

Why do lay people believe that satisfaction and performance are correlated? Possible sources of a commonsense theory

CYNTHIA D. FISHER*

School of Business, Bond University, Gold Coast, Queensland, Australia

Summary

Decades of research have shown that the correlation between job satisfaction and job performance is modest in magnitude, yet lay people are thought to believe strongly that satisfied or 'happy' employees are more productive at work. This paper first documents the strength and pervasiveness of belief in several versions of the happy-productive worker hypothesis (Study 1), then proposes and explores potential substantive explanations for these beliefs (Study 2). It is possible that lay people base their beliefs on genuinely stronger relationships that occur at a different level of analysis than usually studied by researchers, and/or that exist between satisfaction-like and performance-like variables other than the constructs typically investigated by scholars. Study 2 provides data relevant to several of these possibilities. The most compelling findings were at the within-person level of analysis. The average within-person correlation between momentary task satisfaction and concurrent perceived task performance was 0.57. Individuals feel more satisfied than usual when they believe they are performing better than usual for them. If lay persons mistakenly generalize from their own within-person experiences of satisfaction-performance covariation to the between-persons level, this relationship may be the basis for the strong lay belief that satisfied workers perform better. Copyright © 2003 John Wiley & Sons, Ltd.

Introduction

The search for a relationship between job satisfaction and job performance has been referred to as the 'Holy Grail' of organizational behavior research (Weiss & Cropanzano, 1996). The relationship (or lack thereof) has fascinated organizational scholars for decades. From the Human Relations Movement in the 1930s through Herzberg, Mausner, and Snyderman's classic work (1959), there was a feeling that improving employee morale should result in higher productivity. In the 1970s the causal story was reversed. Employees who performed better were expected to be more satisfied if and because they received greater rewards (Lawler & Porter, 1967). However, study after study failed to produce the

* Correspondence to: Cynthia D. Fisher, School of Business, Bond University, Gold Coast, QLD 4229, Australia.
E-mail: Cynthia_Fisher@Bond.edu.au

Contract/grant sponsor: Australian Research Council; contract/grant numbers: A79801016; A00104726.

Table 1. Empirical reviews of the relationship between overall job satisfaction and overall job performance

Review	Satisfaction variable	Number of correlations	Number of respondents	Uncorrected mean correlation	Corrected mean correlation
Vroom (1964)	Overall job satisfaction	15	3 333	0.14	—
Petty, McGee, and Cavender (1984)	Overall job satisfaction	20	3 140	0.23	0.31
Iaffaldano and Muchinsky (1985)	JDI and MSQ overall satisfaction	9	1 534	0.25	0.29
Iaffaldano and Muchinsky (1985)	Other global satisfaction measures	54	5 472	0.16	0.19
Podsakoff and Williams (1986)	General satisfaction, field studies	97	13 703	0.18	—
Judge, Thoresen, Bono, and Patton (2001)	Overall job satisfaction	312	54 471	0.18	0.30 ^a

^aCorrected for sampling error, internal consistency unreliability of satisfaction, and inter-rater unreliability of performance.

expected strong relationship. Table 1 summarizes the findings of the major empirical reviews of the job satisfaction–job performance relationship. While the reviews differ in comprehensiveness and meta-analytic technique, the story told by the mean uncorrected correlations is quite consistent—the average observed relationship between overall job satisfaction and performance is positive but relatively weak, in all cases between 0.14 and 0.25. The most comprehensive review (Judge, Thoresen, Bono, & Patton, 2001) found an average uncorrected value of 0.18 across 312 correlations.

Managers and lay people are thought to believe in what has been called the ‘happy–productive worker hypothesis’ (Kluger & Tikochinsky, 2001; Ledford, 1999; Staw & Barsade, 1993). That is, they are alleged to believe that employees who are happier or more satisfied with their jobs will also be better performers on those jobs. Teachers of organizational behavior frequently encounter this belief in their students, though to my knowledge empirical evidence for the pervasiveness of this ‘common-sense theory’ has not been published. Thus, the first study in this paper assesses the extent to which various beliefs about satisfaction–performance relationships are held in three diverse samples. If individuals are indeed found to strongly endorse statements that feelings or attitudes covary with work performance, it will be necessary to attempt to explain why lay perceptions are so different from research findings. The second study in this paper provides empirical evidence relevant to several such explanations.

Organizational Setting

Study 1 Context

The three samples in Study 1 intentionally varied in terms of nationality, work experience, and age. Individuals in the first sample were experienced managers or supervisors in upscale hotels carrying a single well-known global brand name. Human resource practices such as contingent reward would have varied across the countries (Brunei, Fiji, Malaysia, Australia, Bangladesh, Indonesia, Thailand, and New Zealand) in which they were employed as a function of local regulations and expectations. Samples 2 and 3 contained students studying in Australia and the United States

respectively, in a number of majors, at postgraduate and undergraduate levels, possessing quite different levels of work experience, and hailing from a number of home countries. The widespread agreement that happiness and performance go together in each of the three samples suggests that this is a very widely shared view, at least among those fluent enough in English to be in the samples. The data were collected in 1995 (sample 1) and 2001 (samples 2 and 3).

Study 2 Context

All participants were employed full-time and were working in or around the Gold Coast, in south-east Queensland, Australia. A wide variety of industries and occupations were represented, with 31.9 per cent of respondents describing their occupation as 'clerical,' 23.5 per cent as 'manager,' 21.8 per cent as 'professional,' 8.4 per cent as 'sales,' 7.6 per cent as 'supervisor,' 4.2 per cent as 'skilled trade,' and 2.5 per cent as 'laborer.' Performance-contingent payment is not generally common in Australia, which may have contributed to quite weak between-persons job satisfaction to job performance correlations. Australia is widely regarded as having a weaker work ethic than the United States. According to Renwick (1991, p. 37), 'Australians consider work to be a bloody nuisance and therefore do as little of it as slowly as possible . . . People who work hard are as likely to attract suspicion as praise.' It is possible that within-person correlations between task satisfaction and momentary performance would be even stronger in U.S. or Japanese samples, where the culture emphasizes gaining personal fulfilment through work accomplishments. The data were collected in the latter half of 1996.

Study 1

The purpose of Study 1 was to explore and document the degree of endorsement of a variety of statements of the happy-productive worker hypothesis. A survey of opinions about relationships between satisfaction/happiness and performance was conducted in three samples. The survey consisted of six items written to reflect somewhat different conceptualizations of what it meant to be happy or satisfied and two levels of analysis. Questions at the between-persons level of analysis were statements to the effect that individuals who were happy/satisfied/liked their jobs more were likely to be better performers than individuals who were unhappy/dissatisfied/liked their jobs less. This is the level at which virtually all past research on satisfaction-performance relationships has been conducted. However, it is also possible that a relationship between happiness/satisfaction and performance occurs at a lower level of analysis. The relationship may exist within-person over time if individuals are more satisfied or happy than usual during times they are performing better than usual, and less satisfied or happy during times they are performing below their usual level. Questions at the within-person level of analysis refer to more transient relationships between task enjoyment, experiencing good feelings, or being in a good mood and performance on the immediate task.

The survey was administered in three samples that intentionally varied on professional background, nationality, and extent of work experience. Respondents indicated their level of agreement with each statement. As belief in the happy-productive worker hypothesis is thought to be widespread, the hypothesis was that respondents in all samples would indicate significant agreement with all or most of the statements. Differences in endorsement between alternative statements of the happy-productive worker hypothesis and differences in endorsement between samples were assessed on an exploratory basis.

Study 1 Method

Samples

Members of all three samples were participating in a university course when surveyed, but none had yet been exposed to teaching content related to the satisfaction–performance relationship. Sample 1 was made up of 176 supervisors and managers in a major hotel chain in Australasia. Participants were attending an undergraduate course in organizational behavior sponsored by their employer and offered on-site at multiple hotels within the region. Sixteen nationalities were represented among the respondents, with the largest group (44 per cent) being Australian. Sixty-three per cent of the sample was from English-speaking western countries (Australia, the United Kingdom, New Zealand, Canada, and the United States), with the remainder largely from Asian nations. Sixty-one per cent of respondents were male. Respondents averaged 13 years of full-time work experience.

Sample 2 was made up of 106 first-year undergraduate students at an international university located in Australia. Students were enrolled in an introduction to business course that is compulsory for all students in the university. Fifty-one per cent of the sample was male. Thirty-nine per cent of respondents were business majors, 23 per cent were humanities/social sciences majors, 15 per cent were information technology majors, 10 per cent were law majors, and the remaining 13 per cent were undecided. The median age of the sample was 20 years. Sixty-five per cent of respondents had no full-time work experience and 12 per cent had not worked at all. National backgrounds varied, with 43 per cent of participants being from English-speaking Western countries, 26 per cent from continental Europe, 27 per cent from Asia, and 4 per cent from other regions.

Sample 3 consisted of 156 engineering (42 per cent) and business (58 per cent) students at a U.S. public university. Seventy-seven per cent of respondents were male and 70 per cent were graduate students. Participants had an average of 4 years of full-time work experience (2.5 per cent had no work experience, 29 per cent had only part-time work experience, and 68.5 per cent had full-time work experience). Eighty-three per cent were North American, 9 per cent were Asian, 5 per cent were European, and 3 per cent were from elsewhere.

