

INNOVATIVE BEHAVIOR IN THE WORKPLACE: THE ROLE OF PERFORMANCE AND IMAGE OUTCOME EXPECTATIONS

FEIRONG YUAN
The University of Kansas

RICHARD W. WOODMAN
Texas A&M University

Why do employees engage in innovative behavior at their workplaces? We examine how employees' innovative behavior is explained by expectations for such behavior to affect job performance (expected positive performance outcomes) and image inside their organizations (expected image risks and expected image gains). We found significant effects of all three outcome expectations on innovative behavior. These outcome expectations, as intermediate psychological processes, were shaped by contextual and individual difference factors, including perceived organization support for innovation, supervisor relationship quality, job requirement for innovativeness, employee reputation as innovative, and individual dissatisfaction with the status quo.

The importance of innovation for organizational effectiveness is widely accepted (e.g., Janssen, Van De Vliert, & West, 2004; Van de Ven, 1986; Woodman, Sawyer, & Griffin, 1993). In particular, employee innovative behavior (e.g., developing, adopting, and implementing new ideas for products and work methods) is an important asset that enables an organization to succeed in a dynamic business environment (Kanter, 1983; West & Farr, 1990a). A variety of factors have been studied as important antecedents to individuals' innovation, such as organization culture and climate (e.g., Scott & Bruce, 1994), relationship with their supervisors (e.g., Janssen & Van Yperen, 2004), job characteristics (e.g., Oldham & Cummings, 1996), social/group context (e.g., Munton & West, 1995), and individual differences (e.g., Bunce & West, 1995). Yet research evidence regarding the intermediate psychological processes that would explain how and why different individual and contextual antecedents affect innovative behavior remains inconclusive and underdeveloped (Shalley, Zhou, & Oldham, 2004; West & Farr, 1989).

One relevant psychological aspect suggested by previous studies is an individual's intrinsic interest in his or her task, which would positively affect

individual creativity (Amabile, 1996; Woodman et al., 1993). Since generating creative ideas is a component of innovation behavior, the intrinsic interest factor could also be useful in explaining employee innovation. However, innovation is a risky endeavor. Engaging in innovative acts in a workplace brings benefits and costs for employees beyond a sense of intrinsic enjoyment (Janssen, 2003; Janssen et al., 2004). In their conceptual model, Farr and Ford (1990) identified expected payoffs as an important proximal antecedent to individual innovation. Yet few studies have directly theorized and tested the effects of these expectations. For example, Scott and Bruce (1994) examined how contextual and individual difference variables impact innovative behavior through the perceptions of organization climate for innovation, which was conceptualized as affecting innovative behavior because it signals expectations and potential outcomes of behavior (Scott & Bruce, 1994). This important study integrated a number of antecedents to individual innovation. But still, like the majority of other innovation studies, Scott and Bruce's work did not examine the nature of these outcome expectations and their effects on individual innovation.

People act on the basis of consequences or, more specifically, the expected consequences of their behavior, according to behavioral theories such as the expectancy theory of motivation (Vroom, 1964). Although prior research has suggested that expected payoffs or outcomes of innovative behavior can be important psychological considerations behind individual innovation, studies that directly theorize and test the effects of these outcome expectations are conspicuously missing. Scholars still lack a

This investigation was funded in part by the Mays Business School of Texas A&M University and the University of Kansas General Research Fund, allocation #2302044. We thank our editor and the three anonymous reviewers for their insightful suggestions. We thank Wendy Boswell, Wendy Wood, Jing Zhou, Jim Guthrie, Haiyang Li, Shung Jae Shin, Michael West, Doug May, Jay Lee, Catherine Schwoerer, Bert Cannella, and Hui Liao for their valuable comments and suggestions on drafts of this article.

good understanding of what consequences are important for innovative behavior and how the expectations for these consequences affect employee innovation in the workplace.

