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Transformational Leadership and Psychological Well-Being: The Mediating Role of Meaningful Work

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Two studies investigated the relationship between transformational leadership, the meaning that individuals ascribe to their work, and their psychological well-being. In Study 1, the perceptions of meaningful work partially mediated the relationship between transformational leadership and positive affective well-being in a sample of Canadian health care workers ($N = 319$). In Study 2, the meaning that a separate sample of service workers ($N = 146$) ascribed to their work fully mediated the relationship between transformational leadership and psychological well-being, after controlling for humanistic work beliefs. Overall, these results support and add to the range of positive mental health effects associated with transformational leadership and are suggestive of interventions that organizations can make to improve well-being of workers.

Keywords: meaningful work, psychological well-being, transformational leadership

Although the nature of transformational leadership has been the focus of much research interest, comparatively less is known about the processes through which transformational leadership exerts its effects (Sivanathan, Arnold, Turner, & Barling, 2004). For example, although recent evidence (e.g., van Dierendonck, Haynes, Borrill, & Stride, 2004) has suggested that high-quality leadership has the potential to positively influence others' psychological well-being, it is not clear why this is the case. The two studies reported here investigate the relationship between transformational leadership and psychological well-being as well as a psychological mechanism (experiencing work as meaningful) by which these effects might occur.

Transformational leaders go beyond exchange relationships and motivate others to achieve more that they thought was possible (Bass, 1998, Bass & Riggio, 2006). Although various researchers use different numbers of dimensions in the conceptualization and measurement of transformational leadership, there is substantial overlap between them. One common conceptualization suggests that transformational leadership is composed of four dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Avolio, 1999; Bass, 1998). Idealized influence occurs when the leader does the "right thing" and thereby engenders the trust and respect of his or her followers. Inspirationally motivating leaders hold high expectations and encourage followers to achieve more than they thought possible. Intellectual stimulation involves encouraging followers to challenge the status quo and to answer their own questions. Finally, an individually considerate leader treats each employee as a person, spends time coaching employees, and demonstrates appreciation of their achievements.

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Unlike the specific conceptualization of transformational leadership, the notion of well-being is comparatively broad. It variously includes concepts of physical and psychological health. We can distinguish between two conceptualizations of well-being: subjective and psychological (Keyes, Shmotkin, & Ryff, 2002). Studies investigating subjective well-being have focused on both affective (hedonic balance; balance between pleasant and unpleasant affect) and cognitive (life satisfaction) components of well-being (e.g., Schimmack, Radhakrishnan, Oishi, Dzokoto, & Ahadi, 2002). Studies investigating psychological well-being draw on various conceptualizations of mental health (Keyes, Shmotkin, & Ryff, 2002). There is also a distinction between context-free well-being (e.g., generalized psychosomatic complaints) and context-specific well-being (e.g., job satisfaction; Grebner, Semmer, & Elfering, 2005; Warr, 1999). More generally, recent contributors to the field of occupational health (e.g., Hofmann & Tetrick, 2003; Snyder & Lopez, 2002) have argued that well-being goes beyond the absence of ill health to include the presence of positive states. In the two studies presented here, we focus on two measures of well-being: affective well-being, in the sense of experiencing positive emotions (Study 1), and context-free psychological well-being, in the sense of experiencing a positive state of mental health (Study 2).

We hypothesize that the effects of a transformational leader on followers' well-being are indirect. One of the underlying processes by which transformational leadership is hypothesized to exert effects on followers' well-being is through the meaningfulness of followers' work (Shamir, House, & Arthur, 1993). To examine this relationship, we first describe existing research that investigates the relationship between leadership and well-being more generally and then summarize existing evidence that would suggest that transformational leadership would be positively related to psychological well-being in followers via meaningful work. We test this model in two studies using two separate samples of service workers.

