Wellbeing and Work Performance

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Abstract:

This chapter reviews research into the happy worker-productive worker thesis, which suggests that individuals and groups with raised wellbeing perform better in their jobs than do those with lower wellbeing. We examine different types of context-free and job-related wellbeing, and explore work performance in terms of in-role and extra-role behaviors and through specific activities such as being creative or proactive. In studies of individual workers, small-to-moderate cross-sectional and longitudinal associations with performance are demonstrated, for example when focusing on wellbeing in the form of job satisfaction or certain types of affect. We also review research into potential moderators of these associations, finding that the magnitude of correlation depends, for example, on the opportunity for personal discretion, occupational grade, and expected benefits from good performance. However, in the absence of adequately controlled experiments in working organizations it is impossible to determine causal direction. Turning to group-level wellbeing, we find that group affective tone is also moderately related to performance. Some group characteristics, such as the number of members, have been suggested as important moderators, but group-level research into possible moderators has been extremely rare. We finish the chapter by suggesting some desirable developments in research, and offering an overall speculation about causal influences in this area.

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Performance in paid work has for many years been studied as an important form of individual and group behavior, with researchers and practitioners often aiming for its enhancement through job design, staff selection and development, or shaping managerial style and organizational culture. In parallel with this interest in performance, psychologists in employment settings have also worked to understand the sources and consequences of wellbeing, and the two variables will be examined together in this chapter.

A substantial association between wellbeing and job performance is widely envisaged. For example, as many as 92% of Australasian employees in Fisher's (2003) study believed that 'a happy worker is likely to be a productive worker'. Although academic researchers are cautious about the direction of causation, many lay-people emphasize the impact of wellbeing on performance. Ledford (1999) notes that this belief in the productive power of happiness fits comfortably with the hopes of all parties involved – employers, employees and academic researchers. Employers can value worker wellbeing as a possible source of good performance; employees recognize wellbeing as desirable in itself; and for researchers the prospect of jointly optimizing both variables can support claims that neither management nor labor is being favored by their research. As Ledford (1999, p. 27) points out: 'If interventions based on our theories lead to outcomes that are good both for organizations and individuals, who can complain?'.

Types of Wellbeing

In thinking about and measuring wellbeing, it is important to differentiate between its various forms. In respect of scope, the broadest wellbeing is 'context-free' – in terms of life in general rather than concerned with a particular setting. Wellbeing of that broadest scope has been measured through satisfaction with life, global happiness, and similar constructs. Next, medium-scope wellbeing is that which is experienced within one segment of a life-space, focused on one's family, health, leisure, or other

domains. In the present chapter, domain-specific wellbeing concerns a person's job, being referred to as 'job-related' wellbeing and measured through job satisfaction, job strain and similar variables. Most narrowly, we might examine wellbeing experienced in respect of one particular element. This can be termed 'feature-specific' wellbeing, in terms of positive or negative feelings about a particular thing, person, group, episode, or idea. Much studied in job settings is 'facet-specific' job satisfaction – with one's pay, supervisor or other elements.

Studies have varied in the wellbeing scope under investigation, and have also differed in their emphasis on longer-term versus shorter-term experiences. Longer-term wellbeing, that which extends across time, has sometimes been viewed as a trait or disposition, and must be distinguished from wellbeing within a short period – 'state' or 'situational' wellbeing. Dispositional forms may be viewed as aspects of personality; they are sometimes referred to as 'affectivity' in contrast to shorter-term 'affect'.

It is also important to examine separately two types of wellbeing indicator, either in terms of a compound of thoughts and feelings or directly through particular feelings. Cognitive-affective compounds of wellbeing have been investigated through multi-item questionnaires about satisfaction, engagement, strain, burnout, depression and the like, bringing together thoughts, recollections, expectations, and mental networks. As illustrated in this chapter, workers' wellbeing has been measured through compounds indexing job satisfaction, or work[1] engagement as well as life satisfaction. Self-assessments of wellbeing in these compound terms call for more reflection and mental processing than do assessments through specific feelings – attending to and remembering particular elements and episodes, interpreting, evaluating and integrating what is recalled, and perhaps making comparisons with other people or other settings (e.g., Staw & Cohen-Charash, 2005; Warr, 2013).

Wellbeing measures of the second kind, in terms of feelings, often ask about core affect – pleasant or unpleasant experiences that are 'primitive, universal, and simple, irreducible on the mental plane' (Russell, 2003, p. 148). Illustrated by 'happy', 'relaxed', 'anxious' and 'sad', feelings range along a positive-negative continuum and also occur within emotions, moods, values, attitudes, orientations, and ideologies.

However, as well as in positive or negative direction, affects and cognitive-affective compounds also differ in other respects, one of which is particularly important here. In addition to their direction, the circumplex model introduced by Russell (1980) characterizes feelings through the degree to which they are physiologically and/or psychologically activated, being in an elevated 'state of readiness for action or energy expenditure' (Russell, 2003, p. 156). Positive feelings of high versus low activation have been studied in terms of, for instance, enthusiasm and elation (high activation) versus calmness and relaxation (low activation) (e.g., Warr, Bindl, Parker, & Inceoglu, 2014), and a lower level of activation is tapped in many compound scales of life or job satisfaction; 'satis' derives from the Latin word meaning 'enough'. On the other hand, raised activation in job tasks is central to compounds of job engagement (e.g., Bakker, Albrecht, & Leiter, 2011). That is a combination of positive orientation and raised motivation, so 'is fundamentally a motivational construct that represents an active allocation of personal resources towards the task' (Christian, Garcia, & Slaughter, 2011, p.91), whereas the notion of satisfaction implies merely acceptance of a situation.[2]

Types of Work Performance

Wellbeing thus takes several forms which need to be distinguished in reviewing associations with other variables. It is also essential to differentiate between kinds of performance[3], and researchers in job settings have concentrated on the five types outlined below (e.g., Borman & Motowidlo, 1993; Griffin, Neal, & Parker, 2007; Koopmans et al., 2011; Viswesvaran & Ones, 2000). Objective indicators of individual workers' performance (their output, sales, etc.) are rarely available, for example because output is recorded for groups rather than individuals or because job activities are not readily quantifiable. Many researchers have therefore investigated subjective assessments of performance – either ratings by supervisors, colleagues or customers, or self-descriptions by research participants themselves. Performance ratings by other people can be problematic, because observers may lack adequate knowledge or because target behaviors depend on mental processes which are unobservable; furthermore, self-descriptions might err towards positive assessment. In this and other fields, published results can powerfully depend on researchers' operationalization of variables so that reported findings from different studies are not necessarily comparable with each other.

Of the principal aspects of performance, *task performance*, sometimes referred to as 'in-role performance' or 'proficiency', has been of primary interest. Focusing on behaviors which are formally required to meet organizational goals, research has investigated either overall indicators of a person's

effectiveness in a job or the summation of separate behavioral assessments.

Second, *specific job behaviors* have been examined without setting those in the overall-performance category above. Examples have included work quality, adaptability, innovativeness, proactivity, participation in learning, and technical competence.

Organizational citizenship behavior (OCB), also referred to as 'extra-role'. 'contextual', or 'pro-social' activity, is that which goes beyond formally prescribed job goals ('task performance' above), for example through helping colleagues, guiding new workers, or choosing to take on additional tasks.