Drawing from two theoretical perspectives in the innovation literature, the efficiency-oriented perspective and the social-political perspective, in this study we examine how an employee's innovative behavior is affected by his or her expectations for such behavior's potential influence on job performance (*expected positive performance outcomes*) and his or her image inside the organization (*expected image risks* and *expected image gains*). Further, we examine how these performance and image outcome expectations, as intermediate psychological processes, are shaped by distal contextual and individual difference antecedents. The major contributions of this study are twofold. First, this study is the first attempt to directly theorize and test the major outcome expectations associated with innovative behavior. Revealing these expectations contributes to understanding of *why* employees innovate in a workplace. Second, by testing the relationship between distal antecedents and outcome expectations, this study sheds light on how contextual and individual difference factors could affect employee innovation indirectly by shaping these intermediate psychological processes. Findings on these processes both contribute to theory development on individual innovation and help to suggest possible interventions to encourage employee innovation.

EXPLAINING INNOVATIVE BEHAVIOR USING PERFORMANCE AND IMAGE OUTCOME EXPECTATIONS

Drawing on West and Farr (1989, 1990b), we define innovative behavior as an employee's intentional introduction or application of new ideas, products, processes, and procedures to his or her work role, work unit, or organization. Examples of such behavior include searching out new technologies, suggesting new ways to achieve objectives, applying new work methods, and investigating and securing resources to implement new ideas. In keeping with Kanter (1988), Janssen (2000), and Scott and Bruce (1994), we conceptualize innovative behavior as complex behavior consisting of activities pertaining to both the generation/introduction of new ideas (either by oneself or adopted from others) and the realization or implementation of new ideas. One related construct in the literature is creative behavior, which refers to behavior pertaining to the generation of ideas that are both novel and useful (Amabile, 1988; Oldham & Cummings, 1996). Creative behavior can be considered

as one type of innovative behavior because innovative behavior includes not only generating novel ideas by oneself but also adopting others' ideas that are new to one's organization or work unit (Woodman et al., 1993). Also, creative behavior concerns new idea generation, whereas innovative behavior includes both the generation and implementation of new ideas (Shalley et al. 2004; Zhou, 2003).

Most innovation research has followed what we call the efficiency-oriented perspective, in which it is *assumed* that organizations make rational decisions in adopting innovation to maximize their efficiency gains (see Abrahamson [1991] and Rogers [1983] for reviews on this dominant perspective, which was the implicit assumption underlying most early studies on innovation adoption and diffusion). This efficiency-oriented perspective is in part responsible for the proinnovation bias (that is, the view that innovation is beneficial for organizations and individuals) in the existing literature (Farr & Ford, 1990; Kimberly, 1981; Van de Ven, 1986). Several slightly different descriptive labels (e.g., "rational models," "efficiency-choice perspective") are also used in the literature for what we call the efficiency-oriented perspective. In each case, the underlying assumption is that innovations serve the economic function of improving efficiency and that innovation decisions are based on expected positive performance outcomes.

More recently, innovation research has started to pay attention to social-political processes (Dean, 1987; Dyer & Page, 1988; Wolfe, 1994) that shed light on how innovation is actually carried out in the real world rather than how it should be done. In particular, studies have shown the importance of image or legitimacy considerations in explaining innovation adoption decisions (e.g., Tolbert & Zucker, 1983; Westphal, Gulati, & Shortell, 1997). Similarly, in his theoretical framework, Abrahamson (1991) suggested that the innovation process can be understood as "fad" or "fashion" whereby innovations have sometimes been adopted for their symbolic meaning, such as signaling innovativeness, rather than to boost organizations' economic performance. We refer to this alternative view as the social-political perspective; it emphasizes the symbolic function of innovative acts and the influence of image considerations on innovation decisions beyond an efficiency calculation.