Transformational Leadership and Well-Being

Several studies have found that leaders' behavior affects employees' well-being. Gilbreath and Benson (2004) investigated the effect of supervisory behavior on employee well-being (conceptualized as psychiatric disturbance) using a structure versus consideration conceptualization of supervisory behavior. Findings indicated that positive supervisory behavior (e.g., allowing more employee control, communicating and organizing well, considering employees and their well-being) made a statistically significant contribution to employee well-being over and above the effects of age, lifestyle, social support from coworkers and at home, and stressful work and life events. Van Dierendonck et al. (2004) investigated a similar conceptualization of leader behavior and the effects of this on both job-related affective well-being and context-free psychological well-being, suggesting that high-quality leadership behavior was associated with increased employee well-being.

Evidence specific to transformational leadership is also beginning to accrue. A recent experimental study (Bono & Ilies, 2006) focused on the effect of charismatic leaders on the mood of followers and showed that "charismatic leaders enable their followers to experience positive emotions" (p. 331). Positive moods and emotions would be forms of positive affective well-being conceptually similar to the outcome we focus on in our first study. The potential mechanism accounting for this finding may be that charismatic leaders express more positive emotions themselves and these positive emotions are "caught" by their followers (the contagion hypothesis). Transformational leadership may also reduce stress experienced by individuals through its impact on mentoring functions (Sosik & Godshalk, 2000). One study found that transformational leadership behavior was positively related to mentoring functions received, and in turn negatively related to job-related stress (Sosik & Godshalk, 2000). Taken together, these studies on high-quality leadership and employee well-being suggest the following:

> *Hypothesis 1:* Transformational leadership is positively associated with psychological well-being.

This positive influence is likely not a simple direct relationship. In response to calls in the literature for examination of possible mediators of the leadership–outcome relationship (Yukl, 1999), we were interested in investigating why transformational leadership might have a positive relationship on well-being. One plausible mechanism through which transformational leadership may exert these positive effects on psychological well-being is the perception that the work being done is meaningful.

Transformational Leadership and Meaningful Work

Although the extrinsic purposes of work are important (Morse & Weiss, 1955), research findings

have indicated that that this may not be the most salient meaning of work for many individuals (Meaning of Working International Research Team, 1987). Individuals' perceptions of their jobs do not depend entirely on the objective characteristics of the job (Piccolo & Colquitt, 2006; Wrzesniewski & Dutton, 2001; Salancik & Pfeffer, 1978). Hackman and Oldham's (1980) job characteristics model describes meaningful work as it is related to jobs with characteristics such as task variety, identity and significance, feedback, and autonomy. Recent research has demonstrated a positive link between transformational leadership and employee perceptions of meaning in terms of these job characteristics (Piccolo & Colquitt, 2006). Another way to conceptualize meaningful work is finding a purpose in work that is greater than the extrinsic outcomes of the work. In both of the current studies, we conceptualize meaningful work in the latter way.

Theoretical arguments suggest that transformational leadership will be positively associated with perceiving work as meaningful. First, transformational leaders aspire to raise followers' levels of morality to "more principled levels of judgment" (Burns, 1978, p. 455) and also activate higher order needs in followers based on Maslow's hierarchy (Bass, 1985). Some researchers have argued that this kind of leadership "gives meaningfulness to work by infusing work . . . with moral purpose and commitment" (Shamir et al., 1993, p. 578). Second, the individual respect that a transformational leader exhibits for each follower should also apply to the actual work in which each follower is engaged. The verbal cues that individuals in the work environment give one another about work and the work they do are powerful (Salancik & Pfeffer, 1978; White & Mitchell, 1979), and the transformational leader is likely to provide positive verbal cues to followers about the importance and purpose of their work.