Counterproductive work behavior has negative value to an organization, violating accepted conventions, for example through damaging equipment, stealing property, bullying subordinates or other people, avoiding effort, and abusing drugs.

Workers' *absenteeism*, another key negative variable in this area, can create difficulties for team colleagues and for wider organizational success, especially when a person's non-attendance is unexpected or long-lasting. Research problems can arise in separating medically-prescribed periods of ('involuntary') absence from those which might result more from a worker's personal choice (e.g., Johns, 1997; Johns & Miraglia, 2015).

Research into these five types of work performance has mainly focused on individual workers, and the chapter will first review research of that single-person kind. However, many job activities involve collaboration within a group, and we will also examine the smaller number of studies on group-level performance and wellbeing.

Individual-level Research

Considerable non-occupational research has identified positive relationships between individual wellbeing and success in diverse areas of life. Cross-sectional, longitudinal and experimental studies have pointed to possible benefits of wellbeing for health, longevity, family and social relationships, social relationships, cooperativeness, creativity, self-evaluation, and self-regulation (De Neve, Diener, Tay, & Xuereb, 2013; Diener et al., 2017; Lyubomirsky, King, & Diener, 2005; Tenney, Poole, & Diener, 2016). In job settings, research has explored associations of performance with different aspects of wellbeing as follows.

Wellbeing Measured as Job Satisfaction

Partly-overlapping meta-analyses by Petty, McGee, and Cavender (1984), Iaffaldano and Muchinsky (1985), Judge, Thoresen, Bono, and Patton (2001), and Harrison, Newman, and Roth (2006) have yielded average uncorrected correlations between overall job satisfaction and *task performance* of .23, .25, .18 and .18 respectively. A subsequent study by Halbesleben and Wheeler (2008) found a correlation with supervisor-rated performance of .22, Edwards, Bell, Arthur, and Decuir (2008) reported a correlation of .15, and Schleicher, Watt, and Greguras (2004) found correlations of .15 and (averaged from two satisfaction scales in two samples) .28.

Researchers into job satisfaction have often examined task performance as rated by supervisors or (less often) by colleagues, but a small number have obtained self-ratings by workers themselves. Only rarely have satisfaction-performance associations been directly compared between self-ratings of performance and parallel ratings by other people, with apparently similar findings (Iaffaldano & Muchinsky, 1985).[4]

Moving on to the second type of performance introduced above, *specific job behaviors,* personal innovation in a job was investigated by Ayala, Peiró Silla, Tordera, Lorente, and Yeves (2016). They found that young workers' job satisfaction was correlated .41 with their self-reports of innovation at work.

Significant associations have also been found between job satisfaction and *organizational citizenship behavior* (OCB). A meta-analysis by Organ and Ryan (1995) identified uncorrected average cross-sectional correlations of .23, .20, and .38 with altruism, generalized contribution and overall citizenship, and the review by Harrison et al. (2006) recorded average correlations of .26 (concurrent analyses) and .22 (predictive, with satisfaction measured before OCB). Later cross-sectional research by Edwards et al. (2008) found a correlation of .15 with supervisor-rated citizenship. A two-week diary study by Fisher (2002) revealed workers' average job satisfaction to be correlated .23 with self-reported citizenship behavior, and for average satisfaction across three weeks that correlation was .52 in the study by Ilies, Scott, and Judge (2006).

Job satisfaction has been found to be negatively correlated with *counterproductive work behavior*,

for example -.33 and -.25 with self-reports and peer-reports in the study by Penney and Spector (2005). For employee *absenteeism*, negative correlations have also been found, for example -.20 and -.25 in research by Johns (1997) and -.14 in the meta-analysis by Harrison et al. (2006). Almost all studies in this field have recorded absence from work at a time before wellbeing is measured, but Hardy, Woods, and Wall (2000) studied job satisfaction in advance of information about absence frequency; the correlation was found to be -.23. Focusing only on intrinsic aspects of job satisfaction (for instance, with opportunity to learn new skills) and subsequent short-term absence, Mirvis and Lawler (1977) recorded a correlation of -.81.

Task performance as a function of different facets of job satisfaction has less often been studied. However, it appears that satisfaction with the work itself and with one's supervisor are significantly associated (around .20) with task performance (Edwards et al., 2008; Petty et al., 1984), but smaller correlations are found with other facet satisfactions – concerning pay, promotion, co-workers and so on. Slocum (1971) reported that managers' task performance was more strongly correlated with the satisfaction of self-actualization needs than, for instance, with security needs.

Wellbeing Measured through Other

Cognitive-Affective Compounds

In addition to examining associations with job satisfaction, research into work performance has also explored links with other forms of wellbeing. This section will review compound cognitive-affective indicators beyond job satisfaction, before associations with wellbeing in terms of a worker's affect are considered in the next section.

In recent years, increasing attention has been devoted to the construct of job engagement, a motivated state of positive wellbeing characterized by vigor, dedication, and absorption in one's work (e.g., Bakker et al., 2011; Schaufeli, Salanova, González-Roma, & Bakker, 2002; Warr & Inceoglu, 2014). Meta-analyses of findings by Rich, Lepine, and Crawford (2010) and Christian et al. (2011) drew on then-available (fewer than ten) studies to report mean correlations of job engagement with task performance of .35 and .36 respectively[5], and mean correlations with organizational citizenship behavior of .35 and .26. In addition, Christian et al. (2011) showed through incremental analyses for both kinds of behavior that job engagement accounted for significant additional variance over and above job satisfaction.

Studying a wide range of jobs, Halbesleben and Wheeler (2008) found a correlation of .32 between job engagement and supervisor-rated task performance. Among employees in a fast-food company, Xanthopoulou, Bakker, Demerouti, and Schaufeli (2009) reported a correlation of .34 between day-level job engagement and that day's branch income. A significant association with engagement was also found in a broader sample of workers by Demerouti, Bakker, and Halbesleben (2015) for self-reports of day-level task performance and (negatively and less strongly) for self-reported counterproductive work behavior. Bakker and Bal (2010) similarly observed in a weekly diary study that teachers' self-rated performance co-varied with their level of job engagement. Among self-employed entrepreneurs (individuals who founded or owned a private company), Gorgievski, Moriano, and Bakker (2014) observed a correlation of .56 with self-described innovative behavior. In another sample of entrepreneurs, job engagement was found by Djkhuizen, Gorgievski, van Veldhoven, and Schalk (2016) to be significantly associated with subjective personal, but not financial, success. Overall, it appears that job engagement is more strongly associated with task performance than is job satisfaction, but a meta-analysis of comparative levels in the same sample is still required.

Negative forms of wellbeing have been investigated through reports of job-related emotional exhaustion[6], sometimes treated as a component of job burnout. For example, Taris (2006) brought together the few studies of emotional exhaustion available at the time of writing (16 of them, with different measures and samples), and reported mean correlations with task performance and citizenship behavior of -.19 and -.17. Subsequent findings about emotional exhaustion and task performance include a nonsignificant association in the study by Demerouti et al. (2015) and significant correlations of -.13 (Janssen, Lam, & Huang, 2010), -.27 (Demerouti, Bakker, & Leiter, 2014), -.19 and -.18 with self- and other ratings (Mastenbroek et al., 2014), and (across time) -.28 (Petrou, Demerouti, & Schaufeli, 2015). In respect of organizational citizenship, Janssen et al. (2010) obtained *r*'s of -.19 and -.23 with two measures, but that association was insignificant in the study by Mastenbroek et al. (2014).