Measures

Participants were asked to respond to six statements of possible relationships between feelings and performance using a seven-point Likert scale. All scale points were anchored, with 1 being ‘strongly disagree,’ 4 being ‘not sure,’ and 7 being ‘strongly agree.’ Items 1, 3, and 5 were statements of the typical between-persons hypothesis that stable employee attitudes are related to stable employee performance. These items were, ‘A happy worker is likely to be a productive worker,’ ‘Those who dislike their jobs tend to perform badly at work,’ and ‘Employees who are satisfied with their jobs are usually good performers.’ Items 2, 4, and 6 were about more transient relationships between feelings and performance at the within-person level. The items were, ‘I generally work harder and perform better on tasks I enjoy than on tasks I dislike doing,’ ‘I get a good feeling when I do a work task competently and effectively,’ and ‘I do my job better when I’m in a good mood than when I’m in a bad mood.’ Note that these items were intended to stand alone rather than be combined into a homogeneous scale, as they reflect quite different ideas about how, when, and why satisfaction and performance might covary.

Study 1 Results and Discussion

Table 2 provides descriptive statistics on responses to the six items for each sample and the combined samples. In all samples, a clear majority of respondents agreed with each statement. *t*-Tests confirmed that the mean response to each item in each sample was significantly greater ($p < 0.001$) than the neutral value of '4' (not sure) on the response scale, so the hypothesis was supported. Further, agreement with statements was often quite strong, with 7 out of 18 means falling between 6 (agree) and 7 (strongly agree). It appears that the belief that feelings (satisfaction, happiness, momentary good feelings, or mood) are related to performance is firmly and widely held.

A 3 (samples) by 6 (items) repeated-measures analysis of variance showed that there were significant differences across samples ($F = 3.38$, d.f. = 2, $p < 0.05$) and across items ($F = 90.30$, d.f. = 5, $p < 0.001$). The interaction term for samples by items was also significant ($F = 26.14$, d.f. = 10, $p < 0.001$), indicating that different groups of people endorsed different items with differing strengths. One-way ANOVAs on each item and post hoc tests were used to locate the ways in which samples responded differently to the same item. The samples differed on all items but number 5 ('Employees who are satisfied with their jobs are usually good performers'). For four of the five items on which samples differed, the only significant differences ($p < 0.05$) were between full-time employed individuals (sample 1) and the two student samples, which did not differ from each other. On questions 2 and 6, hotel supervisors and managers felt that their performance was less dependent on task liking or current mood than did students. Perhaps managers and supervisors are more disciplined or better incentivized, so are more likely to get tasks done regardless of their feelings. Managers and supervisors were significantly more certain than students that they got a good feeling when performing a task competently (item 4), though this statement was very strongly endorsed in all samples, with 98.4 per cent of the 438 respondents indicating agreement. Finally, managers and supervisors were significantly more certain than students that individuals who disliked their jobs tended to perform badly (item 3).

In sum, Study 1 showed that all statements of the happy-productive worker hypothesis tested were strongly endorsed in three diverse samples. Both within-and between-persons statements attracted considerable support. Students and managers and supervisors from a variety of national and cultural backgrounds believed that more positive feelings (mood, happiness, or job satisfaction) were associated with better performances. The pervasiveness and strength of these beliefs seems at odds with empirical results showing considerably more modest relationships between job satisfaction and job performance as typically investigated by researchers. The rest of this paper will suggest and explore some possible reasons for lay person beliefs.

Possible Sources of Lay Belief in the Happy-Productive Worker Hypothesis

Kluger and Tikochinsky (2001) list several reasons why a lay belief or 'commonsense theory' specifying a strong relationship between two variables may have some basis in fact even though scientific research has thus far failed to support a strong association. One of these explanations is that lay people may be aware of a strong relationship at a higher or lower level of analysis, or at a longer or shorter time span, than that usually investigated by scholars. In the present case, momentary mood and momentary task satisfaction may covary more strongly with immediate task performance within-person over time than the more stable constructs of job satisfaction and job performance covary

Table 2. Opinions of three samples regarding statements of the happy-productive worker hypothesis

	Sample 1			Sample 2			Sample 3			All Samples		
	Mean	SD	Agree	Mean	SD	Agree	Mean	SD	Agree	Mean	SD	Agree
<i>Between-persons statements</i>												
1. A happy worker is likely to be a productive worker.	6.39	0.89	96.6%	5.16	1.5	75.5%	6.22	0.97	96.8%	6.03	1.20	91.6%
3. Those who dislike their jobs tend to perform badly at work.	5.48	1.28	85.2%	4.94	1.41	70.5%	4.95	1.40	69.2%	5.16	1.38	76.0%
5. Employees who are satisfied with their jobs are usually good performers.	5.71	1.31	87.5%	5.39	1.43	77.3%	5.62	1.02	90.4%	5.60	1.25	86.1%
<i>Within-person statements</i>												
2. I generally work harder and perform better on tasks I enjoy than on tasks I dislike doing.	5.62	1.43	86.9%	6.11	1.19	91.5%	6.29	0.94	97.4%	5.98	1.25	91.8%
4. I get a good feeling when I do a work task competently and effectively.	6.74	0.45	100.0%	6.34	0.83	96.2%	6.45	0.75	98.7%	6.54	0.69	98.4%
6. I do my job better when I'm in a good mood than when I'm in a bad mood.	4.65	1.76	64.8%	5.85	1.26	87.7%	5.69	1.22	87.8%	5.31	1.56	78.5%

between persons. This would be consistent with the very strong endorsement of item 4 ('I get a good feeling when I do a work task competently and effectively') and moderate endorsement of item 6 ('I do my job better when I'm in a good mood than when I'm in a bad mood') in Study 1. This idea will be discussed further later in the paper and addressed empirically in Study 2.

Kluger and Tikochinsky's (2001) second explanation for why an apparently unsupported commonsense theory could be correct suggests that the relationship between two constructs may have been tested using a limited set of operationalizations of the constructs. The relationship between those operationalizations may indeed be weak, but a stronger relationship may exist if different operationalizations of the same or similar constructs were tested—operationalizations that better parallel lay persons' informal and perhaps looser definitions. In the current case, there are arguments that both satisfaction and performance may be defined differently by lay people than by researchers, and that these alternative definitions may produce stronger relationships (Fisher, 1980; Judge et al., 2001). Lay persons might have observed strong relationships between roughly 'satisfaction-like' and 'performance-like' variables and formed their beliefs accordingly. Later in this paper, several alternative definitions will be explored conceptually and empirically. If evidence can be found that relationships are substantially stronger when an alternative level of analysis or alternative constructs are invoked, then these relationships may be a plausible source of the commonsense theory.

Within-Person Satisfaction and Performance Covariation

Respondents in Study 1 believed that momentary good feelings, positive mood, and task enjoyment were associated with greater concurrent task performance. A number of well-established theories agree that momentary feelings and momentary performance should be related. Some of these theories argue that positive feelings cause improved performance, while others contend that believing one is performing well causes positive feelings. Respondents in Study 1 agreed with statements of both causal directions.

A substantial body of research in social psychology shows that individuals who are artificially put into a positive mood often perform better on creative tasks, interpersonal tasks, negotiation tasks, and some problem-solving tasks, and perform more quickly on decision-making tasks (Ashby, Isen, & Turken, 1999; Isen, 1999). Thus it is possible that positive mood could have facilitative effects on the performance of work tasks. However, the effects of induced positive moods on performance have been found to be complex and not uniform across tasks (cf. Aspinwall, 1998; Forgas, 2001; Martin & Clore, 2001), casting doubt on the argument that positive mood always improves performance. Forgas and George (2001, p. 7) note that 'Different information processing strategies can magnify, eliminate, or even reverse the effects of transient mood on thinking and behavior.' Nevertheless, the average impact of positive mood on task performance across the many types of tasks present in a typical job is probably more likely to be facilitative than harmful.

The case for the other causal direction, that momentary perceived task performance causes concurrent feelings of task satisfaction, task liking, or positive mood, is more robust. Believing that one is performing a task well or poorly should have affective consequences for employees who care about doing well at work (Pekrun & Frese, 1992; Weiss & Cropanzano, 1996). In fact, false positive feedback about task performance is often used to induce positive moods in laboratory research (Isen, 1999). Decades of goal-setting research demonstrate very clearly that performance compared to goals is a strong predictor of concurrent feelings about the task. People are more satisfied with their performance and report liking a task more when they are told they have performed well against goals than

when they fail to reach goals (Locke, Cartledge, & Knerr, 1970; Locke & Latham, 1990). Control theory suggests that negative feelings occur when performance is perceived to fall below a desired standard, or when the rate of progress toward a standard is less than anticipated. Positive feelings occur when performance or the rate of progress toward a standard is perceived to be above expectation (Carver & Scheier, 1990; Hsee & Abelson, 1991). Alliger and Williams (1993) reported that perceived momentary goal progress was a significant predictor of concurrent task enjoyment, while Totterdell (1999) found that the mood of professional cricket players was significantly correlated with their subjective and objective performance across periods of play. Thus, there is considerable reason to expect a strong within-person relationship between momentary positive feelings and concurrent perceived performance. To parallel the above causal positions, momentary positive feelings will be operationalized in two ways: (1) momentary mood, and (2) momentary satisfaction with regard to the specific task being performed.

Hypothesis 1a: The average within-person correlations of momentary mood and momentary task satisfaction with momentary task performance will be positive and significantly different from zero.

