleviate, if not eliminate "down days" or Paxil to combat their social awkwardness. An architect might use Ritalin to increase memory of spatial layouts. A person in marketing or sales might pop a beta-blocker such as propanol, a heart medication, to prevent stage fright from hurting a well-thought out presentation to a large audience. Amphetamines will be requested to improve motor skills, a boon for machinists, dentists, not to mention professional athletes. Employees, particularly those in competitive environments, will feel pressured into taking medication "just to keep up". Will it become appropriate for medical doctors to cater to a patient's on-going requests to increase his or her ability and motivation?

The field of neuroscience will either prove additive, or take the place of psychotropic drugs, should these drugs become prohibited or seriously restricted in the marketplace for the "well" person. Just as cosmetic surgery is currently being used in the dawn of the present century to maintain, if not improve the appearance of one's physically aging body, cosmetic neurology or "mindlifts" are likely to occur before the first quarter of this century comes to a close. This is particularly likely to take place as pharmaceutical companies discover that lifestyle drugs are their next "gold rush" (Chatterjee, 2004). Neurologists will become quality of life consultants, setting up what are essentially brain spas. Similar to financial consultants, they will offer a menu of options, with the likely outcomes and the incumbent risks stated in generalities.

Bioethics will become among the most popular courses in universities, and the source of the most heated debates in society as people demand drugs to minimize, if not eliminate what they perceive to be physiological roadblocks to their maximum wellness, subjective well being and productivity (i.e., self-actualization). Thus hiring of medical staff will

become the norm in organizations that wish to enhance the ability of their employees to compete effectively in a global marketplace. And doing so will beg the question: What is the purpose of medicine? Is it solely to treat people with illnesses — or is it to enhance the ability and motivation of already healthy people?

4.5. Neuromotivation

Preliminary findings in the field of marketing suggest that I/O OB researchers may soon be immersed in neuroscience courses in psychology departments as a way to increase their knowledge of a person's motivation in the workplace. Marketing researchers are currently pursuing what they call neuromarketing, that is, the use of brain scans to determine what makes the brain's pleasure centers light-up. The purpose of their research is to discover what creates a positive emotional response, and how to boost that feeling so that they can influence a person's emotional visceral responses to sundry stimuli. Future ethical issues around management gaining and using this knowledge to motivate employees are as enormous as are those regarding their use of this knowledge to influence the buying habits of consumers. So far, neuromarketing research is in the infancy stage. The limitations of the current scanning technology means the information yield from the present data is fuzzy. In the not so distant future, as advances in this scanning technology are made, neuromotivation research will likely permit managers to know when and how to "push the right buttons" to ensure a person chooses to exert maximum effort to persist until high goals are attained. Brain scans will likely reveal ways to design organizational environments that stimulate the left prefrontal cortex, the locus of an individual's joy, so as to overwhelm activity in the right prefrontal cortex, the locus of anxiety. The ability of psychologists to "play god", even if they do so at the request of both management and labor, is likely to lead full circle to a quest for spirituality.

4.6. Spirituality

Gall et al. (2005) have provided a conceptual framework of spirituality and coping that takes into account one's appraisal of personal well-being in terms of emotional, social, and physical factors. They defined spirituality as a multifaceted construct that includes (a) person variables (e.g., disposition), (b) primary and secondary appraisals (e.g., attributions), and (c) coping behavior that includes "meaning making" (i.e., finding personal significance in an event). For example, hope, defined as a disposition, affects one's cognitive appraisals of ability to initiate and maintain goal directed behavior. Similar to self-efficacy, which is a cognitive state, hope affects a person's physical and mental well-being. People who score high on measures of hope tend to find personal meaning or benefit in the context of difficult and traumatic events. At the initial stage of an appraisal process, people make sense of events in relation to their causal attributions (temporary vs. permanent; fate or luck vs. self). Longitudinal studies will likely be conducted on the effects of various spiritual factors that influence the coping processes an individual uses when dealing with stress experienced in the workplace.

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