Finally in this section on compound measures of wellbeing, we turn to context-free indicators. Examining senior managers' life satisfaction in relation to their self-rated job performance, Zelenski, Murphy, and Jenkins (2008) found an intercorrelation of .25, very similar to their finding for job-related satisfaction (.22). Bringing together an unspecified number of publications, Erdogan, Bauer, Truxillo, and

Mansfield (2012) reported an average correlation between life satisfaction and task performance of .14, and in a parallel analysis by Ford, Cerasoli, Higgins, and Decesare (2011) the average r was .16 from six studies. Other context-free research has focused on negative forms of wellbeing. For example, in the meta-analysis by Ford et al. (2011, above) generalized anxiety and depression were on average correlated -.15 and -.14 (uncorrected) with measures of job performance. Hardy et al. (2000) studied context-free psychological distress in relation to subsequent lost-time absence, finding a correlation of .25.

A wellbeing indicator combining job-specific and context-free measures (job satisfaction, job engagement, and life satisfaction) was studied by Djkhuizen, Gorgievski, van Veldhoven, and Schalk (2017). They described how the wellbeing of entrepreneurs predicted reports of subjective personal and financial success after an interval of two years; however, the lagged association with business performance (annual profit, financial turnover and number of employees) was non-significant.

Wellbeing Measured as Job-related Affect

Given that all compounds of wellbeing contain some positive or negative feelings, the patterns illustrated above are expected in general to be paralleled by findings about affect. Affect research outside employment settings has been summarized by, for instance, Isen and Baron (1991) and Barsade and Gibson (2007), and also within organizations by Forgas and George (2001). This section will instead examine research into workers and their job-related feelings.

Applying the Multiple Affect Adjective Checklist (MAACL) to feelings at work, Motowidlo, Packard, and Manning (1986) obtained nurses' reports of job-related negative and positive affect. They recorded depression through self-descriptions of feeling miserable, sad, enthusiastic, inspired, etc., and assessed anxiety in terms of feeling tense, worrying, cheerful, happy, and so on. Feelings which can be viewed along an axis from job-related depression to enthusiasm were significantly correlated (-.31 and -.21) with supervisors' ratings of interpersonal and cognitive/motivational effectiveness, but feelings of anxiety were unrelated to performance in those terms. Staw, Sutton, and Pelled (1994) also investigated supervisor ratings of task performance in relation to job-related feelings along the depression-enthusiasm axis (which they referred to as 'positive emotion'), finding an overall concurrent correlation of .30 and a predictive r of .16 over 18 months. Activated positive affect was found by Eisenberger, Armeli, Rexwinkel, Lynch, and Rhoades (2001) to be correlated .16 with supervisor-rated task performance. For citizenship behavior (here, supervisor-rated altruism), George (1991) recorded a correlation of .24 with activated positive affect, although the correlation with subsequent sales was only .10. In the diary study by Zelenski et al. (2008), positive affect was concurrently associated .36 with self-rated productivity, but correlations with negative affect were around zero.

For self-reported citizenship behavior, a stronger association with positive than with negative affect was also found by Fisher (2002) in analyses of average job feelings across two weeks (r's = .48 and -.01 respectively). Average diary levels of activated positive affect across three weeks were found by Ilies et al. (2006) to be correlated .61 with self-reported organizational citizenship behavior. Examining momentary feelings, self-reported allocation of job effort was found by Foo, Uy, and Baron (2009) to be correlated on average .20 with positive affect but only .06 with negative affect. Two diary studies by Dalal, Lam, Weiss, Welch, and Hulin (2009) yielded significant concurrent associations between job-related affect and self-reported citizenship and counterproductive behavior, such that positive affect was typically related to citizenship but not to counterproductive behavior, and negative affect was more often related to counterproductive activity than to citizenship[7].

Some research has directly compared activated versus non-activated positive affect. Studying a range of self-reported task and citizenship behaviors in six different samples, Warr, Bindl, Parker, and Inceoglu (2014) showed that work performance is principally associated with positive job feelings that are activated, as did Madrid, Patterson, Birdi, Leiva, and Kausel (2014) in a single-sample diary study of self-reported work innovation.

Positive mood at work was found by George (1989) to be correlated -.28 with subsequent absenteeism, but negative mood was unrelated (-.03). In research by Hardy et al. (2000), feelings of job-related anxiety and depression were correlated .30 and .25 with subsequent absenteeism.

Wellbeing Measured as Context-free Affect

Work behaviors are also moderately associated with wider-ranging feelings, those which are context-free. For example, Tsai, Chen, & Liu (2007) found that the context-free[8] activated positive moods of insurance sales agents were correlated .46 with their supervisors' ratings of task performance and .36

with their self-assessments. Reviewing organizational citizenship behaviors across 23 previous investigations, Dalal (2005) found average correlations of .28 and -.08 with varied measures of positive affect and negative affect. For counterproductive work behavior, those average values were -.28 and .34.

A few investigations of context-free affect have focused on specific aspects of work performance. For instance, Fritz and Sonnentag (2009) asked about proactive work behavior as a function of context-free activated positive and negative affect, finding average correlations of .36 and .13 respectively. Other studies obtaining significant correlations between proactivity and positive affect (but mixed results for negative affect) have been reviewed by Cangiano, Bindl, and Parker (2017).

Links with creativity at work have been investigated longitudinally by Amabile, Barsade, Mueller, and Staw (2005) and considered non-empirically by James, Broderson, and Eisenberg (2004). Amabile and colleagues studied 222 members of innovation-tasked teams at the end of a day for the duration of each individual's personal project extending up to 38 weeks. A person's creative contribution was assessed through researchers' coding of that individual's daily accounts of experiences and through monthly ratings by colleagues. Both performance indicators were modestly but statistically-significantly associated with a day's positive feelings.

What Do the Correlations Mean?

This summary of empirical research has revealed a consistently positive but small association between individual workers' wellbeing and performance. Many studies have additionally controlled for potentially-distorting demographic and other variables, and a modest cross-sectional association seems to be well established across many work behaviors. How might it be explained?

Perhaps greater wellbeing causes better performance. For that causal pattern to be inferred from empirical findings, a minimum requirement is for wellbeing to be measured before performance. The field has been dominated by single-occasion research[9], but a few publications have considered longitudinal associations across time, finding that lagged patterns are similar to, but can be reduced from, those cross-sectional associations (e.g., Riketta, 2008).[10] It is certainly desirable to investigate patterns in which wellbeing is measured in advance of performance. However, even when greater job satisfaction, for instance, has been shown to precede better performance, causal impact from satisfaction cannot be inferred.

For example, influence might instead flow in the reverse direction, from good performance to, say, job satisfaction (e.g., Lawler & Porter, 1967). Successful task performance could lead to intrinsic rewards (for instance positive feelings linked to self-esteem) and/or extrinsic rewards such as promotion or an increase in pay. The two sequential directions between wellbeing and performance have been compared by Harrison et al. (2006) and Riketta (2008), in both cases showing that average longitudinal correlations are almost identical irrespective of direction. In the meta-analysis of across-time studies by Harrison and colleagues, longitudinal correlations between job satisfaction and task performance averaged .17 when job satisfaction was measured before task performance and .19 when performance preceded satisfaction. Riketta analyzed a smaller number of panel studies, and reported average correlations of .11 between job satisfaction and subsequent task performance and .10 when performance was measured before satisfaction. For organizational citizenship behavior, Riketta found that the two average correlations with job satisfaction were .23 and .22 respectively.