Further, it is likely that within-person relationships between momentary feelings and performance will be stronger than between-persons correlations between job satisfaction and job performance, for several reasons. First, as shown in Table 1, average satisfaction–performance relationships at the between-persons level tend to be rather weak. Second, there is no compelling logic for *why* satisfied employees should be consistently motivated to perform better than others, especially in the absence of contingent reward practices. Rationales such as reciprocity or equity have been advanced (Organ, 1977), but the mechanism by which satisfaction with the job as a whole should result in sustained high effort and excellent performance over long periods of time is not clear. On the other hand, the hypothesized mechanisms for the within-person relationship are straightforward and convincing (e.g., control theory), and measures at the real-time level capture the phenomenon in the time frame in which causality logically should occur—performing well now causes good feelings now (or vice versa). Third, a number of individual-level factors such as job design, ability, and personality may attenuate satisfaction–performance relationships at the between-persons level by constraining variance in either performance or in satisfaction (Fisher, 1985; Heller, Judge, & Watson, 2002; Herman, 1973). Such between-persons factors are constant at the within-person level so cannot attenuate results.

Hypothesis 1b: The average within-person correlations of momentary mood and momentary task satisfaction with momentary task performance will be significantly stronger than the between-persons correlation between job satisfaction and job performance.

The next sections of this paper explore the idea that commonsense beliefs may reflect stronger relationships that exist between alternative definitions of concepts. Alternative definitions of satisfaction or happiness will be considered first, followed by an alternative definition of job performance.

Job Satisfaction versus Other Positive Feelings

Job satisfaction is a fairly stable evaluative judgment about how well one's job compares to needs, wants, or expectations. As typically measured by organizational scholars, it includes judgments of the job as a whole, possibly including multiple facets such as the work itself, pay, advancement, supervision, and co-workers. It is possible that lay people define satisfied or 'happy' employees differently than researchers define job satisfaction. For instance, lay people may see a happy worker as one who

experiences positive moods and emotions frequently *while* working, rather than one who has positive cognitive evaluations *about* the work setting. Fisher (2000) has shown that these are quite different, with the average of multiple real-time measures of moods and emotions while working being only modestly correlated with standard verbal measures of job satisfaction. There may be a whole family of positive feeling constructs that lay people view as diagnostic of being a happy/satisfied employee, and therefore presumably a productive employee. If one or more of these alternative constructs are strongly related to job performance, it may provide an explanation for lay belief in the happy-productive worker hypothesis.

Cropanzano and Wright (2001; Wright, Cropanzano, Denny, & Moline, 2002) point out that employee 'happiness' has been operationalized by researchers in a number of ways in addition to job satisfaction. For instance, to measure experienced and expressed positive emotions at work, Staw, Sutton, and Pelled (1994) used a reverse-scored workplace depression scale, self-rated happiness and energy at work, and observer ratings of frequency of smiling, laughing, and telling jokes to create a composite measure. Some researchers have broadened the concept beyond happiness at work to consider general or dispositional happiness as a potential predictor of job performance. Staw and Barsade (1993) combined self and observer ratings of cheerful enthusiasm together with a general psychological well-being scale to measure positive affective disposition as a possible correlate of performance. Wright and Staw (1999) used a different general well-being scale and also investigated the trait Positive and Negative Affectivity Scales of affective disposition as alternative operationalizations (Watson, Clark, & Tellegen, 1988).

A framework for thinking about many positive feeling states can be found in Diener's (2000) review of the concept of subjective well-being (SWB). He suggests that SWB has several components that range from purely affective to largely cognitive, and from specific domains to life as a whole. Comprehensive measurement of well-being would include online judgments of moods or emotions in real time, the overall experience of positive emotions, the relative lack of experience of negative emotions, domain-specific satisfactions (such as satisfaction with the job or with one's marriage), and global judgments of life satisfaction. While these measures tend to be correlated, they are not isomorphic. Diener's list seems helpful for the purpose of exploring lay beliefs in possible alternative definitions of satisfaction, happiness, or positive feeling states/traits as they may be related to job performance. In Study 2, four alternative measures paralleling Diener's components of SWB will be used: the mean of up to 50 reports of momentary mood at work collected over a period of 2 weeks, dispositional positive and negative affectivity rated with respect to 'one's life as a whole,' and life satisfaction.

A number of arguments for why positive feelings in some form may be related to job performance have been laid out in detail elsewhere (cf. Cropanzano & Wright, 2001; Staw & Barsade, 1993; Staw et al., 1994) but are briefly summarized here. As mentioned above, there is evidence that being in a positive mood can facilitate performance on some types of tasks. Individuals who experience more positive real-time moods or who are high on dispositional positive affectivity and low on dispositional negative affectivity should benefit from potentially performance-enhancing positive moods more often and thus may perform better. Moving beyond mood, Fredrickson's (2001) 'broaden and build' theory assigns a generally facilitative role to positive emotions of all types, through their effect on approach behavior, creativity, optimism, skill development, and resilience to stress. In the work setting in particular, it has been suggested that employees who feel and express positive emotions can mobilize more social support and assistance from colleagues (Staw et al., 1994), thus facilitating performance. Cropanzano and Wright (2001) extend Hobfoll's (1989) conservation of resources model of stress to suggest that possession of resources in the form of well-being or life satisfaction may free individuals to behave in a more creative or less defensive way at work, with consequent beneficial impacts on performance.

Arguments are also possible from the other causal direction, that good perceived job performance contributes to subjective well-being. Competence is widely regarded as one of the most important

basic needs (Harter, 1978; Sheldon & Elliot, 1999; Sheldon, Elliot, Kim, & Kasser, 2001; White, 1959), and the job is seen as a major domain in the lives of most employed adults. Thus, individuals whose competence need is met through perceived good performance at work may also report greater well-being in the form of average moods, positive affectivity, (lower) negative affectivity, and life satisfaction.

Some empirical evidence for a relationship of various measures of happiness or well-being to performance exists. Sheldon, Ryan, and Reis (1996) report that daily feelings of competence in one's three most time-consuming activities was positively related to daily positive affect and negatively related to daily negative affect. Staw and Barsade (1993) found that positive affective disposition was a significant predictor of decision performance in an in-basket test and of interpersonal performance in a leaderless group discussion. Staw et al. (1994) found that experiencing and expressing positive emotions was related to concurrent supervisor-rated performance as well as gain in rated performance 18 months later. In several studies, Wright and his colleagues found that general well-being (assessed by Berkman's, 1971 scale) was a substantial predictor of concurrent and future supervisor-rated performance, although dispositional positive and negative affectivity (assessed by Watson et al.'s, 1988 measure) did not predict performance (Cropanzano & Wright, 1999; Wright, Cropanzano, Denney, & Moline, 2002; Wright, Larwood, & Denney, 2002; Wright & Staw, 1999). While Wright has reported some quite strong correlations between well-being and performance in small samples, it is not clear that the evidence on the whole supports relationships between various measures of happiness/well-being and performance that are consistently of greater magnitude than those observed between job satisfaction and performance. However, the possibility bears investigation and will be assessed in Study 2.

Hypothesis 2a: The correlations of mean mood, positive affectivity, negative affectivity, and life satisfaction to performance will be significant. With the exception of negative affectivity, the correlations will be positive in sign.

Hypothesis 2b: The correlations of mean mood, positive affectivity, negative affectivity, and life satisfaction with performance will be stronger than the relationship of job satisfaction to performance.

Job Performance versus Organizational Citizenship

The above section proposed alternative conceptualizations for the 'happy' part of the happy-productive worker hypothesis. This section explores an alternative conceptualization of the 'productive' part that may be more strongly related to job satisfaction. As long ago as 1980, Fisher proposed that a general attitude like overall job satisfaction might be more strongly correlated with an equally broad composite criterion that included performance, attendance, retention, and minor helpful acts. The latter eventually came to be called organizational citizenship behavior, and has attracted considerable research attention as a previously ignored aspect of performance. Several scholars have emphasized a distinction between performance of the core technical duties of the job, also known as 'task performance' or 'in-role' performance, and performing 'extra-role,' 'contextual,' or 'citizenship' activities (Borman & Motowidlo, 1993; Organ & Ryan, 1995; Van Dyne, Cummings, & Parks, 1995). The latter concepts include often-voluntary acts by employees such as helping and cooperating with others at work, volunteering to perform extra duties, carefully obeying organizational rules, and displaying initiative.

Existing research on the satisfaction–performance relationship usually features ratings or objective measures of performance focusing largely on core technical or in-role duties. For the rest of this paper, I will refer to this type of measure as *job performance*. Several studies have shown that citizenship behavior is distinguishable from job performance, is noticed by managers, is important to managers, and accounts for significant variance in their judgments of the worth of employees (Allen & Rush, 1998; Borman, White, & Dorsey, 1995; MacKenzie, Podsakoff, & Fetter, 1991; Motowidlo & Van Scotter, 1994; Werner, 1994). There is some evidence that citizenship behavior may be more strongly related to satisfaction than is job performance. Organ and Ryan (1995) meta-analyzed correlations between job satisfaction and measures of organizational citizenship behavior. The average uncorrected correlation between satisfaction and the citizenship dimension of altruism was 0.24 (0.28 corrected for unreliability), while for generalized compliance it was 0.22 (0.28 corrected). When multiple dimensions of citizenship were combined into a composite measure, the mean uncorrected correlation with satisfaction was 0.38 (0.44 corrected for unreliability). Organ and Ryan concluded that satisfaction was more strongly related to citizenship than to job performance, at least in the non-managerial, non-professional samples that comprised most of their data.

