Psychological Connections with Work

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A full understanding of wellbeing and work requires that we fully understand what is going on with the individual worker within the context of the workplace environment. What are the reasons why an individual works in a particular job environment, what are the factors that influence the person's job performance, and what are the conditions that either improve or worsen that person's wellbeing at work? Questions like these are fairly modern ones, which did not arise when "work" was more individualized and more craft-oriented. In the past, there may have been assumptions of individual willingness to work hard and to learn specific skills, but there were also assumptions that certain people were more likely to do certain jobs, either because they were "chosen" in some way (e.g., through birthright or family tradition), or had greater gifts or talents. Conversely, people who failed to do their work well had only themselves (and their lack of ability) to blame, and there was no protection for the customers of their products or services.

The Relationship Between the Worker and the Job

With the advent of the Industrial Revolution, some fundamental changes took place with regard to how we thought about people as "workers" and about their work environment as the "job." Particularly notable is what happened in the United States in the twentieth century, with the use of scientific ideas and methods to improve the world of work.

Fitting the person to the job

   Prior to 1900, workers were usually skilled craftsmen, and the work was individualized, specialized, slow, inefficient, and of variable quality (Heminger, 2014). At the turn of the century, the economy was sluggish and in need of overhaul. In an effort to eliminate wastes of human effort, and to reduce errors and accidents arising from poor execution of work, the then-current American President Theodore Roosevelt called for a remedy to the lack of "national efficiency" and supported strategies that promised to dramatically improve economic output and prosperity. Frederic W. Taylor, an engineer and management consultant, answered that call, with a book entitled *Principles of Scientific Management* (1911). Taylor described improvements in productivity, quality, efficiency, accuracy and task cycle times that could be obtained by applying scientific principles to each element of a person's work and then scientifically selecting, training, and developing workers to maximize productivity and efficiency. By "science," Taylor meant an empirical assessment of the physical movements and context of the job through *time studies* to determine how the work elements could be reconfigured, streamlined, and paced in a way that would eliminate slack and inefficiencies and would maximize physical stamina by minimizing exertion. The shift to the industrialization of work brought in new concepts of engineering and scientific evidence to reform production work and jobs in general.

   Taylor's colleague, Frank Gilbreth, introduced engineering concepts into the design of work by devising a procedure for analyzing jobs under laboratory

conditions to eliminate wasted motion (*motion studies*) and to provide equipment to permit maximum efficiency (Gilbreth, 1911). Together with his wife, Lillian Gilbreth, who was the first industrial psychologist, Gilbreth also introduced the notion of "worker-oriented" job analysis where operations, equipment and training could be re-arranged for workers with different characteristics (e.g., left-handed, amputee) to gain the most productivity. Lillian Gilbreth specialized in designing work for handicapped employees and served as a consultant to the Institute of Rehabilitation Medicine dedicated to helping veterans who lost limbs in World War I. Whereas Taylor focused on the development of the most efficient job and matching people with specific characteristics and training to maximize productivity, the Gilbreths focused on how work could be designed and adapted to a wider spectrum of individuals who, with the right equipment and training, could work (Primoff & Fine, 1988).

Hugo Munsterberg also contributed to Roosevelt's call for greater economic efficiency by introducing the concept of scientific selection of workers into jobs (Munsterberg, 1913). Munsterberg's validation studies enabled American employers to select job candidates who had the knowledge, skills and abilities to succeed in the jobs that had been redesigned to be highly productive and efficient. Extending these principles of scientific selection, Walter Van Dyke Bingham and Walter Dill Scott devised a general classification system for jobs and set qualifications required for performing work within each classification. Bingham and Scott played a pivotal role in the classification and placement of millions of men joining military service in World War I. Matching soldier traits and

abilities to job requirements through a systematic array of screening tools, such as the Army Alpha, significantly improved soldier performance and the effectiveness of the military force (Mitchell, 1988). In recent decades, increasingly sophisticated selection and performance measurement systems, tailored to specific interests of the employer (such as customer satisfaction, employee retention, and product innovation), have been developed to provide direct feedback to company decision-makers for making adjustments to the operation, resources and people, in order to maximize gains (Cascio, 2006).

In 1917, Scientific Management broadened into the general field of "industrial engineering" which is defined as the engineering of work processes and the application of engineering methods, practices and knowledge to production and service enterprises in order to increase and improve production and service activities (Badiru, 2014). Most retail, service and production entities today utilize industrial engineering principles and/or tools to help manage their customer-facing and general business activities. Industrial engineering is applied to the design of jobs (i.e., the most economic way to perform work); the establishment of performance standards and benchmarks for quality, quantity and cost; and the design and installation of facilities. For example, industrial-engineered work scheduling programs in many of today's restaurants determine how many workers are assigned per shift and how many hours any particular worker is assigned work, based on historical sales data. Such programs minimize labor costs and maximize productivity by controlling the number of labor hours "spent" per hour and by assigning employees who have the lowest cost.