Empirical evidence to support this link is also beginning to mount. Sparks and Schenk (2001) found that transformational leadership was associated with finding a "higher purpose" in the work. The concept of a higher purpose in that study was broad in that it did not measure any specific purpose, but it was clearly a "more important purpose than making money" (Sparks & Schenk, 2001, p. 858). Higher purpose was associated with increased job satisfaction, perceptions of unit cohesion, and work effort. Ascribing a higher moral purpose to one's work, in this case, mediated the transformational leadership–satisfaction and performance relationships. Another study that provided evidence of this link investigated the relationship between transformational leadership and work alienation (Sarros, Tanewski, Winter, Santora, & Densten, 2002). Work alienation was conceptualized as consisting of powerlessness, meaninglessness, and self-estrangement. The meaninglessness component was defined as not being able to "comprehend the relationship of one's contributions to a larger purpose" (Sarros et al., 2002, p. 287). Findings indicated that transformational leadership was negatively associated with alienation. Collectively, the theoretical reasoning and the empirical results presented here suggest that transformational leadership has a positive relationship with experiencing meaningful work.

Meaningful Work and Psychological Well-Being

There is evidence to support a relationship between transformational leadership and meaningful work. If meaningful work is indeed a mechanism through which transformational leadership exerts positive influence on psychological well-being, we need to support the assertion that meaningful work is in turn related to psychological well-being. Numerous authors have described deriving meaning from events as a "fundamental human motive" (Britt, Adler, & Bartone, 2001, p. 54). The benefits to finding meaning in events range from an increased will to live (Frankl, 1963) to perceiving benefits in specific stressful events (Britt et al., 2001). With respect to work, gaining employment after leaving school has positive effects on psychological well-being (Winefield & Tiggemann, 1990). Compared with unemployed individuals, those who are employed displayed better psychological health as measured by self-esteem, depression, negative affect, and external locus of control. In another study, intrinsic reasons for working (i.e., finding the work more meaningful) was found to be predictive of intentions to work in a sample of individuals who were suffering from a terminal illness (Westaby, Versenyi, & Hausmann, 2005). Inasmuch as having the opportunity to engage in intrinsically satisfying opportunities for employment contributes to adjustment and quality of life, it may also reduce anxiety by providing distraction from symptoms (Westaby et al., 2005). On the basis of this review, we hypothesized the following:

> *Hypothesis 2:* The positive relationship between transformational leadership and psychological well-being is mediated by perceptions of meaningful work.

Study 1

Participants and Procedure

Participants in this study were 319 employees of a long-term care facility in a midsized Canadian city. Most of the participants were female (93%), and participants reported an average age of between 40 and 49 years and an average organizational tenure of 6 to 10 years. We distributed the questionnaires to 1,180 employees on work time. Three hundred thirty-four returned the survey, with 319 of these including usable data. The response rate was 29%.

Measures

Transformational leadership. As part of a larger survey, participants completed the Carless, Wearing, and Mann (2000) short measure of transformational leadership (nine items, $\alpha = .97$). This instrument measures the following dimensions of transformational leadership: communicates a vision, develops staff, provides support, empowers staff, is innovative, leads by example, and is charismatic. Although these dimensions are slightly different from those measured by the Multifactor Leadership Questionnaire (Bass & Avolio, 1995), there is substantial overlap between the two. For example, communicates a vision, leads by example, and charisma are all encompassed by the idealized influence and inspirational motivation dimensions of transformational leadership as operationalized by the Multifactor Leadership Questionnaire. Innovation is similar to intellectual stimulation, and developing staff and providing support are encompassed by individual consideration.

Meaningful work. The measure of the meaning of work used in this study is taken from Ashmos and Duchon's (2000) Workplace Spirituality scale (six items, $\alpha = .84$). This measure assesses respondents' perceptions of work enjoyment and the degree to which their work gives them meaning and purpose. Examples of items are "I see a connection between my work and the larger social good of my community" and "The work I do is connected to what I think is important in my life."

Psychological well-being. Participants completed the Hess, Kelloway, and Francis (2005) Positive Affective Well-Being scale. The items in this scale ask individuals about the extent to which in the past 6 months they have felt motivated, cheerful, enthusiastic, lively, joyful, and energetic ($\alpha = .97$).

Results

Descriptive statistics and intercorrelations for all study variables are presented in Table 1. Consistent with Hypothesis 1, transformational leadership was positively associated with psychological well-being as measured by affective well-being ($r = .57$, $p < .01$).