A theoretical case for a relationship between job satisfaction and citizenship behavior can be built on social exchange theory (Organ, 1988) and on research showing that altruistic acts are more likely when individuals are in positive moods (Carlson, Charlin, & Miller, 1988; George & Brief, 1992). The relationship may be stronger than that between satisfaction and job performance because the execution of citizenship behaviors is relatively unconstrained (anyone can be helpful), whereas job performance may be substantially restricted by ability (Herman, 1973). Perhaps lay people have observed, correctly, that employees who appear to be satisfied are also easier to manage, more helpful, more rule-abiding, and less antisocial at work. Thus, another explanation for the persistent belief that satisfied employees are better performers may be that observers are defining performance at least partly in terms of citizenship behavior rather than solely as in-role job performance.

Hypothesis 3a: The correlation between job satisfaction and citizenship behavior will be positive and significant.

Hypothesis 3b: The correlation between job satisfaction and citizenship behavior will be stronger than the correlation between job satisfaction and job performance.

Study 2

Study 2 Method

Procedure

Study 2 used experience sampling methodology (ESM) (Alliger & Williams, 1993; Larson & Csikszentmihalyi, 1983) to prompt real-time reports of current mood, task satisfaction, and perceived task performance up to 50 times over 2 weeks. ESM allows a random sample of moments from the stream of everyday experience to be captured. The methodology is highly suitable for exploring relationships at the within-person level, particularly when the phenomena of interest are transient and routine. Such experiences leave few distinctive memory traces and thus may not be reported accurately on delayed or retrospective measures (Hufford, Shiffman, Paty, & Stone, 2001; Schwartz et al., 1999).

Robinson and Clore (2002) argue that real-time reports of affective phenomena are based almost entirely in actual momentary experience rather than being biased by memory errors or contaminated by stable beliefs about typical feelings or behavior.

Participants wore programmed alarm watches that signalled them five times each working day for a period of 2 weeks. Alarm schedules were customized to each participant's work hours, avoiding known lunch and break periods. The watches rang at different times each day, with each signal no closer than 1 hour to the previous one. Participants were instructed to respond as soon as possible after a signal. Sixty-eight per cent of signals were answered immediately and 79 per cent were answered within 2 minutes, suggesting that accurate reports on feelings and behavior at the time of the signal were likely to have been obtained. Upon hearing an alarm, respondents filled out a one-page questionnaire about their current feelings and activities. Six of the 32 items on the questionnaire were used in the present study. In the week prior to the ESM period (Time 1) and in the week after (Time 2), participants completed longer surveys containing measures of job satisfaction, job performance, citizenship behavior, dispositional affect, life satisfaction, and a number of other variables not relevant to this paper.

Participants

A consistent challenge in ESM research is recruiting participants who are able and willing to respond to signals several times each day (Csikszentmihalyi & Larson, 1992). Participants were recruited through telephone solicitation, a newspaper article and public service radio announcement, an all-staff e-mail at a small university, and in-person appeals at two hobby clubs. Once individuals had agreed to participate, they were invited to recruit additional colleagues at their place of work. Occupations included childcare worker, hairdresser, outside salesperson, retail clerk, office worker, supervisor, production worker, photojournalist, nurse, accountant, maintenance worker, bank teller, rehabilitation counsellor, professor, and manager. A total of 65 organizations were represented, with no more than 12 participants from any one organization. This diverse sample is likely to provide results that are generalizable across jobs and organizations. One hundred and twenty-four people began the study, of whom 73 per cent were female. Three individuals failed to complete the ESM period, so analyses are based on 121 respondents.

In total, 4507 responses to signals were received, but respondents were asked to omit the task-related items (current task satisfaction and task performance) if they were taking a break, socializing in a way not required by their job, or attending to personal business when the alarm rang. The 3888 reports used in the within-person analyses include all instances in which people were actively working on a job task when signaled and supplied ratings on mood, task satisfaction, and task performance. The number of such reports per participant ranged from 12 to 49, with a mean of 32 reports per person.

Satisfaction/happiness/well-being measures

Job satisfaction was measured in both the Time 1 and Time 2 surveys with the 18-item Job In General Scale (Ironson et al., 1989). Items were summed. Alpha was 0.89 on both occasions. Momentary *task satisfaction* was measured at each signal during the ESM period with one item, 'How do you feel toward the task you are doing at this time?' Responses were made on a five-point scale with anchors of dissatisfied and satisfied.

Mood was measured by an 11-point faces scale (Kunin, 1955) at each ESM signal. This was the first item on the survey, and respondents ticked the face that best represented their mood when the alarm rang, regardless of whether they were actively engaged in a work task at the time. Responses to this

item were used in two ways. Separate signal-level responses were used as the *momentary mood* measure for the within-person analyses. Ratings also were averaged across all signals to which an individual responded to provide a measure of *mean mood* at work for the between-persons analyses.

Dispositional affectivity was measured at Time 1 with the Positive and Negative Affect Scale (PANAS, Watson et al., 1988). Respondents were asked to report how they generally felt, on average, in their life as a whole. The five-point response scale ranged from 1 = not at all to 5 = extremely. Item responses were averaged, and the 10-item *positive affectivity* scale (PA) had a coefficient alpha of 0.83, while the 10-item *negative affectivity* scale (NA) had a reliability of 0.85. Finally, *life satisfaction* was measured with the five-item Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; see also Pavot & Diener, 1993). This scale was administered at Time 1 and had a reliability of 0.87. Sample items include, 'In most ways my life is close to ideal,' and 'I am satisfied with my life.' Responses were made on a seven-point Likert scale.

Performance measures

Participants rated their *job performance* at both Time 1 and Time 2 using six seven-point items. The items were designed to assess core technical or in-role aspects of performance, with individuals rating their typical quantity of performance, quality of performance, effectiveness, performance relative to the workgroup, effort, and job-related knowledge and skills. Items were summed to produce the job performance score, and alphas were 0.87 and 0.76 for the two time periods.

Citizenship behavior was assessed at Time 1 using items similar to those in Smith, Organ, and Near (1983). Respondents used a five-point scale to rate the frequency with which they performed five types of actions: volunteering to learn new tasks, helping colleagues with heavy workloads, orienting newcomers, doing extra tasks, and providing extra help to customers/outside. Items were summed, and this scale had a reliability of 0.69.

Momentary *task performance* was rated at each ESM signal on four five-point semantic differential scales. The anchors were getting nowhere—making rapid progress, bad performance—good performance, poor performance—excellent performance, ineffective—effective. These items were averaged in each time period. Alphas for the 50 signal periods were between 0.80 and 0.95.

Analyses

The 'b' parts of the hypotheses suggest that correlations using an alternative level of analysis or alternative construct definitions will be stronger than correlations between job satisfaction and job performance as typically measured. These hypotheses will be tested in two ways. First, differences between alternative correlations and the between-persons job satisfaction–job performance correlations observed in the present study will be tested. Second, differences between the alternative correlations from this study and Judge et al.'s estimate of the average uncorrected correlation between job satisfaction and job performance of 0.18 will be tested.

Results of Study 2

Descriptive statistics and correlations for the between-persons variables can be found in Table 3. Consistent with the existing literature, the concurrent correlations between job satisfaction and job

Table 3. Between-person satisfaction–performance correlations

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Job satisfaction Time 1	43.4	9.44	(0.89)								
2. Job satisfaction Time 2	43.7	9.69	0.83**	(0.89)							
3. Mean mood at work	8.0	1.19	0.33**	0.30**							
4. Positive affectivity	3.9	0.49	0.19*	0.19*	0.29**	(0.83)					
5. Negative affectivity	1.74	0.54	−0.11	−0.12	−0.27**	−0.09	(0.85)				
6. Life satisfaction	4.58	1.29	0.31**	0.24**	0.35**	0.29**	−0.26**	(0.87)			
7. Job performance Time 1	34.6	3.82	0.09	0.10	0.26**	0.42**	−0.08	0.18	(0.87)		
8. Job performance Time 2	34.2	3.37	0.04	0.04	0.15	0.33**	−0.05	0.08	0.75**	(0.76)	
9. Citizenship behavior	4.0	0.60	0.23**	0.24**	0.19**	0.41**	0.08	0.20*	0.31**	0.33**	(0.69)

σ^2 , variance within-person; $N = 121$.

* $p < 0.05$; ** $p < 0.01$.

performance were very small at both Time 1 and Time 2, and the cross-lagged correlations were also minuscule. All of the job satisfaction to job performance correlations in this study were 0.10 or below and non-significant. Certainly there is no evidence in these correlations that might lead lay people to conclude that more satisfied workers are better performers than less satisfied workers.

Hypothesis 1: within-person relationships

Hypothesis 1a suggested that strong relationships would be found for momentary mood and momentary task satisfaction with concurrent performance at the within-person level. It is first necessary to establish that mood, task satisfaction, and task performance vary significantly within-person over time. Hierarchical linear modeling (HLM; Bryk & Raudenbush, 1992) was used to conduct one-way ANOVAs with random effects on momentary mood, task satisfaction, and task performance with person as the level 2 experimental unit (Table 4). This procedure partitions total variance into between- and within-person variance components. Both components were significant for all three variables, confirming that while some people say they have better moods and higher task satisfaction and task performance than others on the whole, individuals also vary considerably from moment to moment on these indicators. Specifically, 59 per cent of the variance in momentary mood was within-person, 76 per cent of the variance in task satisfaction was within-person, and 77 per cent of the variance in momentary task performance was within-person.