Wolfe (1994), in his review of the innovation literature, pointed out that one important barrier to knowledge accumulation in innovation research is that researchers have limited their scope of inquiry by working within a single theoretical perspective. He noted that "the adoption of a single perspective, whatever that might be, limits the scope of a researcher's inquiry and thus limits the extent to

which he/she can capture the innovation process, one which is complex, nonlinear, tumultuous, and opportunistic” (Wolfe, 1994: 416). Abrahamson (1991) suggested that one way to overcome this barrier is to combine multiple perspectives so that each captures some aspect of the complex innovation process. Following this approach, in the following sections we draw from both the efficiency-oriented perspective and the social-political perspective to theorize about the outcome expectations associated with innovative behavior. The efficiency-oriented perspective provides insight into the effect of expected positive performance outcomes; the social-political perspective provides insight into the effects of expected image risks and expected image gains on innovative behavior.

Expected Positive Performance Outcomes: The Efficiency-Oriented Perspective

One major reason people innovate in the workplace is to bring performance gains. New technologies are introduced and new work methods are applied because these are “better” than the existing ones and are expected to bring performance improvement and efficiency gains. Such a belief in performance gains reflects the dominant efficiency-oriented perspective in the innovation literature, according to which the goal of technical efficiency guides innovation adoption and diffusion (Abrahamson, 1991; Rogers, 1983; Wolfe, 1994). Although the efficiency-oriented perspective has been the dominant perspective in the field, the effect of expected performance gains on innovation has been mostly implicitly assumed rather than explicitly studied in the literature. In particular, little research evidence exists to explain whether and how the expectation for positive performance outcomes affects employee innovative behavior in the workplace.

Expected performance outcomes are positive when employees believe that their innovative behaviors will bring performance improvement or efficiency gains for their work roles or work units. The concept of efficiency usually refers to an input-output ratio or comparison (Ostroff & Schmitt, 1993; Pennings & Goodman, 1977). Here we define “efficiency” broadly and use the term synonymously with “performance” to describe objective or actual task performance. Specific examples of positive performance outcomes include increased productivity and work quality, decreased error rate, increased ability to achieve goals and objectives, and improved general job performance. Obviously, relevant performance dimensions vary across different job positions, and people weigh various aspects of performance in different ways. What constitutes pos-

itive performance outcomes, therefore, is subjectively defined by each particular employee.

Improved efficiency and job performance increase the competitiveness and success of an employee. Following the efficiency-oriented perspective in understanding innovation, we contend that employees are more likely to engage in innovative behavior when they expect such behavior to benefit their work. Figure 1 depicts this hypothesized relationship, along with the others comprising our theoretical model.

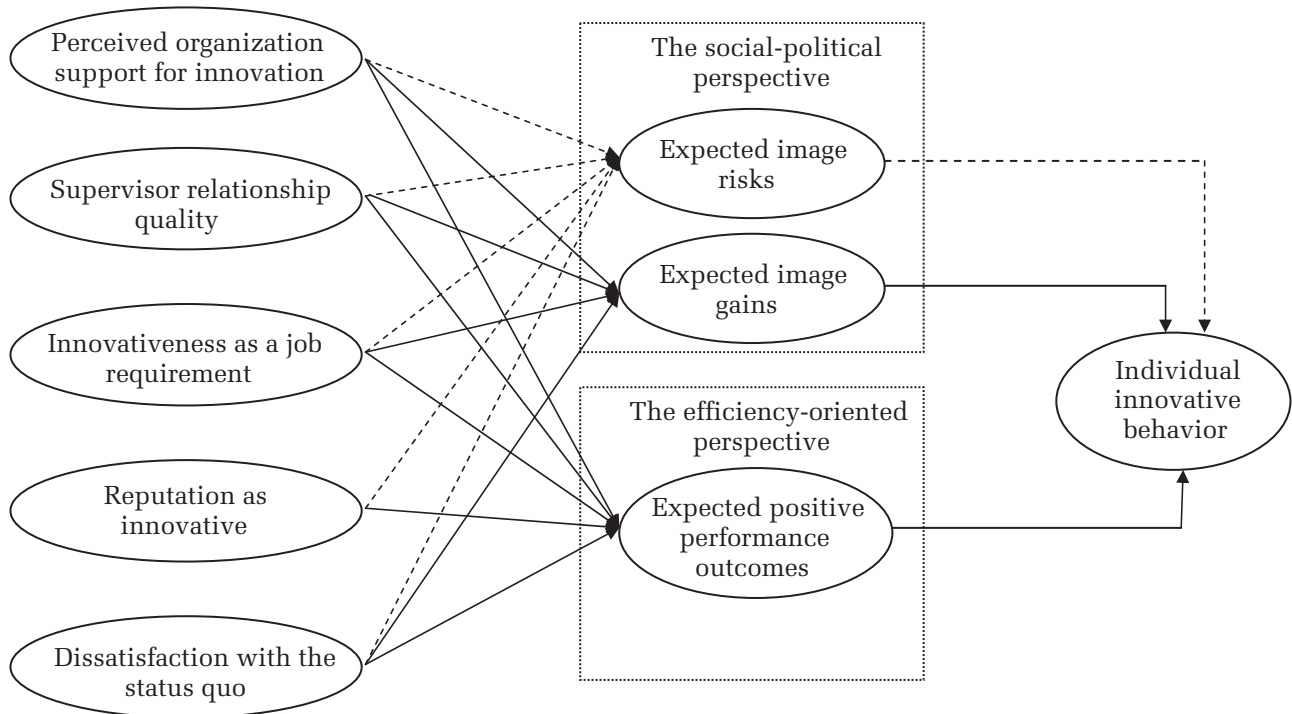
Hypothesis 1. Expected positive performance outcomes are positively related to innovative behavior.