To estimate the hypothesized relationships, we followed the Anderson and Gerbing (1988) approach of two-stage modeling. All analyses were based on the covariance matrix and maximum likelihood estimation as implemented in LISREL 8 (Jöreskog & Sörbom, 1992). Each model was estimated twice: once with no statistical controls and once controlling for gender, age, and organizational tenure. When used, all control variables were estimated as single-indicator latent variables without measurement error and allowed to covary with the exogenous variables and predict all endogenous variables in the model. Results of the structural equation analyses are shown in Table 2. The addition of control variables did not change our findings, so only the uncontrolled model results are reported in detail.

First, as evidence of the measurement model, we conducted a confirmatory factor analysis hypothesizing three correlated factors representing transformational leadership, meaningful work, and positive affective well-being as defined by the scales described above (Model A). The three-factor model provided an acceptable fit to the data, $\chi^2(186, N = 319) = 398.12$, $p < .01$, root mean square error of approximation (RMSEA) = .06, normed fit index (NFI) = .95, comparative fit index (CFI) = .97.

Using the latent variables defined in the measurement model, we proceeded to estimate a series of contrasting models implementing a fully mediated relationship between leadership and well-being (Model B), a partially mediated relationship (Model C), and a nonmediated relationship (Model D). To

Table 1
Study 1: Descriptive Statistics and Intercorrelations for All Study Variables

Variable	*M*	*SD*	1	2	3
1. TFL	13.46	13.46	(.97)		
2. Meaningful Work	32.42	6.53	.45	(.84)	
3. PAWS	29.09	8.26	.57	.67	(.97)

Note. $N = 319$. TFL = transformational leadership; PAWS = positive affective well-being. Cronbach's alphas appear in parentheses on the diagonal. $r > .12$, $p < .05$; $r > .17$, $p < .01$.

Table 2
Study 1: Results of the Model Tests

Model	Without controls					With controls				
	χ^2	*df*	RMSEA	NFI	CFI	χ^2	*df*	RMSEA	NFI	CFI
A (measurement)	398.12	186	.060	.95	.97	707.42	241	.080	.95	.96
B (fully mediated)	440.18	187	.065	.94	.97	772.24	242	.084	.95	.96
C (partially mediated)	398.12	186	.060	.95	.97	707.42	241	.080	.95	.96
D (nonmediated)	467.57	187	.069	.94	.96	793.82	241	.079	.95	.96

Note. RMSEA = root mean square error of approximation; NFI = normed fit index; CFI = comparative fit index.

test the mediation hypothesis, we were guided by Kelloway's (1998) sequence of mediation tests. This sequence models the proposed mediation model, a partially mediated model (i.e., the proposed model with the addition of a direct path from transformational leadership to psychological well-being), and a nonmediated model (i.e., a direct relationship between transformational leadership and psychological well-being, with no path from meaningful work to psychological well-being). Differences between the models were assessed through both the chi-square difference test and the change in the CFIs.

The partially mediated model provided a marginally better fit to the data than the fully mediated model, $\Delta\chi^2(1, N = 319) = 42.06, p < .05$; ΔCFI = 0.0, and a better fit than the nonmediated model, $\Delta\chi^2(1, N = 319) = 69.45, p < .01$; ΔCFI = 0.1. Moreover, all three paths comprising the partially mediated model were significant. Positive affective well-being was predicted by both meaningful work ($\beta = 0.58, p < .01$) and transformational leadership ($\beta = 0.31, p < .01$). Transformational leadership also predicted perceptions of meaningful work ($\beta = 0.48, p < .01$). All model parameters for the partially mediated model are presented in Table 3, and the final model appears in Figure 1.

Discussion

Although encouraging, the results of this study offered only partial support for the hypothesized mediational relationship. In Study 2, we conducted a constructive replication of this model based on (a) different operationalizations of the key constructs, (b) more rigorously controlled analysis, and (c) the inclusion of potentially confounding, theoretically relevant variables, such as individual differences.