Within-person Pearson correlations were computed for each of the 121 respondents. For mood and task performance, the within-person correlations ranged from -0.20 to 0.78 . For task satisfaction and task performance, the range was -0.33 to 0.88 . The mood–task performance correlations were greater than 0.30 (Cohen's, 1988, definition of a 'medium' effect size) for 62 per cent of individuals and greater than 0.50 (Cohen's definition of a 'strong' effect size) for 30 per cent of individuals. The task satisfaction–task performance correlations were greater than 0.30 for 79 per cent of individuals and greater than 0.50 for 57 per cent of individuals.

Within-person Pearson correlations were presented above as they may more closely resemble the mental processes used by lay observers to reach conclusions about satisfaction–performance covariation. However, hierarchical linear modeling is a more correct way to analyze unbalanced nested data. Using HLM, random coefficients regression models were calculated with momentary task

Table 4. Hierarchical linear model results

One-way ANOVA with random effects			
	σ^2	τ_{00}	% of total variance that is within-person
Momentary mood	1.97	1.35***	59%
Momentary task satisfaction	0.66	0.21***	76%
Momentary task performance	0.46	0.14***	77%
Random coefficients regression models			
Independent variable: momentary task performance			
	σ^2	γ_{10}	% reduction in unexplained within-person variance by IV
<i>Dependent variable</i>			
Momentary mood	1.63	0.74***	17%
Momentary task satisfaction	0.44	0.60***	33%

σ^2 , variance within-person; τ_{00} variance between persons; γ_{10} , average slope coefficient (unstandardized).

*** $p < 0.001$.

performance as the predictor of mood and of task satisfaction (Table 4). A comparison of the within-person variance component of the initial one-way ANOVA for mood or task satisfaction without momentary task performance as a predictor (mentioned above) to the within-person variance component from the model containing task performance allows the calculation of the percentage of within-person variance in momentary mood or task satisfaction which is accounted for by task performance. Results showed that a significant ($p < 0.001$) 17 per cent of the within-person variance in momentary mood and 33 per cent of the within-person variance in momentary task satisfaction was accounted for by momentary task performance. The square root of these percentages is analogous to a correlation. Thus, the estimated average within-person correlation between mood and momentary task performance was 0.41, while the average within-person correlation between task satisfaction and task performance was 0.57. These results confirm that most people experience a better mood and more task satisfaction when they believe they are performing better than usual for them, and worse mood and less task satisfaction when they believe they are performing more poorly than usual. Thus, Hypothesis 1a was supported.

Hypothesis 1b suggested that the within-person relationships would be stronger than the between-persons correlations between job satisfaction and job performance. Confidence intervals were constructed around the correlations estimated from HLM. For the within-person mood–task performance correlation the interval was 0.38 to 0.44, while for the within-person task satisfaction–task performance correlation the interval was 0.56 to 0.60. These intervals do not overlap those for the between-persons correlations of job satisfaction and job performance observed in the current study, which were all less than 0.10. Nor do they overlap the confidence interval of 0.15–0.21 around Judge et al.'s mean between-persons correlation of 0.18. These findings provide support for Hypothesis 1b.

Hypothesis 2: other indicators of positive feelings and job performance

Hypothesis 2a suggested that the relationships between several alternative conceptualizations of satisfaction/happiness/well-being and job performance would be significant. Four conceptualizations were

used. For two of these, life satisfaction and negative affectivity, correlations with job performance were low and non-significant at both Time 1 and Time 2 (see Table 3). Mean mood was significantly correlated with job performance at Time 1 ($r = 0.26$, $p < 0.01$) but not at Time 2. Only positive affectivity had sizeable correlations with job performance of 0.42 and 0.33 ($p < 0.01$) at Times 1 and 2.

Hypothesis 2b predicted that the correlations involving alternative conceptualizations of happiness/well-being would be stronger than those observed between job satisfaction and job performance in this study. The correlation between mean mood and Time 1 job performance was just significantly stronger than that between Time 1 job satisfaction and Time 1 job performance ($z = 1.65$, $p < 0.05$). The positive affectivity correlations with job performance at Times 1 and 2 were significantly stronger than the job satisfaction–job performance correlations in the same time frames ($z = 3.10$, $p < 0.001$ and $z = 2.62$, $p < 0.01$).

The next step was to compare the significant correlations to the mean uncorrected correlation of 0.18 found in the Judge et al. (2001) meta-analysis. The confidence interval for the correlation of mean mood to Time 1 job performance included Judge et al.'s value of 0.18. However, both the Time 1 and Time 2 correlations between positive affectivity and job performance were significantly larger than Judge et al.'s finding of 0.18 ($z = 2.88$, $p < 0.01$, and $z = 1.75$, $p < 0.05$). Thus, Hypothesis 2b is supported for only one of the four alternative happiness/well-being indicators: positive affectivity.

Hypothesis 3: job satisfaction and organizational citizenship behavior

Hypothesis 3a predicted a significant correlation between job satisfaction and an alternative conceptualization of performance in the form of organizational citizenship behavior. This hypothesis was supported, with correlations of 0.23 and 0.24 ($p < 0.01$). It was further predicted that these relationships would be stronger than those observed between job satisfaction and job performance. The Time 2 correlation between satisfaction and citizenship behavior of 0.24 is significantly stronger than the correlation of 0.04 between Time 2 satisfaction and Time 2 job performance in this study ($z = 1.93$, $p < 0.05$). However, the comparison is not significant in the case of the Time 1 satisfaction–performance correlation, though the difference is in the expected direction (0.23 versus 0.10). Further, observed correlations between organizational citizenship behavior and job satisfaction did not differ from Judge et al.'s value of 0.18. Thus, Hypothesis 3b was not supported.

A combination of Hypotheses 2 and 3 would suggest that lay people may be using alternative conceptualizations of both satisfaction and performance simultaneously when concluding that happy workers are productive workers. The correlation between positive affectivity and citizenship behavior in this study was 0.41 ($p < 0.001$), which is significantly larger than the job satisfaction–job performance correlations in this study. Further, the 95 per cent confidence interval around this correlation (0.25–0.55) does not overlap the confidence interval of 0.15–0.21 around Judge's value of 0.18. Lay people may be correct in believing that pleasantly aroused employees are more helpful and cooperative in the workplace, and may have generalized this to a belief that satisfied employees are better performers.

Discussion of Study 2

The purpose of Study 2 was to determine whether strong relationships existed between mood and/or task satisfaction and task performance at the within-person level, or between alternative definitions of

happiness/well-being and of performance at the between-persons level. Note that these possibilities are not mutually exclusive. In fact, the more strong relationships exist between satisfaction-like and performance-like variables at any level, the more understandable and justifiable is the lay person commitment to the happy-productive worker hypothesis documented in Study 1.

Hypotheses 1a and 1b suggested that relationships between momentary mood and task satisfaction with concurrent task performance would exist and would be stronger than relationships between job satisfaction and performance. The hypotheses were supported, with most respondents feeling better (better mood and more task satisfaction) than usual for them when they believed they were performing better than usual for them, and feeling worse when they believed they were performing more poorly than usual. Both of these relationships were significantly stronger than the uncorrected mean correlation from Judge et al.'s meta-analysis, and they were also significantly stronger than the corrected mean population value of 0.30 from that study. It was not possible to determine whether the within-person relationships were due predominantly to pre-existing mood influencing subsequent perceived performance (Isen, 1999), or to perceived performance impacting satisfaction with that performance and subsequent mood (Carver & Scheier, 1990). It is entirely possible that both directions of influence occur.

The strong average relationship between momentary task satisfaction and performance ($r = 0.57$) is a particularly plausible source of lay persons' beliefs that satisfaction and performance covary. Information at the within-person level is highly accessible to everyone via introspection. Both managers and students would have experienced many instances of appraising their own performance on work or study tasks and noting their concurrent affective states. These experiences may help explain the strong endorsement of the happy-productive worker hypothesis in Study 1 even among inexperienced students who lacked the opportunity to have observed between-persons variations in job satisfaction and job performance in the workplace. Individuals may mistakenly generalize from their own within-person experience of feeling satisfied when performing well to conclude that more satisfied employees perform better than less satisfied employees.

Turning to other potential sources of the lay belief, several alternative definitions of satisfaction/happiness/well-being were used to explore relationships with job performance at the between-persons level. Negative affectivity and life satisfaction were not consistently better predictors of job performance than was job satisfaction. Mean mood at work is arguably the closest to what lay people probably mean when they think of 'happiness' at work. However, this measure was significantly related to performance only at Time 1, and the relationship was not stronger than the average relationship between job satisfaction and job performance found by Judge et al. (2001). The only alternative conceptualization of positive feelings that was a significantly better predictor of performance was positive affectivity.

The empirical and theoretical bases for a relationship between the personality trait positive affectivity and performance are not yet well developed, and further research is certainly necessary before definitive conclusions can be reached. It would be premature to conclude that this relationship is strong and highly reliable on the basis of this study for several reasons. First, personality traits are not usually strong predictors of job performance (Barrick & Mount, 1991; Salgado, 1997; Tett, Jackson, & Rothstein, 1991). Second, Wright and his colleagues have consistently failed to find a relationship between PA and supervisor-rated performance using the same PA measure as the present study (Wright & Staw, 1999; Wright, Cropanzano, Denney, & Moline, 2002; Wright, Larwood, & Denney, 2002). Nevertheless, it is possible that lay people have observed genuine covariation between some form of psychological well-being and performance, and that this could be a partial basis for belief in the happy-productive worker hypothesis.