A third possible causal interpretation combines the previous two. Influence might be reciprocal, flowing in both directions, so that wellbeing causes good performance and good performance causes wellbeing. Personal experiences lead many people to suspect that this is often the case, even though processes within a single individual cannot be generalized to the between-person analyses which make up the bulk of the empirical literature. However, assuming that some causal influence is reciprocal in that way, we might also expect that the relative weight of each varies between situations and the operation of other variables and processes.

However, an additional causal possibility has special merit. In some cases, both wellbeing and performance may be influenced by omitted, unmeasured features, sometimes labeled as a study's 'third variables'.[11] Such potentially causative variables may operate either as short-term 'occasion factors' or as longer-term, continuing influences (e.g., Zapf, Dormann, & Frese, 1996). Thus, concurrent short-term impacts on both wellbeing and behavior might derive from characteristics of a setting occupied only briefly or from immediately preceding events; and more extended influences can include continuing supervisor behavior, support from colleagues, equipment limitations, particular stressors, etc. or from dispositional worker characteristics such as ability, gender, personality, value preferences, and so on. Although researchers have sometimes statistically controlled a number of these possible 'third' variables, other

potential influences of this kind can be envisaged in all published investigations.

It is logically impossible to be certain that no other features or groups of features also require consideration as potentially important omitted variables.[12] More generally, it is widely recognized that learning about causality requires some form of experimental manipulation. Within a working organization, tightly controlled experiments are almost always unacceptable to managers, non-managers or both, and any organizational experiments which may be undertaken in this area are likely to be fatally flawed.

Researchers into wellbeing and behavior have therefore turned to laboratory experiments to examine the impact of induced positive or negative feelings. Affect-induction procedures in this research have included watching a film clip, receiving an unexpected small gift, reading about positive occurrences, or being exposed to an attractive scent, and research participants have almost always been university students. Laboratory experiments which induce affect have revealed several consequential changes in cognition and behavior (e.g., Baas, De Dreu, & Nijstad, 2008; Baron, 1990; Barsade & Gibson, 2007; Erez & Isen, 2002; Fredrickson & Branigan, 2005). For instance, increases in positive affect have been shown to give rise to significantly more speedy and more comprehensive mental processing, more positive judgments about neutral material, greater persistence, and more positive expectancy motivation, enhanced optimism, increased creativity and self-esteem, and more cooperation with other people.[13] Oswald, Proto, and Sgroi (2015) described three laboratory comparisons of arithmetic task productivity, finding that the output of participants with induced positive-mood exceeded control groups by an average of 12%.

Experiments of this kind have yielded consistent findings in comparisons between positive and neutral affect[14] (induced positive affect yields positive behaviors), but it is of course uncertain how readily those findings can be generalized to organizational settings. Laboratory effects are unlikely to endure beyond about 20 minutes, and a range of additional variables and social processes also operate in organizations. Furthermore, activities in a job and elsewhere often bring together behaviors of several different kinds and embody sequences of experiences that shift between evaluatively negative and positive and perhaps back again. Nevertheless, although laboratory-derived patterns cannot be directly applied to a workplace, published causal evidence from experimental research together with personal experiences in everyday life suggest to many people that wellbeing has some influence on performance. Furthermore, measured compounds of wellbeing such as job satisfaction or life satisfaction derive from the accumulation of feelings throughout life, many of which are themselves only brief; short-term affects are cumulatively important in the long term when combined with other short-term affects (e.g., Diener, 1984; Diener, Suh, Lucas, & Smith, 1999; Fisher, 2000; Kim-Prieto, Diener, Tamir, Scollon, & Diener, 2005). However, other causal influences on performance are also probable, outlined above, and multiple causal routes should often be envisaged. In general, patterns of influence are likely to vary between different feelings, events and situations.

Varied Associations between Wellbeing and

Performance: Possible Moderators

Given that observed correlations between wellbeing and job performance can differ between studies, it is important to examine possible moderator variables. Furthermore, by learning about the conditions under which an association between wellbeing and performance is either larger or smaller, we can form hunches about the causes of that association. There is a sense in which moderator analyses, contrasting high and low levels of a possibly moderating variable, can be viewed as notionally manipulating that variable – a form of 'thought experiment'.

Early research into moderators in this area focused on the level of constraints on personal decision-making and action. In some jobs, a person is free to decide how work is done, but in other cases external constraints, such as instructions from a supervisor, strong social norms, or control of behavior by machine, reduce personal autonomy so that associations between individual characteristics and behavior are then likely to be reduced. Herman (1973) studied attitude-behavior links in the absence of situational pressures – when voting for or against trade union representation in one's company. In that low-constraint setting, voting in favor of union representation was strongly negatively correlated (-.57) with satisfaction with the company. Across a range of constraint levels, Bhagat (1982) examined external restrictions on department-store managers in terms of perceived organizational pressure for high performance; correlations between job satisfaction and supervisor-rated task performance averaged .56 among managers reporting low organizational pressure, but were only .01 among high-pressure employees. For reported time pressure, the low- and high-constraint sub-group correlations were .49 and.06 respectively.

The continuum between external and internal influences on behavior was viewed by Mischel (e.g., 1977) in terms of 'situational strength', a major component of which is the degree to which an environment acts to constrain self-initiated behavior (e.g., Bowling, Khazon, Meyer, & Burrus, 2015; Meyer, Dalal, & Hermida, 2010). The opportunity to use personal discretion is limited in situations of high constraint – 'strong' situations in terms of Mischel's model, A meta-analysis by Bowling et al. (2015) revealed a correlation of -.34 between the magnitude of constraints in a job and the association between job satisfaction and task performance; that is, stronger associations between wellbeing and performance were found when jobs impose fewer constraints. From structural equation analyses of six sets of data, Warr et al. (2014) observed substantial associations more widely among discretionary (i.e., low-constraint) forms of job behavior. This theme was central to George and Brief's (1992) model of positive mood at work, which was viewed as having 'the most effect on behaviors that are performed of one's own free will' (p. 324).

Some researchers have examined a second possible moderator – the degree to which good performance yields personal benefits for an individual. In those terms, associations between wellbeing and performance are predicted to be stronger when good performance brings the potential for some personal reward. That was seen to be the case in a laboratory experiment by Cherrington, Reitz, and Scott (1971), comparing the presence versus absence of performance-based payment, and among salespeople and managers by Jacobs and Solomon (1977), who found that associations between job satisfaction and supervisor-rated task performance were moderated by the perceived presence or absence of organizational performance-reward contingencies.

In the same vein, Schwab and Cummings (1970) emphasized the assessed instrumentality of good performance – the degree to which it provides a path to personally-important goal achievement. Intrinsic rewards, rather than those which are extrinsic such as pay or better work conditions, were central to the models of Lawler and Porter (1967) and Slocum (1971) and to the perspective of Hochwarter, Perrewé, Ferris, & Brymer (1999) on workers' attainment of outcomes which are consistent with their personal values. Perceived distributive justice (an acceptable balance between personal effort and reward) has been shown by Janssen et al. (2010) to significantly affect the association of emotional exhaustion with supervisory ratings of both task performance and organizational citizenship: Emotional exhaustion was negatively associated with performance when justice was perceived to be high, but unrelated for workers experiencing low justice.