Study 2

Participants and Procedure

The participants in this study were funeral directors and dental hygienists. One Canadian and one international funeral association, a national corporate funeral home, and three local funeral homes were contacted by e-mail, by telephone, and in person and told about the purpose of the study. A total of 273 participants expressed interest in the study and were mailed survey packages; 95 surveys were returned

Table 3
Study 1: Standardized Parameters for the Partially Mediated Model

Item	Meaning	Leadership	Well-being
1	0.62		
2	0.75		
3	0.71		
4	0.69		
5	0.82		
6	0.83		
7		0.82	
8		0.89	
9		0.87	
10		0.91	
11		0.88	
12		0.86	
13		0.94	
14		0.96	
15		0.91	
16			0.87
17			0.87
18			0.94
19			0.94
20			0.94
21			0.91
Structural parameters			
Well-being	0.58	0.31	
Meaning		0.48	

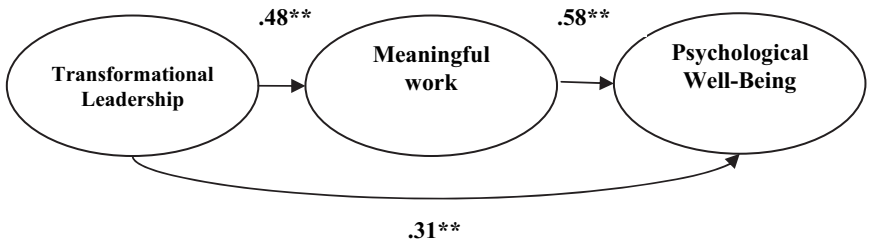

Figure 1. Study 1: Final model with significant pathways of focal variables. $^{**}p < .01$.

completed (35% response rate). The second occupation represented in this study is dental hygienists. A regional association and four local dentist offices were contacted to recruit participants. Procedures were similar to those used with funeral directors, and the survey package was the same. Of the 107 survey packages distributed to hygienists, 51 were returned (48% response rate).

Descriptive information for the participants in each of the two samples as well as the sample as a whole is found in Table 4. Tests for the equality of the covariance matrices supported the validity of treating the two samples together: There were no significant differences between the covariance matrices, $\chi^2(6, N = 146) = 11.39, p > .05$, suggesting that these two samples could be combined without introducing sample-specific bias into the analyses.

Measures

Transformational leadership. We used the eight highest loading items (two from each of the four dimensions of transformational leadership—idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration) from the Multifactor Leadership Questionnaire (Bass & Avolio, 1995) to measure transformational leadership. Participants were asked to rate how often their supervisor engages in behaviors specific to each dimension. The items are measured on a 5-point scale ranging from 0 (*not at all*) to 4 (*frequently, if not always*), where a higher scale score would indicate that a respondent perceived his or her supervisor to exhibit more transformational leadership behaviors. The mean score on the eight items was used in this study, consistent with evidence of high correlations between the four components (Bycio, Hackett, & Allen, 1995; Carless, 1998). Analysis of the responses in the current sample supported this interpretation: Items divided into subscales representing the four components of transformational leadership yielded high intercorrelations (average $r = .76$). The reliability of the aggregated measure was .93.

Table 4
Study 2: Demographic Information and Response Rates for the Two Occupational Samples

Variable	Funeral directors	Dental hygienists	Full sample
Age (in years)	39.73	34.73	37.97
Length of time with supervisors (in years)	5.73	5.08	5.50
% female	27	92	50
No. of surveys returned	95	51	146
Response rate (%)	35	48	39

Meaningful work. Meaningful work was conceptualized as finding a purpose in work that transcends the financial. The four items developed for the purpose of this study included "The work I do in this job is fulfilling," "The work I do in this job is rewarding," "I do not achieve important outcomes from the work I do in this job" (reverse-scored), and "I am able to achieve important outcomes from the work I do in this job." Respondents rated these items on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), whereby a higher score indicated greater perceived meaning derived from work. The measure had adequate internal consistency ($\alpha = .84$).