The third set of hypotheses suggested that job satisfaction would be related to an alternative aspect of performance—organizational citizenship behavior—and that this relationship might be stronger

than that between job satisfaction and job performance. While job satisfaction and citizenship behavior were significantly correlated both concurrently and when measured a month apart, the magnitude of the relationships was not consistently larger than that between job satisfaction and job performance either in this study or in Judge et al.'s (2001) meta-analysis. However, the citizenship measure in this study was not as reliable or as comprehensive as it could have been. Meta-analytic evidence from Organ & Ryan (1995) suggests that when a composite measure of several types of citizenship behavior is used, relationships with satisfaction may be substantially stronger (0.38) than Judge's uncorrected mean correlation of 0.18.

Thus, it is still possible that lay persons believe in a strong satisfaction–performance relationship at least partly because they have noticed (or think they have noticed) a relatively strong relationship between satisfaction and citizenship behavior. Perhaps observers are especially likely to attribute voluntary acts of citizenship and cooperation to favorable employee attitudes like job satisfaction. If others' attitudes are not known with certainty, it is possible that they are inferred from more visible voluntary work-related behavior, thus perpetuating belief in the happy–productive worker hypothesis. Assessing this possibility would require an investigation of the accuracy of observers' estimates of the job satisfaction of others, and whether such estimates are influenced by information on the citizenship behavior of ratees.

Methodological issues

All data in Study 2 were collected by self-report, and this methodology can raise two potential issues. First, there may be concern that common method bias could inflate correlations. Second, there may be concern about the use of self-reports of performance and citizenship, when prior research has most often used supervisor reports of these variables. These concerns may exist for both the between-persons data collected at Times 1 and 2, and for the real-time reports collected during the ESM period.

Turning first to the between-persons data (correlations shown in Table 3), it is apparent that the satisfaction to performance and citizenship correlations found in this study are of similar magnitude to those reported in the literature when external raters of performance and citizenship are used (cf. Judge et al., 2001; Organ & Ryan, 1995). The weak correlations between job satisfaction and self-rated job performance in this study show that individuals were not bringing their questionnaire responses into line with the commonsense theory about the relationship between these variables espoused by the respondents in Study 1. Further, the main satisfaction and performance measures were collected twice 3–4 weeks apart, and the lagged correlations were similar in magnitude to the concurrent correlations. Finally, Iaffaldano and Muchinsky's meta-analysis (1985) assessed whether source of performance rating (self versus other) affected the magnitude of satisfaction–performance correlations, and concluded that it did not. Thus, it seems unlikely that the use of self-report distorted conclusions from the surveys at Time 1 and Time 2.

At the within-person level, the hypotheses required frequent assessments of momentary performance. Such data are impossible to obtain from objective or supervisory sources on most jobs (cf. Totterdell, 2000). When data are needed on 'private' feelings and behaviors that are simply unavailable from other sources, well-constructed self-reports are the only alternative (Baldwin, 2000). More to the point, in the case of the within-person hypotheses, the strongest theoretical argument is that it is the individual's *own view* of his or her performance or progress toward a goal, rather than an external judgment of performance, that triggers momentary affect (Carver & Scheier, 1990). Thus the most appropriate operationalization for testing these hypotheses involves self-perceived performance. Further, the within-person hypotheses are implicitly about *relative* performance over time—how individuals' feelings vary with their perceived level of momentary performance compared to their own

individual baselines for both performance and feelings. Hierarchical Linear Modeling controls for between-person differences in mean perceived task performance. For these reasons, absolute accuracy of performance ratings against an external standard or against other performers is not relevant in assessing within-person relationships.

The question remains, however, whether individuals might have aligned mood or task satisfaction ratings with performance reports at each signal to appear internally consistent or to fit a commonsense hypothesis about what such a relationship should be. There are several arguments for why the ESM reports should be accurate rather than biased in this way. First, the other 26 items on the ESM survey (those not relevant to this study) should have disguised the purpose of the research and not prompted responses consistent with a commonsense theory about satisfaction–performance covariation. Second, recent research suggests that individuals in ESM studies perform minimal cognitive processing before responding—they simply report their current state unedited. It is considered unlikely that individuals take time to access memory for semantic beliefs about possible feelings and their expected covariates to construct responses to questions about how they are feeling and performing at the present moment (cf. Robinson & Clore, 2002; Shiffman, 2000).

Using self-reports for all performance variables in the study (job performance, citizenship behavior, momentary task performance) allowed predictions about the relative strength of relationships with different types and levels of indicators of satisfaction/happiness/well-being to be tested against each other on a level playing field. Finally, this paper aims to shed light on possible sources of commonsense theories. It is likely that self-perceptions are the most relevant source of data for the development of such theories. Individuals' own perceptions of their performance and satisfaction are likely to be much more available than objective information on their own or another's attitudes or behavior, and so are likely to be drawn upon in forming commonsense theories (Kelley, 1992).

General Discussion

This paper began by documenting the widespread existence of a strong commonsense theory: that happy workers are productive workers, or that employees who are satisfied with their jobs are likely to be better performers on those jobs. The extreme strength of lay person beliefs is surprising given meta-analytic findings that the uncorrected correlation between standard measures of satisfaction and performance is relatively small. Study 2 was designed to assess whether several alternative relationships might be strong enough to provide a foundation for lay beliefs. It is not possible to conclude with certainty that any particular relationship is the source of a commonsense theory, but several relatively strong relationships were found.

However, there are several additional possibilities. One not tested in this study is that lay people may have observed a strong relationship between satisfaction and performance at a higher level of analysis than usually assessed in satisfaction–performance research. Specifically, individuals may be aware of relationships between the average job satisfaction or morale of employees in a work unit and indicators of unit performance such as labor productivity, profit, sales volume, or customer satisfaction. Recently, a number of authors have advocated the existence of such 'linkages' between aggregated employee attitudes and unit-level results (cf. Harter, Schmidt, & Hayes, 2002; Heskett, Sasser, & Schlesinger, 1997; Koys, 2001; Ostroff, 1992; Pfeffer, 1998; Rucci, Kirn, & Quinn, 1998; Wiley, 1996). However, unit-level correlations sometimes fail to materialize (Bernhardt, Donthu, & Kennett, 2000; Ryan, Schmit, & Johnson, 1996; Tornow & Wiley, 1991; Wiley, 1991), and are not usually strong enough to account for persistent lay beliefs in satisfaction–performance covariation. Such macro-level

relationships would also be less readily accessible to observation (particularly to individuals with little work experience) and are thus unlikely to be a foundation for a widely held commonsense theory (Kelley, 1992).

A second possibility is that lay people have noticed a relationship between job satisfaction and job performance in a subpopulation where the correlation is stronger (Kluger & Tikochinsky, 2001). Studies of moderators of the satisfaction–performance relationship have addressed this issue, and meta-analytic results verify that satisfaction–performance correlations are stronger in high-complexity jobs (Judge et al., 2001) and when performance-contingent rewards are present (Podsakoff & Williams, 1986). However, complex jobs and contingently rewarded jobs appear to be a small subset of all situations that lay people may observe. For instance, Judge et al. found only 24 correlations from high-complexity jobs but 186 from medium and low-complexity jobs in an extensive search of the literature. Podsakoff and Williams report correlations from 16 samples with contingent rewards and 81 samples where rewards were non-contingent or no contingency was mentioned. If the incidence of these situations in the literature mirrors their incidence in the population, then individuals would have fewer opportunities to observe these stronger relationships than the weaker ones that prevail in more common low- and medium-complexity or non-contingently rewarded jobs. The inexperienced undergraduates in sample 2 of Study 1 are especially unlikely to have had the opportunity to observe relationships in high-complexity jobs, yet 77 per cent of them agree that ‘employees who are satisfied with their jobs are usually good performers.’ While it is possible that the stronger relationship between satisfaction and performance in selected subpopulations is a contributor to the near-universal belief that happy workers are productive, it seems unlikely to be the only source.

A final possibility is that the happy–productive worker hypothesis may be a self-sustaining myth, rather than being founded in the observation of any genuine empirical relationship(s). Research has shown that individuals are fairly poor at judging covariation (cf. Alloy & Tabachnik, 1984; Crocker, 1981; Nisbett & Ross, 1980), often failing to notice weak to moderate relationships and sometimes perceiving strong relationships where none exist. Individuals exhibit over reliance on positive confirming cases (the satisfied employee who is a good performer), fail to seek disconfirming cases (dissatisfied good performers, satisfied poor performers), are willing to reach conclusions on the basis of few cases, and are more convinced by single vivid case histories than statistical information on larger samples (Crocker, 1981; Klayman & Ha, 1987; Kunda, 1990).

The data needed to accurately judge satisfaction–performance relationships across people may be ambiguous or unavailable to observers. For instance, individuals probably do not know with certainty how satisfied each of their co-workers is. In the absence of such information, they may be guided by a pre-existing commonsense theory to infer that productive colleagues must be satisfied and vice versa. There is an innate and attractive balance in such a belief, as pointed out by Organ in 1977. Specifically, Organ reasoned that the belief that satisfaction causes performance may stem from social exchange and reciprocity norms that exist broadly in society. Individuals who are dissatisfied because they have been treated badly by their organization should respond by reducing their contribution, resulting in poorer performance. Those who are satisfied by a beneficent organization should reciprocate by giving their utmost effort and dedication. The possibly naïve but compelling logic in this proposition may lead lay people to selectively perceive a stronger relationship between satisfaction and performance than actually exists.