Thus, modern-day job design and employee selection were born, and few deviations from this approach have emerged since. The significance of all of these events cannot be overstated, as they have contributed to the highly engineered work, no-slack labor budgets, bare-bones headcount, and on-demand workers, that characterize many of today's modern workplaces. These early and ever-present engineering approaches to job design and selection focused on human *capabilities* (knowledge, skills, and abilities) to the neglect of human *motivation* to do such work and of the physical and psychological consequences of highly engineered work. Thus, fitting the person to the job was an insufficient strategy. It is no surprise that workers across hierarchical levels and occupations have experienced higher levels of job stress and negative consequences as a function of how work, work environments, and working conditions have been structured and executed for decades.

Fitting the job to the person

The recurring theme in these early time-and-motion approaches to job design was to determine how to best fit the person to the job by maximizing the person's *ability* to perform these new models of efficient work processes. But gradually there began to be an acknowledgement that some unique human characteristics needed to be taken in to account, which led to some initial efforts to fit the job to the person.

This shift became evident by the mid-1950's when there was a growing recognition that workers needed safe and hazard-free environments in which to do their job. The focus was on identifying risk factors and occupational hazards,

and developing procedures to prevent the occurrence of accidents, injuries, disease and death. This often meant that the workplace had to adjust to the innate "limitations" or "shortcomings" or "flaws" of human beings. In general, the implicit guiding framework was how to make the workplace "less bad" for people (as opposed to making it better). The impact of these health and safety interventions was often judged by organizational outcomes, such as reductions in lost productivity and healthcare costs.

Much of this health and safety research was conducted by professionals in the fields of human factors engineering and ergonomics. Human factors and ergonomics (HFE) is defined as the scientific discipline concerned with the understanding of the interactions among humans and other elements of a system (the "human-machine" interface), and the application of theory principles, data and methods to work design, in order to optimize human wellbeing and overall system performance (Chapanis, 1995). HFE professionals study human capacities and limitations such as physical and cognitive abilities, knowledge, personality and physiology in relation to the physical and psychological environment in which people work. They design equipment or other elements of a work environment that is optimally compatible with the capacities and limitations of workers in a specific application. For example, HFE professionals studied airline cockpit displays and pilot performance using those displays. Based on a scientific analysis of pilot performance, the display is modified and/or the pilot is trained to eliminate performance problems caused by these limitations (e.g., Mosier, et al., 2007). The introduction of computers in modern work

processes has made the human-machine interface much more complex and multi-faceted, making optimization of the interface more challenging and the problems arising from human limitations and information overload more difficult to solve (Eppler & Mengis, 2004).

HFE implicitly acknowledges that an engineering approach to job design and selection of qualified candidates alone does not produce the best results for workers or employers. By taking a *systems* view of the worker in interaction with all the factors within the work process system, HFE provides a fuller picture of the multiple determinants of worker productivity and wellbeing. It evaluates components of the total system, which includes the environment (the organization, tasks performed, ambient features), the operator (capabilities, training, psychological responses), and the "machine" (equipment features, controls, tools, information) to achieve the greatest fit between humans and systems to generate outcomes such as safety, comfort, productivity, usability, or affective needs such as job satisfaction or life happiness (Karwowski, 2012).

Goodness of fit

In all of these prior efforts to improve the work environment and its effectiveness, the central framework has been one of the fit between the worker and the workplace. Which aspects of the person and the job are investigated and/or changed may vary widely, but the core underlying assumption that a "good fit" will yield positive outcomes continues to be an enduring one, not only in practice but in research. A consistent theme throughout the relevant research has been the problematic relationship between the individual and the situation,

which has also been described in terms of misfit, mismatch, imbalance or misalignment. For example, the demands of the job exceed the capacity of the individual to cope effectively, or the person's efforts are not reciprocated with equitable rewards. Some of the earliest models of organizational stress focused on the positive goal of "person-job fit," which was assumed to predict less strain and better adjustment (French & Kahn, 1962; French et. al., 1982).

In the 1990s, the emergence of the field of occupational health psychology had an important impact on notions of "fit" in the workplace. It made a distinction between the work environment, the individual, and the work-family interface. A lack of "goodness of fit" or incompatibility across these three dimensions was proposed as the mechanism through which workplace factors lead to employee distress and ill health. Occupational health psychology also reframed the approach to worker wellbeing around *healthy* work environments. These environments are characterized by high productivity, high employee satisfaction, good safety records, low frequencies of disability claims and union grievances, low absenteeism, low turnover, and absence of violence (Quick, 1999).