Psychological well-being. This variable was measured using the six positively worded items from the General Health Questionnaire (Goldberg, 1972; Mullarkey, Wall, Warr, Clegg, & Stride, 1999). Participants were asked to identify how often (in the past 3 months) they had experienced various symptoms; examples of these items included "Been able to concentrate on whatever you are doing?" and "Been able

to enjoy your day to day activities?" Although most commonly used in its 12-item form to detect minor psychiatric disorders (e.g., Hardy, Shapiro, Haynes, & Rick, 1999), a recent large sample analysis (Shevlin & Adamson, 2005) suggested an alternative three-factor framework (Anxiety-Depression, Social Dysfunction, and Loss of Confidence), with the items used in the current study constituting the social functioning component. The response scale ranged from 1 (*never*) to 4 (*all the time*), with higher scores indicating more positive psychological well-being. The reliability of this scale was .89.

Control variables. As well-being has been found to fluctuate with age and gender, we controlled statistically for these variables (Keyes, Shmotkin, & Ryff, 2002). We also controlled for occupation and length of time working with the current supervisor. A reason to control for the latter variable is that relationships with supervisors generally take time to develop, thus controlling for familiarity with the supervisor was important. As the two occupations were split along gender lines (i.e., funeral directors were generally male and dental hygienists were generally female), we collapsed the analyses across gender and instead controlled for occupational group.

In addition to these demographic variables, we also controlled for humanistic work values (Buchholz, 1977, 1978): values an individual holds about work that include that work should be fundamentally fulfilling and meaningful. The notion here is that respondents' perceptions of the meaning of their own specific work may in part be a function of their normative beliefs about work in general, and we wanted to statistically control for this individual difference. Participants were asked to think about "work in general" and rate five items on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*): Work can be made meaningful, work should enable one to learn new things, work can be organized to allow for human fulfillment, work can be made interesting rather than boring, and work should be a source of new experiences. A higher mean score indicated more humanistic work values. Coefficient alpha for the scale was .86.

Results

In Table 5, we present the descriptive statistics and intercorrelations for all study variables. Consistent with Hypothesis 1, transformational leadership was positively associated with psychological well-being ($r = .29$, $p < .01$).

First, we conducted a confirmatory factor analysis hypothesizing four correlated factors representing the variables tested (i.e., transformational leadership, meaningful work, psychological well-being, and humanistic work values). A four-factor oblique model provided the best fit to the data, $\chi^2(224, N = 146) = 395.36$, $p < .01$, RMSEA = .066, standardized root mean residual (SRMR) = .073, CFI = .91.

Next, we tested the proposed model using a series of structural equation models as implemented in LISREL 8.3 (Jöreskog & Sörbom, 1999) and derived from covariance matrices generated in PRELIS 2. We considered the indirect relationship between transformational leadership and psychological well-being as mediated by meaningful work, with the other variables (age, occupation, tenure with supervisor, humanistic work values) as controls. Given the modest sample size, we used observed variable path analysis with scale scores as indicators for each construct in the model and corrected for imperfect scale reliability by fixing the unique factor loadings to values equal to one minus the reliability multiplied by the variance of the observed score (Kelloway, 1998).

Table 5
Study 2: Descriptive Statistics and Intercorrelations for All Study Variables

Variable	*M*	SD	Range	1	2	3	4	5	6	7
1. Age (in years)	37.97	10.34	18–64	—						
2. Occupation	0.65	0.48	0–1	.23	—					
3. Time with supervisor (in years)	5.50	5.14	0–26	.34	.06	—				
4. Humanistic work values	6.38	.59	4.60–7.00	.32	.16	.25	(.86)			
5. Transformational leadership	2.26	1.01	0–4.00	.23	.14	.06	.28	(.93)		
6. Meaningful work	5.88	0.96	1.25–7.00	.15	.35	.10	.23	.39	(.84)	
7. Psychological well-being	3.20	0.45	1.67–4.00	.29	.03	.32	.33	.29	.44	(.89)

Note. $N = 134–146$. Correlations above .23 are significant at the .01 level. Within occupation, funeral director = 1; dental hygienist = 0. Cronbach's alphas appear in parentheses on the diagonal.