Some moderators of these kinds are reflected in differences between organizational grades. Managers and professional staff have more freedom than others to determine their own activities and wellbeing. It might therefore be expected that correlations between wellbeing and work performance will be greater among managers and professional staff than among lower-grade workers. In Sheridan and Slocum's (1975) study in a steel company, wellbeing-performance correlations were found to average .23 and .10 for managers and machine operators respectively.[15] Doll and Gunderson (1969) contrasted scientists against enlisted naval personnel on Antarctic assignments, finding correlations between job satisfaction and supervisor-rated performance of .34 and .05 respectively. The review of overall job satisfaction in relation to task performance by Petty et al. (1984) found average correlations of .31 and .15 for professional/managerial versus other workers, and the meta-analysis by Judge et al. (2001) identified average correlations of .26 for jobs rated as highly complex and .18 for low-complexity work.

Social pressures provide another potential constraint on discretionary behavior, for example through the operation of work-group norms about acceptable performance. In cases where a work group has established a normatively prescribed level of acceptable performance, it may be that a person's own feelings and values will less determine behavior than in the absence of a strong norm. Early research in this area emphasized that work-group cohesiveness is likely to promote norms of either low or high productivity (e.g., Seashore, 1954), and parallel themes have been developed in terms of social identity theory by van Knippenberg (e.g., 2000) and Tanghe, Wisse, and van der Flier (2010); individuals who more strongly identify with a group are thought more likely to accept the group's norms so that their behavior is more likely to be shaped by them.

That between-person variation might also be construed in terms of an individualist versus collectivist orientation, some aspects of which have been examined through peoples' tendency to experience guilt when deviating from the expectations of others. Guilt-prone workers are likely to be particularly troubled if they break the norms of a reference group, and those who are more driven by individualist rather than collectivist motives might be expected to experience less guilt when deviating from socially-prescribed norms. That difference was observed in two studies of absenteeism from work by Schaumberg and Flynn (2017). They predicted from the positive value placed by colleagues and superiors on attendance in a work-role that job satisfaction would be more strongly associated with low absenteeism among workers who were less prone to guilt than among those who were more guilt-prone. Full-sample

correlations in the two studies between job satisfaction and subsequent absenteeism were found to be around zero, but in both cases the predicted interaction was statistically significant. At lower levels of guilt-proneness, personal feelings were more associated with attendance behavior than among guilt-prone individuals.

Bowling (2007) emphasized the role of personality characteristics, drawing on earlier meta-analyses to show that associations between job satisfaction and task performance are reduced after the introduction of Big Five traits such as conscientiousness, extraversion, and neuroticism, and after separate inclusion of core self-evaluations and organization-based self-esteem. However, as he pointed out, the satisfaction-performance correlation 'remained statistically significant after employee personality was controlled' (p. 177).

Other personal attributes might also contribute to this pattern. For instance, impaired health reduces the number and kind of options that are available to a person, and individual differences in skill level can overwhelm any possible importance of variation in wellbeing. Similarly, certain personal value and motivational systems are likely to have a wide-ranging impact on links between wellbeing and performance. For example, workers who wish to avoid excessively stressful inputs from their job, perhaps more valuing their activities outside paid work, can intentionally limit their work output ('taking it easy'), so that for them high wellbeing can be associated with moderate or even low task performance.

Reviews by Lyubomirsky et al. (2005) and others have stressed the role of social behavior and interpersonal relationships. High-wellbeing individuals tend to be more socially involved than others, and links between raised wellbeing and organizational citizenship behavior are widely found (above). Given the operation of norms of reciprocity, such that help given to others is accompanied by help in return (e.g., Bowling, Beehr, Johnson, Semmer, Hendricks, & Webster, 2004), it is possible that correlations between wellbeing and performance are in some cases partly attributable to task assistance from colleagues (e.g., Tsai et al., 2007). Such interpersonal assistance varies between settings and is of course only possible in jobs which permit interaction and collaboration with others.

Steers (1975) drew attention to the possibility that workers with higher need for achievement are likely to more strongly value the successful attainment of job objectives, so that for them high task performance would be especially strongly linked with job satisfaction. In a study of office staff, he found that supervisor-rated performance was correlated .32 with job satisfaction in the sub-set of high-need workers but only .10 among low scorers.

In overview, a small number of studies have pointed to environmental and personal variables which might influence the strength of an association between worker wellbeing and performance. Also important is the aspect of wellbeing under consideration. For example, Lawler and Porter (1967) and Slocum (1971) showed that associations with supervisor-rated task performance varied between different needs, with self-actualization satisfaction being most strongly related to performance.

Some characteristics of wellbeing also influence the magnitude of association with performance. For instance, in the few studies which examined both positive and negative indicators of affect, positive feelings have consistently been found to be more important than negative feelings, at least in respect of positive performance. In addition, the activation level of wellbeing has a particular impact on observed correlations. Only a few investigations have measured affects of both low and high activation, instead recording feelings which are all activated[16], so that much of the research literature reports significant associations between wellbeing and performance which are in fact restricted to activated forms of wellbeing. However, Warr et al. (2014) found in structural equation analyses of findings about a variety of job behaviors across six investigations that activated job feelings were substantially more strongly associated with self-reported behavior than were low-activation feelings – average path coefficients of .48 and -.17. In respect of creativity, the meta-analysis by Baas et al. (2008) contrasted more versus less activated affect, finding average correlations of .17 and .01 respectively.

Associations between wellbeing and job performance are also likely to be influenced by aspects of research design. For example, the size of observed correlations depends in part on the range of values examined. Many projects in work settings have used five-point response scales when obtaining performance ratings; that small range of scores is further truncated by the fact that few retained employees are rated as low performers. And longitudinal studies have differed in their interval between measuring wellbeing and performance, so that results from longitudinal research can vary between studies using different intervals.

In addition, evidence from earlier research does not always meet today's more rigorous methodological requirements. For example, reported comparisons between wellbeing-performance correlations among high- and low-scorers on a possible moderating variable often lack supporting tests of

statistical interaction or incorporate controls for demographic and other features. It is important now to apply current criteria to new studies in the areas outlined here.

Group-level Research

Although organizations depend heavily on the performance of individual people, recent years have seen increased attention to the operation and effectiveness of teams. This section will examine research into wellbeing and performance at the level of groups. Group wellbeing has typically been computed by aggregating individual scores, but a few studies have instead used items asking about the team as a whole (e.g., Mäkikangas, Aunola, Seppälä, & Hakanen, 2016). Occasionally, collective wellbeing has been viewed as group 'morale' – positive feelings linked to a desire to contribute to effective performance (e. g., Bowles & Cooper, 2009; Peterson, Park, & Sweeney, 2008).

Social contagion theory (Hatfield, Cacioppo, & Rapson, 1994) builds on the fact that emotions arise not only internally but also from social interaction with others; we share emotions with other people, and our own emotions are influenced by their emotions. Group-level wellbeing is thus partly the result of social exchanges as we share our work experiences with other people and are affected by the experiences of others (e.g., Barsade, 2002). In addition, individuals in a group can be exposed to common external conditions which can provoke similar affective reactions.