Other theorizing has continued to highlight the importance of both individual and contextual factors, and their interrelationship, but has developed more complex definitions of "fit." For example, fit has been defined by Kristof (1996) in terms of both *similarity* between the person and the job (e.g., both have the same values), and *complementarity* (e.g., one provides what the other needs or wants). "Fit" has also been extended to multiple aspects of the job, such as person-organization, person-group, and person-supervisor fit (Kristof-Brown,

Zimmerman, & Johnson, 2005).

Models of person-job fit have potentially important implications for interventions to improve wellbeing in the workplace. For example, the notion of "fit" is implicit in the job characteristics model, which advocates redesigning jobs to enhance intrinsic motivation (Hackman & Oldham, 1980). A newer example of person-job fit is the areas of worklife model that identifies six key areas in which fit or misfit can take place: workload, control, reward, community, fairness, and values (Leiter & Maslach, 2004). Imbalances in resources and demands are central to the conservation of resources theory (Hobfoll, 1989) and job demands-resources theory (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). In other theories, the concept of a fit between the person and the job is not explicitly mentioned, but is evident in such concepts as "autonomy support" -- which refers to how managers (the job environment) can behave towards workers (the person) to encourage and help them become more self-reliant (Deci, Connell, & Ryan, 1989).

Psychological Factors at Work

What aspects of individuals might be most relevant to the "goodness of fit" between themselves and their job? As noted earlier, the primary focus for many years was on the more physical characteristics of workers, and their human capabilities. But people's psychological characteristics, such as their motives and emotions, were often neglected or not deemed as important enough. However, a more comprehensive effort to understand the worker's *psychological*

experience at work got underway in the 1930s, and now there is an extensive research literature on this central component of human beings.

Motivations and needs

The pioneering psychological work on human motivation took place more than half a century ago, with the proposal that what motivates people to take action are several core needs. Some of these needs were postulated to be inborn, but others were thought to be learned. The earliest theories proposed the following needs: achievement, affiliation and power (Murray, 1938; Atkinson, 1964), self-actualization and social recognition (Maslow, 1943), and competence (White, 1959). A basic assumption was that there would be individual differences in need *strength*, which would predict variations in people's responses.

Although these original motivation theories were meant to explain human behavior in general, several subsequent theories were designed to focus on motivation in the workplace. Some of these theories dealt with factors that underlie extrinsic (hedonic) motivation, such as reinforcement theory (Ferster & Skinner, 1957), expectancy theory (Vroom, 1964) and goal-setting (Locke & Latham, 1990). Although extrinsic motivators have been shown to increase productivity and satisfaction, their effects are believed to be short-lived and conditional on the presence of additional rewards or incentives. Other theories focused more on intrinsic (eudemonic) motivators, which provide *meaning* to the worker though the act of performing the work (e.g., Maslow, 1943, Herzberg, 1966). Subsequent theories brought together both intrinsic and extrinsic motivation, proposing that both were critical for good job performance and

satisfaction, but varying in their hypotheses about how the two motivational processes affected each other (Porter & Lawler, 1968; Deci, 1971).

More recently, attention has shifted from need strength to need *satisfaction*, which is now assumed to be the primary driver of motivation and action. The basic assumption is that satisfaction of these core needs will promote psychological health and wellbeing. Currently, the most robust model of need satisfaction is self-determination theory (SDT), which proposes a self-determination continuum ranging from amotivation (a lack of self-determination) to intrinsic motivation (fully self-determined), with several types of extrinsic motivation in between these two endpoints (Deci & Ryan, 2000). A further distinction is made between *autonomous* motivation (which is intrinsic and freely chosen) and *controlled* motivation (which is extrinsic and driven by external constraints). SDT posits that intrinsic motivation is based on the satisfaction of three basic psychological needs: autonomy, belongingness, and competence. The satisfaction of these three needs is considered crucial to people's ability to thrive in all parts of their lives, including the places where they work. Much research has been done using the theoretical framework of SDT, so it has clearly become one of the major theories of work motivation (Gagné & Deci, 2005; Van den Broeck, Ferris, Chang, & Rosen, 2016).

The psychosocial aspects of stress

Another major contributor to the understanding of individual wellbeing in the workplace came with the modern recognition of the age-old phenomenon of stress. The seminal work of Hans Selye (1956, 1967) showed that environmental

factors (stressors) could cause stress-related illness via a three-stage process of alarm, resistance, and exhaustion. Subsequent research on stress and coping found increasing evidence of the importance of a person's internal experience of strain, which plays a mediating role between causal stressors and various outcomes (including both physical and mental health). The work of Richard Lazarus and his colleagues identified the critical psychological construct of the *cognitive appraisal* of stressors as either threats or challenges (Lazarus & Folkman, 1984). This personal appraisal, or psychological perception, of something in either negative or positive terms, had major effects on subsequent coping strategies and behaviors. The role of psychosocial factors in stress has continued to grow in importance, within both the medical and social sciences.