Expected Image Risks and Expected Image Gains: The Social-Political Perspective

People’s reality is, at least partially, socially constructed. Individual behaviors have both technical and symbolic functions. Regardless of whether the introduction of new ideas or procedures will help to improve efficiency or performance, the act of engaging in innovative behaviors is a signal; it conveys information about an actor to the social context. Other people’s potential perceptions or impressions are important determinants of individual behavior because such impressions influence others’ reactions to the actor and therefore the possibility for the actor to get necessary resources and social support to achieve goals (Leary & Kowalski, 1990; Tedeschi & Riess, 1981). The literature in impression management supports the importance of image considerations in influencing a variety of behaviors in organizations, such as feedback seeking (Ashford & Northcraft, 1992), organizational citizenship behaviors (Rioux & Penner, 2001), and issue selling (Ashford, Rothbard, Piderit, & Dutton, 1998).

In research on innovation, image concerns and related social-political processes have received growing attention in organization-level studies (e.g., Arndt & Bigelow, 2000; Tolbert & Zucker, 1983; Westphal, Gulati, & Shortell, 1997). Although image and impression management issues have been addressed less in research undertaken at the individual level, anecdotal evidence suggests these issues affect employee innovative behavior at work. For example, in West’s (1989) study of community nurses, participating nurses listed “other’s reaction” as an important concern that prevented them from being innovative. In a product design firm, Sutton and Hargadon (1996) found that design engineers used brainstorming sessions as “prestige” or “status auctions”—that is, as opportunities to impress their peers and establish favorable social images.

FIGURE 1
Explaining Innovative Behavior using Performance and Image Outcome Expectations:
The Theoretical Model^a



^a Solid lines represent relationships hypothesized to be positive. Dashed lines represent relationships hypothesized to be negative.

One basic distinction in the impression management literature is that between defensive and assertive impression management (Arkin, 1981; Schlenker, 1980). Tetlock and Manstaed provided a good discussion of this distinction: “Defensive impression management is designed to protect an individual’s established social image; it is triggered by negative affective states (e.g., embarrassment, shame). Assertive impression management is designed to improve an individual’s social image; it is triggered by self-enhancing motives activated by perceived opportunities for creating favorable impressions on others” (1985: 61). The difference between avoiding image risks and pursuing image gains, therefore, is not a matter of degree. They represent different affective states and individual motives (“getting along” vs. “getting ahead”) (Wolfe, Lennox, & Cutler, 1986).