Implications for research

Most of the research on employee behavior and attitudes at work has been conducted at the between-persons level, attempting to explain why one individual behaves differently or feels differently than

another individual. Within-person variation in behavior and feelings either has not been measured, or has been treated as error. This paper shows that there is meaningful and predictable variation within-person over time. To understand motivation and performance thoroughly, increased attention to proximal motivational processes has been recommended (Kanfer, 1992; Kanfer & Ackerman, 1996), and there is substantial scope for future research at this level. For instance, research on the relationship of momentary task performance to other transient states such as effort, interest, and attention would be useful. The next step beyond the present correlational study might involve experimental research to pin down causal relationships between objective performance, perceived performance, and concurrent affect. For instance, one might construct situations in which objective performance and momentary mood or task satisfaction are measured frequently, and real-time true or false or no feedback on task performance is provided to performers. The relative strength of within-person affect to performance correlations across conditions would clarify casual directions. The findings would probably have implications for the design of feedback systems in the workplace.

Implications for practice

For those teaching organizational behavior, the findings of Studies 1 and 2 may help in showing that the discipline is more than 'just common sense.' Specifically, the commonsense belief that satisfied employees are much more productive than less satisfied employees, no matter how widely shared it is now known to be, is not correct. However, the within-person relationship between task satisfaction and concurrent performance is strong for most people. This finding may help students understand a possible source of their erroneous beliefs, as well as provide an object lesson on the dangers of generalizing findings across levels without careful thought (Rousseau, 1985).

Conclusions

In a recent book about job attitudes, Brief wrote, 'I still suspect a consistent, significant job satisfaction–task performance relationship is out there to be found' (Brief, 1998, p. 43). This study has found some support for several such relationships, including those between momentary mood and task performance, positive affectivity and job performance, positive affectivity and citizenship, and perhaps job satisfaction and citizenship. However, the strongest and most convincing relationship is between momentary task satisfaction and momentary task performance over time at the within-person level ($r = 0.57$). This relationship may be the Holy Grail that organizational behavior researchers have been seeking for more than half a century. At the very least, this strong relationship provides a credible source for the Grail myth in the minds of lay people. Individuals may believe that satisfied employees are good performers because of their own highly accessible experiences of being more satisfied at moments that they are performing work tasks more effectively, and less satisfied when they are performing less well.

Acknowledgements

This research was supported by grants from the Australian Research Council, project numbers A79801016 and A00104726.

Author biography

Cynthia D. Fisher (MS, PhD Purdue) is Professor of Management at Bond University and has also taught at Texas A&M University, the University of Baltimore, and the National University of Singapore. Her current research interests include employee attitudes and work behavior, within-person research methodology, and emotion in the workplace. She has served on the editorial boards of top international journals and has been awarded several large research grants in the United States and in Australia.

References

- Allen, T. D., & Rush, M. C. (1998). The effects of organizational citizenship behavior on performance judgments: a field study and a laboratory experiment. *Journal of Applied Psychology, 83*, 247–260.
- Alliger, G. M., & Williams, K. J. (1993). Using signal-contingent experience sampling methodology to study work in the field: a discussion and illustration examining task perceptions and mood. *Personnel Psychology, 46*, 525–549.
- Alloy, L. B., & Tabachnik, N. (1984). Assessment of covariation by humans and animals: the joint influence of prior expectations and current situational information. *Psychological Review, 91*, 112–147.
- Ashby, F. G., Isen, A. M., & Turken, A. U. (1999). A neuropsychological theory of positive affect and its influence on cognition. *Psychological Review, 106*, 529–550.
- Aspinwall, L. G. (1998). Rethinking the role of positive affect in self-regulation. *Motivation and Emotion, 22*, 1–32.
- Baldwin, W. (2000). Information no one else knows: the value of self-report. In A. A. Stone, J. S. Turkkan, C. A. Bachrach, J. B. Jobe, H. S. Kurtzman, & V. S. Cain, (Eds.), *The science of self-report: Implications for research and practice* (pp. 3–7). Mahwah, NJ: Erlbaum.
- Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: a meta-analysis. *Personnel Psychology, 44*, 1–26.
- Berkman, P. L. (1971). Measurement of mental health in a general population survey. *American Journal of Epidemiology, 94*, 105–111.
- Bernhardt, K. L., Donthu, N., & Kennett, P. A. (2000). A longitudinal analysis of satisfaction and profitability. *Journal of Business Research, 47*, 161–171.
- Borman, W., & Motowidlo, S. J. (1993). Expanding the criterion domain to include elements of contextual performance. In N. Schmitt, & W. C. Borman (Eds.), *Personnel selection* (pp. 71–98). San Francisco: Jossey-Bass.
- Borman, W. C., White, L. A., & Dorsey, D. W. (1995). Effects of ratee task performance and interpersonal factors on supervisor and peer performance ratings. *Journal of Applied Psychology, 80*, 168–177.
- Brief, A. P. (1998). *Attitudes in and around organizations*. Thousand Oaks, CA: Sage.
- Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models: Applications and data analysis methods*. Newbury Park, CA: Sage.
- Carlson, M., Charlin, V., & Miller, N. (1988). Positive mood and helping behavior: a test of six hypotheses. *Journal of Personality and Social Psychology, 55*, 211–229.
- Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: a control-process view. *Psychological Review, 97*, 19–35.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Crocker, J. (1981). Judgment of covariation by social perceivers. *Psychological Bulletin, 90*, 272–292.
- Cropanzano, R., & Wright, T. A. (1999). A 5-year study of change in the relationship between well-being and job performance. *Consulting Psychology Journal: Practice and Research, 51*, 252–265.
- Cropanzano, R., & Wright, T. A. (2001). When a 'happy' worker is really a 'productive' worker: a review and further refinement of the happy-productive worker thesis. *Consulting Psychology Journal: Practice and Research, 53*, 182–199.

- Csikszentmihalyi, M., & Larson, R. (1992). Validity and reliability of the experience sampling method. In M. W. deVries (Ed.), *The experience of psychopathology: Investigating mental disorders in their natural settings* (pp. 43–57). Cambridge: Cambridge University Press.
- Diener, D. (2000). Subjective well-being. *American Psychologist*, *55*, 34–43.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, *49*, 71–75.
- Fisher, C. D. (1980). On the dubious wisdom of expecting job satisfaction to correlate with performance. *Academy of Management Review*, *5*, 607–612.
- Fisher, C. D. (1985). Source of performance variance as a moderator of the job satisfaction–job performance relationship. *International Journal of Psychology*, *20*, 169–178.
- Fisher, C. D. (2000). Mood and emotion while working: missing pieces of job satisfaction? *Journal of Organizational Behavior*, *21*, 185–202.
- Forgas, J. P. (2001). The affect infusion model (AIM): an integrative theory of mood effects on cognitive judgments. In L. L. Martin, & G. L. Clore (Eds.), *Theories of mood and cognition: A user's guidebook* (pp. 99–134). Mahwah, NJ: Erlbaum.
- Forgas, J. P., & George, J. M. (2001). Affective influences on judgments and behavior in organizations. *Organizational Behavior and Human Decision Processes*, *86*, 3–34.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: the broaden-and-built theory of positive emotions. *American Psychologist*, *56*, 218–226.
- George, J. M., & Brief, A. P. (1992). Feeling good–doing good: a conceptual analysis of the mood at work–organizational spontaneity relationship. *Psychological Bulletin*, *112*, 310–329.
- Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: a meta-analysis. *Journal of Applied Psychology*, *87*, 268–279.
- Harter, S. (1978). Effectance motivation reconsidered: toward a developmental model. *Human Development*, *21*, 34–64.
- Heller, D., Judge, T. A., & Watson D. (2002). The confounding role of personality and trait affectivity in the relationship between job and life satisfaction. *Journal of Organizational Behavior*, *23*, 815–835.
- Herman, J. B. (1973). Are situational contingencies limiting job attitude–job performance relationships? *Organizational Behavior and Human Performance*, *10*, 208–224.
- Herzberg, F., Mausner, B., & Snyderman, B. B. (1959). *The motivation to work*. New York: Wiley.
- Heskett, J. L., Sasser, W. E., Jr., & Schlesinger, L. A. (1997). *The service profit chain*. New York: Free Press.
- Hobfoll, S. E. (1989). Conservation of resources: a new attempt at conceptualizing stress. *American Psychologist*, *44*, 513–524.
- Hsee, C. K., & Abelson, R. P. (1991). Velocity relation: satisfaction as a function of the first derivative of outcome over time. *Journal of Personality and Social Psychology*, *60*, 341–347.
- Hufford, M. R., Shiffman, S., Paty, J., & Stone, A. A. (2001). Ecological momentary assessment: real-world, real-time measurement of patient experience. In J. Fahrenberg, & M. Myrtek (Eds.), *Progress in ambulatory assessment: Computer-assisted psychological and psychophysiological methods in monitoring and field studies* (pp. 69–92). Kirkland, WA: Hogrefe & Huber.
- Iaffaldano, M. T., & Muchinsky, P. M. (1985). Job satisfaction and job performance: a meta-analysis. *Psychological Bulletin*, *97*, 251–273.
- Ironson, G. H., Smith, P. C., Brannick, M. T., Gibson, W. M., & Paul, K. B. (1989). Construction of a Job in General Scale: a comparison of global, composite, and specific measures. *Journal of Applied Psychology*, *74*, 193–200.
- Isen, A. M. (1999). Positive affect. In T. Dalglish, & M. Power (Eds.), *The handbook of cognition and emotion* (pp. 521–539). New York: Wiley.
- Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction–job performance relationship: a qualitative and quantitative review. *Psychological Bulletin*, *127*, 376–407.
- Kanfer, R. (1992). Work motivation: new directions in theory and research. *International Review of Industrial and Organizational Psychology*, *7*, 1–53.
- Kanfer, R., & Ackerman, P. L. (1996). A self-regulatory skills perspective to reducing cognitive interference. In I. G. Sarason, B. R. Sarason, & G. R. Pierce (Eds.), *Cognitive interference: Theories, methods, and findings* (pp. 153–171). Mahwah, NJ: Erlbaum.
- Kelley, H. H. (1992). Common-sense psychology and scientific psychology. *Annual Review of Psychology*, *43*, 1–23.