More recently, there has been a greater interest in *job stress*, and recognition that it can be a significant occupational hazard. Stress impairs job performance by reducing people's capacity for complex physical skills and by impairing cognitive functioning. Stress compromises the immune system, increasing the risk of viral and bacterial infections, and thus leading to higher rates of absenteeism and sick leave. The chronic tension associated with stress increases vulnerability to musculoskeletal problems. Empirical evidence has been found for the negative effects of job stress on physical health (especially cardiovascular problems), as well as on psychological well-being (e.g., job dissatisfaction, negative affect, burnout). Job stress is also predictive of various behavioral responses, such as lowered job performance, problems with family relationships, and self-damaging behaviors (see Kahn & Byosiere, 1992; Sauter

& Murphy, 1995). Without a doubt, the worker's psychological experience of the workplace is a crucial part of the fit between the person and the job.

Positive psychology

Positive psychology is the study of the conditions and processes that lead to the optimal functioning of people, groups, and institutions (Seligman & Csikszentmihalyi, 2000; Gable & Haidt, 2005). By expanding the research focus to positive factors, and not simply negative ones, this approach led to the reframing of many psychological concepts. For example, rather than just studying illness or antisocial behaviors, researchers have shifted to studying health or prosocial behaviors. In particular, positive psychology introduced the role of positive emotions as a critical element of wellbeing (Fredrickson, 2001). Positive emotions (such as joy, gratitude, inspiration and pride) are more than feelings—they are embodied states that come with action tendencies and their own urges, cognitive appraisals, and physiological reactions. When experienced, they signal to us that we are safe and not at risk, and thus they broaden our attention in the present, open us to new experiences, and help us to explore, build, collaborate, and share with others.

This positive psychology approach has been applied to the workplace, setting in motion a greater emphasis on the promotion of worker wellbeing (Turner, Barling, & Zacharatos, 2002). The fields of positive organizational scholarship (POS) and positive organizational behavior (POB) have emerged as a way to examine these concepts in the context of the workplace, in order to promote employee health and positive organizational outcomes. The general

focus has been on the ways in which employees and organizations flourish and display strength, resilience, and vitality (see Bakker & Schaufeli, 2008; Cameron, Dutton & Quinn, 2003; Luthans, 2002). In spite of its recent popularity in organizational research, however, support for the positive organizational research agenda is not without controversy (see Fineman, 2006), and there is acknowledgement of the need for more work on both theory and methodological challenges. Nonetheless, recent reviews of workplace wellness programs rooted in this positive psychology paradigm have shown some improved outcomes for individuals and organizations (Cameron, Mora, Leutscher, & Calarco, 2011; Meyers, van Woerkom, & Bakker, 2013).

Psychological Needs and Wellbeing at Work

What are the key lessons to be drawn from this prior research? First, there are important psychological qualities that a person brings to the workplace and experiences there. Second, the fit between the person and the job is of critical significance. A possible conclusion that could be drawn is that these psychological qualities might be the basis for a better person-job fit, and thus for better personal and job outcomes. The best candidate for the key psychological factor seems to be *need satisfaction* – and there is growing support for the idea that need satisfaction is critical for linking the fit between job characteristics and personal well-being at work (see Greguras & Diefendorff, 2009; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008).

The following sections provide summary reviews of the empirical research on the connection between various psychological needs and wellbeing

outcomes. They include the three core needs postulated by self-determination theory (autonomy, belongingness, and competence) but also several other psychological needs, or states, that have emerged as important psychological factors for workers.

Autonomy

The need for autonomy has been defined in self-determination theory (SDT) as people's desire to experience ownership of their behavior and to act with a sense of volition (Deci & Ryan, 2000). This sense of volition can be achieved through having the opportunity to make personal choices, but also through the full endorsement of an externally induced request. However, prior research in work and organizational psychology had defined autonomy in different terms, such as personal freedom, discretion, or independence, (e.g., Hackman & Oldham, 1976), or personal control (e.g. the Demand-Control model, Karasek & Theorell, 1990).

Consistent with the SDT conceptualization of autonomy, numerous cross-sectional studies have identified positive associations between employee task discretion and control over work pace with overall job satisfaction, performance, and employee mental health (Andreassen, Hetland, & Pallesen, 2010; Hall, Royle, Brymer, Perrewé, Ferris, & Hockwarter, 2006; Kalleberg, Nesheim & Olsen, 2009; Park & Searcy, 2012; Thompson & Prottas, 2006). Some have argued that satisfaction of the need for autonomy is the most important need contributing to overall job satisfaction and intent to stay among paid employees (Boezeman & Ellemers, 2009).