Convergence in groups has been shown to be affected by several moderating influences. For example, studies have pointed to the importance of stable membership and interdependence between individuals (Bartel & Saavedra, 2000), and differences between people are influenced by a person's individualism or collectivism – the preference for individual versus communal activity; collectivistic group members have been found to be more susceptible to affective influences than are individualistic members (Ilies, Wagner, & Morgeson, 2007). Drawing on social identity theory, Tanghe et al. (2010) showed across 71 teams that members' stronger identification with their group was associated with more homogeneous levels of group affect, and that members' identification with the group was correlated .33 with self-perceived task performance.

Despite a growing research interest in social dynamics, there have been relatively few investigations into links between group-level wellbeing and work performance (Barsade & Knight, 2015). In this section, we give an overview of the literature in this area, looking first at compound indicators of wellbeing and then at group affective tone.

Group-level Job Satisfaction, Job Engagement, and Other Wellbeing Compounds

In a meta-analysis of previous research into job satisfaction, Whitman, van Rooy, and Viswesvaran (2010) reported average sample-size-weighted correlations of group-level satisfaction with task performance and citizenship behavior of .29 and 34 respectively. They also recorded an average correlation between group-level job satisfaction and absenteeism of -.37, and an average of .25 with customer satisfaction. In addition, Whitman et al. (2010) found that the relationship was stronger for specific work groups than at the branch level and also in work groups with fewer than ten members. They observed that group-level associations with job satisfaction were stronger when scores within a collective were more similar to each other, emphasizing the importance for links with performance of shared rather than fragmented wellbeing. In general, more interdependent activities and experiences within a group are likely to give rise to more similar experiences.

In a sample of retail stores, Brown and Lam (2008) found a corrected mean correlation between group-level job satisfaction and customer satisfaction of .29. Furthermore, the relationship between store satisfaction and customer satisfaction was stronger at the group level than at the individual level – as confirmed in the wider examination by Whitman et al. (2010).[17] Across 328 stores, Grandey, Goldberg, and Pugh (2011) observed a significant association (r = .28) between store-level job satisfaction and customer satisfaction, and found that store busyness (the number of sales transacted) significantly reduced that association, suggesting that in busier stores employees had less time to identity and respond to customers' need for help.

Work engagement has traditionally been measured as an individual-level construct, but has also received some attention at group level (Schaufeli & Salanova, 2011). Group-level work engagement has been positively associated with supervisors' ratings of groups' task performance among office and similar workers (McClelland, Leach, Clegg, & McGowan, 2014; Torrente, Salanova, Llorens, & Schaufeli, 2012).

Similarly, among hotel and restaurant staff Salanova, Agut, and Peiró (2005) found that group-level work engagement predicted a positive service climate which in turn predicted group performance measured as service provided to customers. Gracia, Salanova, Grau, and Cifre (2013) observed that group work engagement was related to good service through staffs' greater empathy and extra assistance to customers. Extending that theme, García-Buades, Martínez-Tur, Ortiz-Bonnín, and Peiró (2016) found that group-level work engagement in hotels was positively related to service performance, measured through customer's positive reports of experience and intentions to return. The association between work engagement and service climate was reinforced by groups' high climate for innovation.

Studying 102 work-groups, Mäkikangas et al. (2016) recorded a correlation of .86 between members' perception of group-level job engagement and their perceptions of group performance. Examining possible moderation by personal job crafting (informal shaping of one's job to better meet individual needs) (e.g., Tims & Bakker, 2010), they found that crafting to increase self-development and support from others strengthened the relationship between group-level work engagement and performance.

In a study of joviality (viewed as the extent to which individuals are enthusiastic, excited, and enjoy what they do), O'Neill and Rothbard (2017) found that firefighters who worked in groups high on joviality spent less time coordinating their response to calls, so could be seen as more effective, but when outcomes were measured two months later they also had more vehicle accidents and property loss, probably because they took more risks. For low wellbeing measured as group-level emotional exhaustion, Leiter, Harvie, and Frizell (1998) found a strong negative correlation (-.73) across 16 medical units between emotional exhaustion and patient satisfaction with their care.

Group Affective Tone

This section moves on from cognitive-affective compounds to examine group wellbeing in terms of positive or negative feelings. Work-group affective tone is usually assessed through the average of members' feelings that are 'consistent or homogeneous' (George, 1995, p. 108; George & King, 2007, p. 98). Research has pointed to moderate associations between group affect and aspects of performance. For example, the positivity of group affective tone has been shown to be significantly associated with self-perceived group performance (Tanghe et al., 2010) and with specific behaviors such as group coordination (Sy, Côté, & Saavedra, 2005) and cooperation (Barsade, 2002). Totterdell (2000) described how collective mood in cricket teams was related to individual players' match performance, and Hmieleski, Cole, and Baron (2012) reported that the performance of new venture companies is better when group affective tone is more positive. Across 26 work-groups George (1995) found that negative aspects of group affective tone were associated with poorer self-rated customer service 'in your work group', but correlations with positive affective tone were not significant.

Negative group tone has been linked to lower levels of citizenship and customer service behavior by George (1990); and Cole, Walter, and Bruch (2008) found that more negative group moods in manufacturing work groups were related to poorer performance as rated by supervisors. Examining possible moderators of this relationship, Cole and colleagues (2008) found that the inverse relationship between group-level negative tone and performance was weaker when group members' nonverbal behavior was openly negative towards each other.

The meta-analysis by Knight and Eisenkraft (2015) suggested that when negative group affect stemmed from a source outside the group, groups with more negative affect were better performers, possibly because external threats make group members coordinate their actions and direct attention towards tackling that threat. On the other hand, when the source of a negative group tone was internal to the group (such as unpleasant interpersonal behavior), more negative affect was related to poorer group performance, possibly because negative feelings in that case are associated with members viewing the group in a negative light or because the source of the negativity has not been modified (Knight & Eisenkraft, 2015).

Knight (2015) explored the importance of group affective tone during different phases of a project in military teams on training exercises, and found that a shared positive mood at the middle of the project, but not at other stages, was related to better group performance, as group members were more focused on their collective task. On the other hand, a shared negative mood hindered team performance, as members continued to explore alternative ideas even as the deadline for the project drew nearer. Stephens and Carmeli (2016) found that groups in which members felt able to express negative emotions reported better group performance, that was associated with greater adherence to project budgets and increased knowledge-sharing.

Group affective tone has also been considered in relation to creativity. Barsade and Knight (2015)

drew attention to the possibility that positive group affect can enhance creativity because group members who share positive feelings and associated ideas may collectively become better at innovation and problem solution. However, Tsai, Chi, Grandey, and Fung (2012) failed to find that relationship with group creativity. They observed that in groups where interpersonal trust was high a positive group affective tone was related to *lower* creativity, and suggested that this atypical finding could be explained in terms of group-centrism (George & King, 2007): If group members trust each other, they are more likely to gravitate towards to the center of expressed opinions and to reject novel ideas and suggestions, thus reducing the group's creativity.