- Klayman, J., & Ha, Y. (1987). Confirmation, disconfirmation, and information in hypothesis testing. *Psychological Review*, *94*, 211–228.
- Kluger, A. N., & Tikochinsky, J. (2001). The error of accepting the ‘theoretical’ null hypothesis: the rise, fall, and resurrection of commonsense hypotheses in psychology. *Psychological Bulletin*, *127*, 408–423.
- Koys, D. J. (2001). The effects of employee satisfaction, organizational citizenship behavior, and turnover on organizational effectiveness: a unit-level, longitudinal study. *Personnel Psychology*, *54*, 101–114.
- Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin*, *108*, 480–498.
- Kunin, T. (1955). The construction of a new type of attitude measure. *Personnel Psychology*, *8*, 65–78.
- Larson, R., & Csikszentmihalyi, M. (1983). The experience sampling method. In H. T. Reis (Ed.), *Naturalistic approaches to studying social interaction: New directions for methodology of social and behavioral science* (Vol. 15, pp. 41–56). San Francisco: Jossey-Bass.
- Lawler, E. E., III, & Porter, L. W. (1967). The effect of performance on job satisfaction. *Industrial Relations*, *7*, 20–28.
- Ledford, G. E., Jr. (1999). Happiness and productivity revisited. *Journal of Organizational Behavior*, *20*, 25–30.
- Locke, E. A., Cartledge, N., & Knerr, C. S. (1970). Studies of the relationship between satisfaction, goal-setting, and performance. *Organizational Behavior and Human Performance*, *5*, 135–158.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice-Hall.
- MacKenzie, S. B., Podsakoff, P. M., & Fetter, R. (1991). Organizational citizenship behavior and objective productivity as determinants of managerial evaluations of salesperson performance. *Organizational Behavior and Human Decision Processes*, *50*, 123–150.
- Martin, L. L., & Clore, G. L. (2001). *Theories of mood and cognition: A user’s guidebook*. Mahwah, NJ: Erlbaum.
- Motowidlo, S. J., & Van Scotter, J. R. (1994). Evidence that task performance should be distinguished from contextual performance. *Journal of Applied Psychology*, *79*, 475–480.
- Nisbett, R. E., & Ross, L. (1980). *Human inference: Strategies and shortcomings of social judgment*. Englewood Cliffs, NJ: Prentice-Hall.
- Organ, D. W. (1977). A reappraisal and reinterpretation of the satisfaction–causes–performance hypothesis. *Academy of Management Review*, *2*, 46–53.
- Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington, MA: Lexington Books.
- Organ, D. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology*, *48*, 775–802.
- Ostroff, C. (1992). The relationship between satisfaction, attitudes, and performance: an organizational level analysis. *Journal of Applied Psychology*, *77*, 963–974.
- Pavot, W., & Diener, E. (1993). Review of the Satisfaction With Life Scale. *Psychological Assessment*, *5*, 164–172.
- Pekrun, R., & Frese, M. (1992). Emotions in work and achievement. *International Review of Industrial and Organizational Psychology*, *7*, 153–200.
- Petty, M. M., McGee, G. W., & Cavender, J. W. (1984). A meta-analysis of the relationships between individual job satisfaction and individual performance. *Academy of Management Review*, *9*, 712–721.
- Pfeffer, J. (1998). *The human equation*. Boston, MA: Harvard Business School Press.
- Podsakoff, P. M., & Williams, L. J. (1986). The relationship between job performance and job satisfaction. In E. A. Locke (Ed.), *Generalizing from laboratory to field settings* (pp. 207–253). Lexington, MA: Lexington Books.
- Renwick, G. W. (1991). *A fair go for all: Australian/American interactions*. Yarmouth, ME: Intercultural Press.
- Robinson, M. D., & Clore, G. L. (2002). Belief and feeling: evidence for an accessibility model of emotional self-report. *Psychological Bulletin*, *128*, 934–960.
- Rousseau, D. M. (1985). Issues of level in organizational research: multi-level and cross-level perspectives. *Research in Organizational Behavior*, *7*, 1–37.
- Rucci, A. J., Kirn, S. P., & Quinn, R. T. (1998). The employee-customer profit chain at Sears. *Harvard Business Review*, *76*, 83–97.
- Ryan, A. M., Schmit, M. J., & Johnson, R. (1996). Attitudes and effectiveness: examining relations at an organizational level. *Personnel Psychology*, *49*, 853–882.
- Salgado, J. F. (1997). The five factor model of personality and job performance in the European Community. *Journal of Applied Psychology*, *82*, 30–43.
- Schwartz, J. E., Neale, J., Marco, C., Shiffman, S. S., & Stone, A. A. (1999). Does trait coping exist? A momentary assessment approach to the evaluation of traits. *Journal of Personality and Social Psychology*, *77*, 360–369.

- Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: the self-concordance model. *Journal of Personality and Social Psychology*, *76*, 482–497.
- Sheldon, K. M., Elliot, A., Kim, Y., & Kasser, T. (2001). What is satisfying about satisfying events? Testing 10 candidate psychological needs. *Journal of Personality and Social Psychology*, *80*, 325–339.
- Sheldon, K. M., Ryan, R., & Reis, H. T. (1996). What makes for a good day? Competence and autonomy in the day and in the person. *Personality and Social Psychology Bulletin*, *22*, 1270–1279.
- Shiffman, S. (2000). Real-time self-report of momentary states in the natural environment: computerized ecological momentary assessment. In A. A. Stone, J. S. Turkkan, C. A. Bachrach, J. B. Jobe, H. S. Kurtzman, & V. S. Cain (Eds.), *The science of self-report: Implications for research and practice* (pp. 277–296). Mahwah, NJ: Erlbaum.
- Smith, C. A., Organ, D. W., & Near, J. (1983). Organizational citizenship behavior: its nature and antecedents. *Journal of Applied Psychology*, *68*, 653–663.
- Staw, B. M., & Barsade, S. G. (1993). Affect and managerial performance: a test of the sadder-but-wiser vs. happier-and-smarter hypothesis. *Administrative Science Quarterly*, *38*, 304–331.
- Staw, B. M., Sutton, R. I., & Pelled, L. H. (1994). Employee positive emotion and favorable outcomes at the workplace. *Organization Science*, *5*, 51–71.
- Tett, R. P., Jackson, D. N., & Rothstein, M. (1991). Personality measures as predictors of job performance: a meta-analytic review. *Personnel Psychology*, *44*, 703–742.
- Tornow, W. W., & Wiley, J. W. (1991). Service quality and management practices: a look at employee attitudes, customer satisfaction, and bottom-line consequences. *Human Resource Planning*, *14*, 105–115.
- Totterdell, P. (1999). Mood scores: mood and performance in professional cricketers. *British Journal of Psychology*, *90*, 317–332.
- Totterdell, P. (2000). Catching moods and hitting runs: mood linkage and subjective performance in professional sports teams. *Journal of Applied Psychology*, *85*, 848–859.
- Van Dyne, L., Cummings, L. L., & Parks, J. M. (1995). Extra-role behaviors: in pursuit of construct and definitional clarity (a bridge over muddied waters). *Research in Organizational Behavior*, *17*, 215–285.
- Vroom, V. H. (1964). *Work and motivation*. New York: Wiley.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development of brief measures of positive and negative affect: the PANAS scale. *Journal of Personality and Social Psychology*, *54*, 1063–1070.
- Weiss, H. M., & Cropanzano, R. (1996). Affective events theory: a theoretical discussion of the structure, causes and consequences of affective experiences at work. *Research in Organizational Behavior*, *18*, 1–74.
- Werner, J. M. (1994). Dimensions that make a difference: examining the impact of in-role and extrarole behaviors on supervisory ratings. *Journal of Applied Psychology*, *79*, 98–107.
- White, R. W. (1959). Motivation reconsidered: the concept of competence. *Psychological Review*, *66*, 297–333.
- Wiley, J. W. (1991). Customer satisfaction: a supportive work environment and its financial cost. *Human Resource Planning*, *14*, 117–127.
- Wiley, J. W. (1996). Linking employee survey results to customer satisfaction and business performance. In A. Kraut (Ed.), *Organizational surveys* (pp. 330–359). San Francisco: Jossey-Bass.
- Wright, T. A., Cropanzano, R., Denney, P. J., & Moline, G. L. (2002). When a happy worker is a productive worker: a preliminary examination of three models. *Canadian Journal of Behavioural Science*, *34*, 146–150.
- Wright, T. A., Larwood, L., & Denney, P. J. (2002). The different ‘faces’ of happiness–unhappiness in organizational research: emotional exhaustion, positive affectivity, negative affectivity, and psychological well-being as correlates of job performance. *Journal of Business and Management*, *8*, 109–126.
- Wright, T. A., & Staw, B. M. (1999). Affect and favorable work outcomes: two longitudinal tests of the happy–productive worker thesis. *Journal of Organizational Behavior*, *20*, 1–23.