However, empirical evidence linking schedule flexibility and variability in working hours with employee mental health and job satisfaction is mixed (Costa, Sartori, & Åkerstedt, 2006; Nijp, Beckers, Geurts, Tucker, & Kompier, 2012). For example, a systematic review of work-time control and employee outcomes found consistent evidence for improved job-related outcomes (e.g., job performance, turnover) but limited effects on employee health and wellbeing as measured by self-reported fatigue, overall health and sickness absence (Nijp et al, 2012). Fewer studies have examined this relationship experimentally. Among autonomy intervention studies, such as job-crafting or job redesign, there is mixed evidence for a causal relationship between workplace autonomy and improved psychological wellbeing (Bambra, Egan, Thomas, Petticrew, & Whitehead, 2007; Holman & Axtell, 2015; Holman, Axtell, Sprigg, Totterdell, & Wall, 2009), positive employee health behaviors (Moen, Kelly, Tranby, & Huang, 2011), or job-related outcomes such as job motivation, satisfaction and performance (Nijp et al., 2012).

Belongingness

The need for belongingness or relatedness has been defined as the human striving for close and intimate relationships and the desire to achieve a sense of communion and belongingness (Baumeister & Leary, 1995). This basic concept has also been studied under other terms, such as social connection, affiliation, and recognition.

Evidence from cross-sectional and observational studies in the workplace suggests that positive coworker relationships and perceived social climate have

significant positive effects on employee wellbeing and job-related outcomes (Lindberg & Vingard 2011; Lohela, Björklund, Vingard, Hagberg, & Jensen, 2009; Luchman & Gonazalez-Morales 2013). Coworker support has also been found to be protective factor against employee exhaustion and turnover intent (Ducharme, Knudsen & Roman, 2007). Consistent with the model of need satisfaction described above, there is also evidence that employees' need to belong moderates the positive relationship between spirit of camaraderie and affective wellbeing (Rego & Souto, 2009). Social connection at work also has direct physical health implications. For example, positive social interactions at work were found to be associated with improved cardiovascular health and strengthening of the immune and neuroendocrine systems (Heaphy & Dutton, 2008).

There are fewer intervention studies examining the causal impact of social connectedness or teamwork on employee psychological wellbeing and organizational outcomes, and evidence from these experimental studies has been inconclusive (Bambra et al., 2007; Buller & Bell 1986; Kaplan, Bradley-Geist, Ahmad, Anderson, Hargrove, & Lindsey, 2014). However, a longitudinal intervention program focused on improving civility among nurses has been found to be effective in enhancing these collegial work relationships, and also in reducing absenteeism and burnout (Leiter, Laschinger, Day, & Gilin-Oore, 2011; Leiter, Day, Gilin-Oore, & Laschinger, 2012).

Competence

The need for competence represents individuals' desire to feel capable of mastering the environment, to bring about desired outcomes, and to manage various challenges (White, 1959). The SDT version of competence also emphasizes mastery of the environment, but includes the development of new skills. For competence in the workplace, the need has been described in terms of using one's energy efficiently to be effective at work and take care of one's work tasks. Similar constructs have been labeled as achievement or accomplishment.

Satisfaction of this need for competence in the workplace was assessed among 600 cross-occupational employees in Norway, and it was found to be significantly associated with work enjoyment (Andreassen, Hetland, & Pallesen, 2010). Another study found that satisfaction of the need for competence was strongly and negatively correlated with self-reported depression and anxiety (Baard, Deci, & Ryan, 2004). In a study of 121 nurses and pharmacists, satisfaction of the need for competence was more important than either autonomy and belongingness, and accounted for the most variation in mindfulness and vitality, two outcome measures of general and exercise-related wellbeing (Bernard, Martin, & Kulik, 2014). However, in a reversal of this pattern, competence did not predict intrinsic motivation in two cross-sectional studies of Norwegian employees, although both autonomy and belongingness were significant predictors (Dysvik, Kuvaas, & Gagné 2013).

Positive emotions

A large body of evidence has highlighted the relationship between employees' negative emotional experiences and adverse health and organizational outcomes (Kirkham, Clark, Bolas, Lewis, Jackson, Fisher, & Duncan, 2015). However, as mentioned earlier, there are now some theoretical models that link positive emotions and employer practices to employee wellbeing and positive organizational outcomes. Recent work in positive organizational psychology and positive organizational behavior has begun to substantiate these models with empirical evidence from cross-sectional, longitudinal and experimental studies (Bowling, Eschleman & Wang, 2010; Cameron, Mora, Leutscher, & Calarco, 2011; Rajaratnam, Sears, Shi, Coberley, & Pope, 2014; Sears, Shi, Coberley, & Pope, 2013). For example, in an application of the happy-productive worker and broaden-and-build theses, a study found that job satisfaction predicted supervisor-reported job performance, and high levels of psychological well-being moderated this relationship (Wright, Cropanzano, & Bonett, 2007).