In addition to average wellbeing, the diversity in affect between members is important. For example, Barsade, Ward, Turner, and Sonnenfeld (2000) found that, where members' affect in senior management groups was more varied, the groups performed less well, perhaps because of more internal conflict and reduced cooperation. George and King (2007) argued that homogeneity in group members' affect is likely to be most beneficial when tasks are routine and when homogeneity encourages a single appropriate shared reality. On the other hand, some between-person heterogeneity in feelings can be particularly desirable in complex or novel tasks to promote multiple perspectives and associated suggestions for action.

Some Desirable Research Developments

The two-variable possibility that happy workers are more productive than others has long attracted researchers and the general public, and no doubt will continue to do. However, it is important also to look beyond those two variables on their own. Most behaviors have multiple causes, and a person's wellbeing is usually only one of many possible influences. Models and empirical studies of wellbeing and performance should therefore also include other continuing or transient conditions, in the environment and/or within the person. Inputs from a job situation (task demands, supervisor behavior, the availability of feedback, relations with colleagues, etc.) and from within-person variables, such as values, traits, health, and task-relevant ability, may contribute to observed patterns as 'third' variables which are often unmeasured in studies of wellbeing and performance. A primary research need in this area is thus for the conduct of multiple-variable investigations to broaden the focus beyond wellbeing and performance alone. For example, does measured wellbeing account for additional variance in task performance over and above specified job conditions?[18]

Another pressing need is for increased attention to possible moderator variables. In what circumstances is the association of behavior with an investigated form of wellbeing likely to be higher or lower? As summarized above, a small number of studies have examined this question, but research in earlier decades can sometimes be questioned on methodological or conceptual grounds. Furthermore, published moderator studies tend to be disconnected from each other, lack replication, and be conducted in the absence of overarching theories. It is essential to place new moderator research in a conceptual framework which includes other variables which can influence the strength of an association.

Some studies should focus on sets of individual workers. The happy-productive worker hypothesis expects people on average to be either happy and productive or unhappy and unproductive, but the fact that observed positive correlations are only moderate indicates that many workers do not fit that pattern. We need to learn more about individuals who are outside the hypothesized pattern. Recognizing that, Ayala et al. (2016) used data from a study of young employees to place workers in one of four categories: happy and productive, unhappy and unproductive, happy and unproductive, and unhappy and productive. Indicators of the two variables were job satisfaction and self-reported job innovation, and almost 15% of the sample fell outside the two groups expected by the hypothesis; around 9% were classified as unhappy and productive, and about 5% were defined as happy and unproductive. Average levels of educational qualification, proactivity and job self-efficacy were found to differ between sets of workers. Further research along these lines is now desirable, investigating additional measures of wellbeing and performance and identifying situational and personal features associated with membership of each cluster.

Moderators require particular attention at the work-group level. Research questions and methods have differed considerably between studies of group wellbeing and performance, and we need to learn whether principal differences have affected findings. For instance, what is the impact of group size on associations between wellbeing and performance? Tanghe et al. (2010) studied work-groups containing two to four workers, but those examined by Mäkikangas et al. (2016) had four or more members; George (1990) investigated as groups people who worked for the same departmental manager. We do not know whether size differences of that kind are influential. Also potentially important are dimensions of task complexity and uncertainty. Perhaps in routine work effectiveness is more linked to homogeneous positive affect, whereas more complex and uncertain tasks are better performed by groups with more diverse

wellbeing. 'Group-think' is likely to be especially dangerous in uncertain and unpredictable conditions (e.g., George & King, 2007).

Behavior of all kinds is sometimes brought about by external pressures which generate unhappiness as well as action. When provoked into action by physical, economic, or social threats, people can experience low wellbeing but generate behavior which is effective; 'necessity is the mother of invention'. Occupational research needs to identify situations of this kind and trace extra- and intra-person developments across time. Zhou and George (2001) focused on job creativity, and showed that job dissatisfaction was associated with greater creativity when continuance commitment (a perceived need to remain in post) was accompanied by support for creativity from a worker's colleagues and organization. These and associated ideas about the occurrence of zero or negative correlations between wellbeing and performance now deserve further investigation.

A general requirement is for additional qualitative research in this field, through interviews, observation, group discussion, video-recording, analysis of company records, and similar procedures. In many cases, particular behavior sequences can embody both negative and positive experiences, as a problem first generates strain when solutions are sought and applied and then yields satisfaction or pleasure after progress has been made. Many personal projects, in a job and elsewhere, are of that threat-then-resolution kind, and these are poorly served by current research approaches.

Two research designs are conventional to investigate sequential possibilities. Diary studies obtain research material on several occasions across one or a few days[19], and more extended longitudinal research gathers information on discrete occasions often separated by a period of months. Time intervals have varied between different longitudinal studies, and study-specific periods of lag have rarely been justified explicitly in relation to a project's hypotheses.

It is particularly desirable to develop qualitative research across time [20] in addition to studies of those kinds. For example, partially structured interviews can be conducted on repeated occasions to learn more about perceptions of and reactions to evolving situations, possibly seeking the occurrence of self-sustaining spirals and evidence relevant to Fredrickson's 'broaden and build' developmental model (e.g., Fredrickson, 2001; Fredrickson & Branigan, 2005). That model envisages positive emotions broadening the scope of attention, cognition and action, with benefits accumulating across time. In studying possible changes of those kinds, it is desirable to explore mental processes and actions in depth through a series of detailed discussions. Similarly, qualitative investigations into processes of job crafting, as workers shape their job activities to enhance wellbeing, can benefit from personalized, continuing information-gathering.

Social contagion theories are based on individuals interpreting verbal and non-verbal cues in face-to-face interaction, but work environments increasingly involve virtual team and remote working, where direct interaction is replaced by text-based services, email, messaging, and several types of social media. In those cases, emotions and affect are communicated less directly, and it is important to incorporate that change in our research methods (Barsade & Gibson, 2007). Does the development of group affective tone differ between face-to-face and virtual groups?

Research in this field has usually measured group affective tone as the average of individual scores, and the conceptual and methodological bases and implications of this procedure also need examination (van Mierlo, Vermunt, & Rutte, 2009). It is important to examine the degree of heterogeneity between different group members (e.g., Barsade et al., 2000; Bliese, 2000; Cole, Bedeian, Hirschfeld, & Vogel, 2011; George & King, 2007), perhaps in terms of measured variance in individual scores, the number of extreme-scoring members, or average deviation from the overall mean (Burke & Dunlap, 2002)[21]. For example, it is likely that a small number of individual group members who are in a particularly negative mood have an overall disruptive impact on processes within the group (Felps, Mitchell, & Buyington, 2006). Other methodological studies should compare the factor structure of compound indicators between individual and group levels (van Mierlo et al., 2009).

It is also important to expand thinking about the concept of wellbeing. Traditionally, research has examined hedonic forms of the kind illustrated in this chapter, but it is possible also to envisage additional aspects which are loosely based on Aristotle's (384-322 BC) ideas of 'eudaimonia' – a good, virtuous or fulfilled life. This notion has been developed by some psychologists into wellbeing as personal 'flourishing', variously considered by different scholars to embrace an active engagement in the world, experienced meaning or purpose in life, autonomous self-regulation, perceived competence in personally important activities, having vitality, and relating positively to others (e.g., Baumeister, Vohs, Aaker, & Garbinsky, 2013; Huta & Waterman, 2014; McGregor & Little, 1998; Ryff, 1989; Seligman, 2011; Waterman, 2008). As an aspect of wellbeing beyond traditional hedonic indicators, flourishing deserves more attention in the area of this chapter. For instance, for workers who flourish in terms of a high sense of

personal accomplishment in their work, a strong association appears likely between job performance and that aspect of wellbeing. Previously applied hedonic measures of worker wellbeing do not cover all of that construct, and flourishing should be included in future studies.