To test the mediation hypothesis, we were again guided by Kelloway's (1998) sequence of mediation tests. This sequence models the proposed mediation model, a partially mediated model (i.e., the proposed model with an addition of a direct path from transformational leadership to psychological well-being), and a nonmediated model (i.e., a direct relationship between transformational leadership and psychological well-being, with no path from meaningful work to psychological well-being). However, as the partially mediated model in this case uses all available degrees of freedom, it produces perfect fit to the data and no comparison point for the more constrained fully mediated model and nonmediated models. To provide a point of comparison, we fixed the correlation between occupational group and tenure with supervisor to zero; it was not statistically significant in the sample and reflected the relationship between two control variables. With this correlation fixed, we were able to provide a comparison point for the other nested models (summarized in Table 6) using the chi-square difference test (Kelloway, 1998).

The mediational model presented in Figure 2 provided strong fit to the data, $\chi^2(2, N = 146) = .90$, $p > .05$, RMSEA = 0, SRMR = .011, CFI = 1.00. Addition of the direct path from transformational leadership to psychological well-being (i.e., the partially mediated model) did not yield a better fitting model, $\Delta\chi^2(1, N = 146) = .18$, $p > .05$. The path between transformational leadership and psychological well-being was not significant ($\beta = 0.04$, $p > .05$). The nonmediational model (i.e., removal of path from meaningful work to psychological well-being) produced a worse fit to the data than did the proposed model, $\Delta\chi^2(1, N = 146) = 20.03$, $p < .01$, RMSEA = .26, SRMR = .06, CFI = .86.

The tests of these three structural models suggested that the fully mediated model provided the best fit for the data, supporting Hypothesis 2. The standardized parameter estimates for relationships between transformational leadership, meaningful work, and psychological well-being appear in Figure 2. Controlling for age, time with supervisor, occupational group, and humanistic work values, psychological well-being ($\beta = 0.49$, $p < .01$) was predicted by meaningful work, which in turn was predicted by transformational leadership ($\beta = 0.36$, $p < .01$). In terms of control variables, age was not significantly related to either meaningful work or psychological well-being (βs = -0.08 and 0.15, ps $> .05$, respectively); years with supervisor was not related to meaningful work ($\beta = 0.07$, $p > .05$), but was positively related to psychological well-being ($\beta = 0.18$, $p < .05$); occupational status (funeral director = 1; dental hygienist = 0) was positively related to meaningful work ($\beta = 0.33$, $p < .01$) and negatively related to psychological well-being ($\beta = -0.21$, $p < .05$); and humanistic work values were not related to meaningful work ($\beta = 0.10$, $p > .05$), but were positively related to psychological well-being ($\beta = 0.20$, $p < .05$). The overall model explained 31% of the variance in meaningful work and 41% of the variance in psychological well-being.

As a formal test of the mediation model, we then conducted a Sobel test for indirect effects (Sobel, 1982) by using the calculator presented at http://www.psych.ku.edu/preacher/sobel.htm#refs (accessed May 23, 2007). The results supported a significant indirect effect of transformational leadership on psychological well-being (Sobel = 3.35, $p < .01$), after controlling for meaningful work.

Table 6
Study 2: Results of the Model Tests

Model	χ^2	*df*	RMSEA	SRMR	CFI
Measurement	395.36	224	.066	.073	0.91
Fully mediated	0.90	2	0	.011	1.00
Partially mediated	0.72	1	0	.012	1.00
Nonmediated	20.93	2	.26	.060	0.86

Note. RMSEA = root mean square error of approximation; SRMR = standardized root mean residual; CFI = comparative fit index.

General Discussion

Both studies reported here found that transformational leadership of supervisors exerted a positive influence on the psychological well-being of workers. Perceiving work as meaningful appears to play a role in explaining this positive relationship. In two separate studies using different measures of psychological well-being (Study 1, affective well-being; Study 2, mental health), the results were similar. These studies extend our understanding of the positive effects of transformational leadership, and practical application of the current results suggests that leadership training in this area could be associated with an increase in the psychological well-being of followers (Barling, Weber, & Kelloway, 1996; Kelloway & Barling, 2000).