The aggregate construct of "psychological capital," defined by positive feelings of hope, optimism, efficacy, and resiliency, has also been examined in the context of the workplace. Several cross-sectional and longitudinal studies have identified positive associations between measures of psychological capital and job-related affective wellbeing (Avey, Luthans, Smith, & Palmer, 2010; Culbertson, Fullager, & Mills 2010; Luthans, Norman, Avolio, & Avey, 2008). A meta-analysis of 51 studies also found strong evidence of a positive association between employee psychological capital and job-related attitudes, such as job

satisfaction and organizational commitment, and positive behaviors including employee citizenship (Avey, Reichard, Luthans, & Mhatre, 2011). Positive employee behaviors such as commitment, citizenship, and helping behaviors have also been associated with employees' positive affect (Ilies, Scott & Judge, 2006; Fisher, 2002).

Psychological safety

Given the earlier focus on how to protect workers from physical safety hazards, it is not surprising that there has been growing attention paid to workers' personal sense of feeling safe on the job. One approach was to conceptualize workplace safety climate as a higher-order construct, comprised of first-order factors including management values, safety practices, safety communication, safety training, and others. It presumes that safety climate is an antecedent for safety performance in organizations, which results in behaviors that directly promote safe work practices (Griffin & Neal, 2000).

A distinct, but conceptually related approach focused on psychological safety among team members (Edmondson, 1999). This concept was introduced as a model of team learning, in which reported psychological safety (which is characterized by interpersonal trust, respect, and caring within work teams) is positively related to team performance. In other words, do team members feel that the team is a safe place for interpersonal risk-taking? This construct has been tested empirically in literature examining optimal team functioning. For example, one study found that psychological safety and task conflict act synergistically to improve overall team performance (Bradley, Postlethwaite,

Klotz, Hamdani, & Brown, 2012). However, less research has examined how team psychological safety has affected individual employee wellbeing.

Recently, psychosocial safety has assumed a more prominent role in this conceptualization of workplace safety climate (Bronkhurst, 2015). Psychosocial safety climate (PSC) refers to employees' shared perception of management policies and practices that protect them from psychological and social risk or harm such as bullying, violence and aggression, and work stress (Dollard & Bakker, 2010). In other words, PSC can be thought of as a distinct organizational-level climate factor that buffers employees against psychosocial stress or harm (Idris, Dollard, Coward, & Dormann, 2012). Studies have shown that PSC moderates the relationship between emotional demands and emotional exhaustion, while predicting a change in work engagement through skill discretion (Dollard & Bakker, 2010). Another study, using cross-sectional data from a randomly selected sample of Australian households, drew similar conclusions regarding PSC as a determinant of employee psychological health and engagement, and as a moderator of psychosocial hazards such as bullying and harassment (Law, Dollard, Tuckey, & Dormann, 2011). A cross-national study, using data from 31 European countries, found that PSC, along with job redesign and positive psychosocial work conditions, is positively associated with worker health (Dollard & Neser, 2013).

Fairness

Fairness is the extent to which decisions at work are perceived as being just, and people are being treated with respect. Although there has not been any

theoretical construct of a psychological *need* for fairness, it could be argued that such a need is indeed important to people, and that the satisfaction of that need would lead to positive work and health outcomes. There has, in fact, been a lot of 7empirical evidence about how perceived unfairness at work is a significant source of job stress (see the review by Robbins, Ford, & Tetrick, 2002).

Fairness has also been implicated in other constructs such as inequity (e.g., as seen in the effort-reward imbalance model of Siegrist, 1996), and procedural justice, in which the fairness of the process is more important to people then the favorableness of the outcome (Lawler, 1968; Tyler, 1990). Recent research has shown that procedural justice is a factor in predicting need satisfaction and positive work outcomes (Gillet, Colombat, Michinov, Pronost, & Fouquereau, 2013). Organizational justice is another construct that includes the core notion of fairness, and is hypothesized to be an important component of employees' healthy psychological states. There is emerging evidence linking justice and fairness to positive employee outcomes, including job satisfaction, high performance, and low turnover intention (Harris, Andrews, & Kacmar, 2007; Janssen, Lam, & Huang, 2010).

Meaning

Research is finding that, in general, the experience of meaning in one's life is associated with many aspects of positive functioning (King, Heintzelman, & Ward, 2016). If people are doing something that they value, and that gives a sense of purpose to their life, it can be an important source of work motivation as well. Although this has not been labeled as a psychological *need* for meaning or

values, it clearly has relevant antecedents in concepts of self-actualization and personal growth. Factors that predict, mediate, or hinder employees' sense of meaning or purpose in their work has been one research focus of scholars in positive organizational behavior (Grant, 2007; Rosso, Dekas, & Wrzesniewski, 2010).