Another desirable research development is an increased concern for non-linear relationships between wellbeing and performance (e.g., Tenney et al., 2016). For example, a curvilinear pattern might reflect the fact that above a moderately high level of wellbeing the two variables are negatively rather than positively associated with each other, parallel with Warr's (2007, 2017) Vitamin Model. Or perhaps job performance is not associated with wellbeing across higher levels of wellbeing, but the two are positively intercorrelated at low to moderate levels.

Academic research into possible influences on wellbeing and performance has failed to investigate practical processes of their joint optimization. Concern has often been directed at enhancing either wellbeing or performance, but rarely at improving the two together. There is now a great need for research into the processes and outcomes of interventions in work settings which are aimed to enhance both of them, rather than merely one alone. For example, interventions in terms of self-management training can build mental effectiveness in goal-setting, self-assessment and self-evaluation (Frayne & Geringer, 2000) in addition to improving task performance. These changes can yield personal rewards and positive experiences, linked to reduction in anxiety, improvement in mental health, and perhaps to improved job wellbeing (Richardson & Rothstein, 2008).

At the group level, social support and collective job crafting have been found to be associated with wellbeing and performance (Nielsen et al., 2017), and interventions to increase mutual support or collective job crafting may yield increases in both wellbeing and performance. Such interventions aim to increase resources widely within a group through knowledge-sharing, helping behaviors, and working towards overall group benefits, rather than merely gains for an individual. Whereas one individual worker's job crafting may have consequences which are negative, for instance from avoiding disliked tasks or competing with colleagues for activities which are most interesting, explicitly collective job crafting can be of wider benefit to the work-group as a whole, in terms perhaps of both wellbeing and performance.

Speculation about Cause and Effect

The chapter opened by noting that a positive association between worker wellbeing and job performance is widely expected. Subsequent sections have shown that across principal forms of wellbeing and performance the association is indeed positive, although it is small and depends on the operation of moderating factors.

We have stressed that it is not appropriate to draw conclusions about causal processes from the evidence presented here. Firmly controlled experiments are required, but those have proved impossible within organizations, which must maintain their financial viability throughout the months or years of an experimental period. In any case, the limited experimental control which might be achieved is insufficient to rule out the impact of potential 'third variables', which can be responsible for observed associations between wellbeing and performance even despite statistical control of a limited number of variables. Although cross-sectional and longitudinal research are both important to map out a current or extended situation, they cannot provide the basis for causal interpretation.

Nevertheless, positive findings from laboratory experiments indicate clearly that changed wellbeing can modify behavior in the short term. Short-term experiences and activities are essential building-blocks of longer-term wellbeing, as multiple short-term feelings become aggregated across time, repeatedly recalled, and perhaps elaborated (e.g., Diener et al., 1999; Fisher, 2000; Kim-Prieto et al., 2005): life satisfaction is based on thousands of earlier short-term experiences stretching across years. Furthermore, positive wellbeing tends to be associated with traits of optimism, confidence, sociability and other dispositions which encourage goal-orientation and active involvement in situations which can themselves generate wellbeing. In subjective terms, personal experiences suggest to many people that wellbeing can sometimes make a difference to their job performance, as they observe how their positive or negative moods appear to be shaping their behavior. Both conceptual argument and personal introspection thus argue for some causal impact from wellbeing.

Many perspectives and decisions in daily life are based on imperfect evidence, and in those terms it is our belief that wellbeing does often influence performance. However, this influence can be relatively small, other variables are also causally important, and causality may run in other or multiple directions.

Footnotes

[1]Although the term 'work' often refers to a job, it is widely used in other settings – in respect of housework, social work, voluntary work, and so on. Researchers differ in their use of either 'work engagement' or 'job engagement'.

[2]In practice, that conceptual distinction is not always maintained in scales used to measure satisfaction, which can include items reflecting activated positive reactions rather than mere acceptance.

[3]The label 'performance' is usually applied to behaviors of a particular kind – those which are considered important and desirable within the investigated setting, in this case behaviors which are desirable in a job.

[4]Correlations with job satisfaction and job engagement were very similar between supervisor-, colleague- and self-ratings of task performance in research by Halbesleben and Wheeler (2008). For job engagement, Christian et al. (2011) reviewed the few available associations with task performance and organizational citizenship. Mean correlations across the two types of performance together were .31 for self-reports and .29 for other-reports. For emotional exhaustion, Mastenbroek, Jaarsma, Scherpbier, van Beukelen, and Demerouti (2014) found correlations with task performance of -.19 and -.18 respectively.

[5]Their two data-sets were very similar.

[6]Measured for example by 'I feel emotionally drained by my work'.

[7]However, longitudinal affect-behavior associations were generally non-significant in these studies.

[8]We are grateful to Wei-Chi Tsai for the unpublished information that mood ratings were context-free since participating sales agents can work at any time of day.

[9]A high proportion of publications fail to provide precise details of when information was collected. It appears that in most cases (apart from in longitudinal studies) behavior has been investigated through information about a period (often of unspecified duration) in the past. Analyses of cross-sectional findings therefore often concern current wellbeing in relation to behavior at an earlier time.

[10]In part, the smaller size of longitudinal associations might be attributed to the duration of interval between measurement of the two variables, since correlation sizes are found to be smaller as time lag increases (e.g., Riketta, 2008).

[11]'Third' variables in the sense that they are additional to the two in a bivariate study. Taking a now-unfashionable behaviorist view, Skinner (e.g., 1969) argued that feelings are mere accompaniments of behavior, and that both are the products of common environmental variables.

[12]However, knowledge often expands through the accumulation of slightly different sets of findings, each of which lacks some important controls but which as a whole widen the possible confounds that have been held constant.

[13]Although these processes are desirable in many job situations, that is not always the case. For instance, more rapid mental activities often rely on the use of simple heuristics which can be inappropriate in many detailed tasks.

[14]On the other hand, negative manipulations have resulted in more variable outcomes (e.g., Davis, 2009).

[15]This comparison may be confounded by the use of different indicators of performance – supervisor-ratings for managers and actual output for non-managers.

[16]The chapter's account of affect studies has sometimes described a measure as 'activated', although activation level was not explicitly discussed in the published report. In those cases, the 'activated' label has been applied after studying the items presented in the source publication.

[17]One possibility is that measurement reliability is increased by aggregating individual scores.

[18]Several variables treated in one publication as correlates of performance in addition to wellbeing might for different purposes also be viewed as mediators (e.g., Tenney et al., 2016).

[19]However, diary studies have rarely focused explicitly on within-person changes during their period of study.

[20]Qualitative approaches can also be justified on wider grounds as well as in this particular respect (e.g.,

Pratt & Bonaccio, 2016).

[21]Researchers into organizational culture have emphasized the notion of culture 'strength' – the level of agreement between members of an organization (e.g., Schneider, Ehrhart, & Macey, 2013).

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