The difference in the findings between Studies 1 and 2 deserves some comment. One possible reason that we found full mediation in Study 2 and partial mediation in Study 1 is that in the second study we

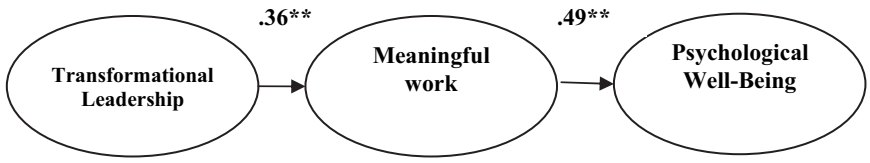

Figure 2. Study 2: Final model with significant pathways of focal variables. For ease of presentation, parameter estimates for age, occupation, time with supervisor, and humanistic work values appear in the text and are not depicted here. $^{**}p < .01$.

were able to control for more variables. It is possible that humanistic work values (the normative beliefs individuals hold about whether work should be meaningful) is an important influence on the likelihood of finding meaning in current work and psychological well-being. Second, it is possible that the use of different operationalizations of meaningful work is the source of the different findings. Future research should focus on distinguishing different conceptualizations of meaningful work and the construction of measurement scales for this variable. Third, it is possible that the different conceptualizations of psychological well-being are the root of the different findings. Although both measures used represent facets of psychological well-being, emotions may be more fleeting than an individual's level of mental health, and hence there may be more potential influences on this aspect of psychological well-being. The final potential reason for the difference in findings is that the participants in each study worked in different occupations. Health care workers whose occupations may be seen as valued occupations (i.e., caregivers) were the focus in Study 1. In Study 2, participants in stigmatized work roles (Ashforth & Kreiner, 1999) took part, and the results are stronger (i.e., fully mediated relationship). We believe that in these settings it might be easier for a leader to have a positive impact on meaning, as individuals may be more actively attempting to reframe the work due to the stigma attached (Ashforth & Kreiner, 1999; Wrzesniewski & Dutton, 2001). Examining this model in different settings is an important avenue for future research. Despite these differences in findings, the indirect relationships found using different measures and different occupational groups provide broad support for this model.

In the current studies, there are several limitations worth noting. First, all the data are cross-sectional. The hypothesized relationships (mediational effects) are conceptualized as causal, yet our data do not allow tests of causality. This means that we cannot rule out the possibility that these relationships might work in the opposite direction to what we have suggested. We believe that the model presented is plausible, given theory and past empirical research, yet there are other alternatives that should be explored in future research. For example, perhaps these findings are the result of a process whereby healthy individuals perceive life events in more positive terms and rate their supervisors more positively in general (e.g., see Taylor & Brown, 1988, 1994). Another possibility is that perceptions of meaningful work moderate the relationship between transformational leadership and psychological well-being. Second, in both studies, the data were derived from a single source such that that monomethod bias may be an issue. However, this may not be a serious threat to the validity of the results, as a more consistent pattern of significant correlations between variables in both studies would be expected if monomethod bias was a serious threat (Lindell & Whitney, 2001). Also, in both studies a one-factor measurement model (Podsakoff & Organ, 1986) proved to be a poor fit to the data. Third, we were not able to include measures of personality in our study. Although we do believe that controlling for humanistic work values in Study 2 has mitigated this limitation to some extent, there is the potential that other individual differences (e.g., neuroticism) might have affected the results had they been included. Finally, the sampling procedure used in Study 2 made it impossible to determine the extent to which nonresponders differed significantly from those who responded.

In conclusion, these studies have found a positive relationship between transformational leadership and psychological well-being that was mediated or partially mediated by the meaning found in work. These are two of the first studies to empirically investigate mechanisms linking transformational leadership and psychological well-being. As such, the results provide broad empirical evidence to support one of the

central tenets of transformational leadership theory—that leaders can transform followers' beliefs to enhance well-being.

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