Empirical evidence is emerging to support the theoretical frameworks linking employees' perceptions of meaningful work, employee wellbeing and positive job-related outcomes (Arnold, Turner, Barling, Kelloway, & McKee, 2007; Steger, Dik, & Duffy 2012). For example, one study found that employee meaningfulness is negatively associated with absenteeism, and that this relationship is mediated by work engagement and employee wellbeing (Soane, Shantz, Alfes, Truss, Rees, & Gatenby, 2013). Job crafting is also being used as a tool to enhance job-person fit and augment employee meaningfulness (Tims, Derks, & Bakker, 2016; Wrzesniewski, LoBuglio, Dutton, & Berg, 2013). In particular, it has been hypothesized that job-crafting efforts guided by employees' strengths and passions have the potential to foster meaningfulness for employees, thereby improving employee job satisfaction and organizational outcomes (Berg, Dutton, & Wrzesniewski, 2013). A study of 253 adults found that job-crafting predicted employee subjective and psychological well-being through satisfaction of the intrinsic needs consistent with self-determination theory (Slemp & Vella-Brodrick, 2014).

Prescription for Building Healthy Workplaces

Recent sets of studies provide clear evidence that certain features of the work and workplace pose a danger to one's health. These alarming statistics have spurred renewed efforts to address worker health and well-being more comprehensively, and in ways that improve organizational practices, as well as how people work. One study examined 10 workplace stressors (unemployment, lack of health insurance, exposure to shift work, long working hours, job insecurity, work-family conflict, low job control, high job demands, low social support at work, and low organizational justice), and found that these caused more than 120,000 unnecessary deaths per year and an excess annual healthcare cost of 5-8% of the total spend on healthcare (Goh, Pfeffer, & Zenios, 2015). Another study examined the impact of five working conditions (physically demanding job, high time pressure, low job control, low rewards, and a lack of physical activity) on "working life expectancy" (at what age one is likely to leave employment because of illness or injury) and "working years lost" (due to premature exits from the labor force). There were significant negative effects on both of these outcomes, contributing collectively to almost four years difference (Burdorf, 2015).

Such evidence has spurred various interventions and programs to improve employee health and wellbeing, both by mitigating and eliminating bad effects, and promoting good effects. However, scientific reviews of the effectiveness of such programs have revealed somewhat disappointing outcomes. In the United States, studies have found relatively low rates of participation by employees in various wellness programs (Agency for Healthcare Research and Quality, 2016;

Mattke, Liu, Caloyeras, Huang, Van Busum, Khodyakov, & Shier, 2013). For

example, in one report less than 20% of those employees identified for health

intervention actually participated in a targeted program. In general, there was

only weak evidence for the impact of programs for smoking cessation,

consumption of fruits and vegetables, and physical activity. These results

suggest that wellness programs, as currently conceived and implemented, do not

have motivating properties, and thus they may be missing a key driver of

behavior change. Without having a strong motivational component to encourage

employee participation, these programs are unlikely to be perceived as fulfilling

an important need, thus depriving employees from benefitting from improved

health and ultimately greater wellbeing.

New strategies

The literature reviewed in this chapter makes a strong case that core

human needs are the key to psychological wellbeing, and that satisfaction of

these needs can lead to multiple desirable outcomes, both personal and

organizational. Sustained and long-lasting work motivation emanates from

intrinsic needs that have personal meaning and significance to the individual

worker. Satisfaction of these needs, through performance of the work itself

and/or the significance of this work, can result in productivity that is highly

satisfying and that promotes psychological wellbeing. A reasonable next step

toward achieving wellbeing at work is to determine how need satisfaction can

become an integral part of a worker's job and work environment. For

organizations, the central questions are: which are the most important needs for

organizations to address, and how can organizations best ensure the satisfaction of these needs?

Need satisfaction as the core of interventions and programs. Based on the prior literature review, **a** case can be made that seven needs have the potential for providing the "engine" for sustained and long-lasting work motivation and psychological well-being: autonomy, belongingness, competence, psychosocial safety, positive emotions, fairness, and meaning   All of these needs have been empirically linked to intrinsic work motivation and well-being. Thus, these seven needs have a solid basis as candidates for integration into interventions and programs that will promote well-being.

Knowing how this integration can be accomplished is the challenging part. Following the job characteristics model (Hackman & Oldham, 1980), several aspects of the job and task design can be modified to increase the probability of need satisfaction through performance of the work itself. What is important is how the worker *perceives* the qualities inherent in this work—does the work stimulate feelings of competence and mastery, is there autonomy in some aspects of how the work is accomplished, does the worker feel safe and treated fairly when tasks are performed, and are there opportunities for building a sense of belonging within the organizational community and for experiencing positive feelings and meaningful pride in the work?

Parallel questions need to focus on the many ways in which the work environment, in all its many dimensions, can provides opportunities for need satisfaction. For example, does the organizational culture promote intrinsically-

important values that are consistent with those of workers? Do organizational policies enable workers to have sufficient autonomy and control over their work lives, in order to accommodate personal and family-related issues? Is the workstation and workspace design such that it supports work accomplishment, promotes social connections, enables privacy and control over disruptions? Is the built environment (walls, indoor environmental quality, interior design, outdoor environment) such that workers are free from toxic materials and safety hazards, and that they derive pleasure from being in these spaces? Are leadership and management helpful and supportive of workers' performance, accomplishment, and recognition of their achievements?

Wellness programs can be treated similarly: in what ways should these programs be designed, implemented, and managed such that workers are motivated to participate through satisfaction of important needs? Seen through the lens of need satisfaction, all aspects of the job and workplace environment can be modified or designed in a manner that will reinforce these seven needs, and remove barriers to need satisfaction.

Participant involvement. An important conclusion of the research literature on procedural justice is that participation in a change effort results in greater understanding of the problem to be solved and lasting commitment to its solution (Kim & Mauborgne, 1997). Also, participation in decision-making has been shown to result in better decisions and acceptance of decisions (Vroom, 2004). Given the value that comes with participation, it is reasonable to suggest that any effort to design or modify the job or the work environment will be most

successful if recipients of those changes were involved in the process—*particularly with respect to what will lead to their need satisfaction.* Often decisions about program design, interventions, and other organizational changes are made without user/consumer/receiver input. Instead, a common step in new building design is to gain occupant reactions *after* the changes have been made, by conducting post-occupancy surveys. This can result in some very difficult and costly situations that could have been avoided if the occupants had been engaged in the change process in advance. To maximize employees' motivation to accept and internalize change, it is critical to determine just what will maximize this motivation from a psychological perspective. The more behavior change or change acceptance is motivated by these core intrinsic factors, the more likely that change will occur and occur *willingly* because of the impact of need satisfaction.

A classic example will illustrate this point. Prior to World War II, Welsh coal miners worked in small groups, sharing and exchanging tasks, enabling social interaction and working at their own pace. After the war, coal-cutting machines were introduced to increase efficiency and lower costs. The job was changed to include larger groups of workers, each man working independently on a small set of repetitive tasks with little or no interaction among the men. Work carried over from shift to shift, and problems on any shift had to be solved on subsequent shifts. Productivity plummeted, dissatisfaction rose, absenteeism increased dramatically, grievances were filed, and the company experienced frequent work process breakdowns. To correct the problems, the work was

changed again to bring back the aspects of the job that met the miners' core needs: self-selected work teams, decreased interdependence between shifts, and increased task variety. Productivity and efficiency increased beyond the company's expectations, and job satisfaction returned (Hendrick, 2006).

Work with organizational and interdisciplinary partners. Psychological wellbeing is a multi-faceted and complex construct, and it is affected by everything that humans interact with—physically and psychologically. In the workplace, this means that psychological wellbeing can be affected by a multitude of factors, including the job, the work environment, co-workers, management, organizational policies, work demands, work-life issues, physical health, and so on. To achieve the goal of psychological wellbeing in the workplace, it will be important to address all relevant factors in an integrated, comprehensive manner.

Thus, there is a clear need for psychologists to work with interdisciplinary partners who know about factors that promote worker health and wellbeing in disciplines outside of psychology. These fields include public health, occupational health, nutrition, business, industrial hygiene, architecture, interior design, human factors/ergonomics, computer science, human resources, and sociology. Each discipline has approached the topic of health and wellbeing from its own perspective, but is often relatively ignorant of the relevant contributions of the other fields. An important future goal would be to develop a method for combining these perspectives in a way that would lead to (1) a comprehensive and integrated view of a healthy workplace, and (2) an effective process for how

to build and maintain it. The Interdisciplinary Center for Healthy Workplaces was designed to accomplish this integration of knowledge across disciplines with the purpose of identifying the key factors that can be integrated into a comprehensive approach to worker health and wellbeing.[1] Need satisfaction is the common element across these literatures, and will be the driver of recommendations for change in this comprehensive approach.

Conclusion

The knowledge exists to begin building healthy workplaces in a robust, compelling way. Psychologists can contribute significantly to the design of healthy workplaces, along with their academic and practitioner partners. This is because psychology is deeply rooted in its understanding of human needs and how their satisfaction directly affects people's work motivation, quality of life, and their physical and psychological wellbeing

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[1] HealthyWorkplaces website: healthyworkplaces.berkeley.edu.

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