Following the social-political perspective in understanding innovation, and in keeping with the impression management literature, we contend that both types of impression management may affect employee innovative behavior. First, potential image risks will constrain employee innovativeness. An employee may choose to “play it safe” and avoid “rock-the-boat” innovative behaviors in order to look socially appropriate and to prevent negative social

evaluations. This tendency to avoid image risks represents the self-protective or defensive impression management motive. Secondly, employees may engage in innovative behaviors as a deliberate effort to improve image. An employee may suggest new ideas to a supervisor in order to appear competent and conscientious. Engaging in innovative behavior to pursue image gain represents the acquisitive or assertive impression management motive.

Hypothesis 2. Expected image risks are negatively related to innovative behavior.

Hypothesis 3. Expected image gains are positively related to innovative behavior.

Distal Antecedents Related to Performance and Image Outcome Expectations

Both the organizational context an employee is embedded in and the individual characteristics of this employee affect his or her belief about what consequences will result from his or her innovative behavior. As proximal psychological processes, performance and image outcome expectations are shaped by distal contextual and individual difference antecedents. Examining the relationship between distal antecedents and these outcome expect-

tations is important, because it explains the sources of variance among individuals in their outcome expectations and sheds light on how these antecedent factors may affect employee innovation indirectly by shaping these intermediate processes.

West and Farr's (1989) theoretical framework of individual innovation presents five major types of factors as important for understanding individual innovation at work: organizational factors, relationships at work with one's supervisor, job characteristics, group or social factors, and individual characteristics. In keeping with these conceptual angles, we examine how the following contextual and individual difference factors shape an employee's performance and image outcome expectations: perceived organization support for innovation, supervisor relationship quality, innovativeness as a job requirement, reputation as innovative, and individual dissatisfaction with the status quo. From the efficiency-oriented perspective, these five factors capture, from different angles, how organizational values and beliefs, supervisor support, the specific nature of an employee's job, his or her personal reputation, and his or her dissatisfaction with the performance condition of an organization could affect the employee's belief that his or her innovative behavior will bring performance gains. From a social-political perspective, these antecedents depict major social and political factors in the employee's work environment that define what is appropriate, what is desirable, and what resources and opportunities the individual has to both protect and advance him- or herself in the organization, all of which influence the employee's assessment of the potential image risks and image gains associated with innovative behavior.

It is important to note that many contextual and individual difference factors conceptualized as distal antecedents in our model have been examined in prior research with regard to their relationships with each other. For example, Scott and Bruce's (1994) model of innovative behavior tested how leader-member exchange affects support for innovation, which in turn affects innovative behavior. Two similar constructs, supervisor relationship quality and perceived organization support for innovation, are examined in our study. The major focus of the current study, however, was not theorization about and testing of the relationships among these antecedents. Instead, we focused on how these distal antecedents relate to performance and image outcome expectations, which was what was missing from the existing literature. At the same time, we recognized that relationships exist among these distal antecedents, and we accounted

for these relationships by allowing these distal variables to covary when testing our model.

Perceived organization support for innovation.

Organization climate is an important contextual factor that signals expectations for behavior and potential outcomes of these behaviors (James, Hartman, Stebbins, & Jones, 1977). From a social-political perspective, organization support for innovation, which can manifest as a proinnovation climate or culture (Amabile, 1988; Kanter, 1988; Scott & Bruce, 1994), delivers organizational values and norms that affect the potential image gains and image risks associated with employee innovative behavior. If an organization's norms favor change, rather than tradition for its own sake, its members will seek to initiate change to be culturally appropriate (Farr & Ford, 1990). An organization climate for innovation delivers "expectancies" and "instrumentalities" (Scott & Bruce, 1994) so that organization members understand that being innovative is a desirable image and engaging in innovative behavior will make them look good (that is, higher expectations for image gains exist). Moreover, a proinnovation climate encourages innovative behavior because it legitimates experimentation (West & Wallace, 1991), creates psychological safety for trial and error, and reduces the image risk involved in innovation attempts (Ashford et al., 1998).

Members in an organization with strong support for innovation will also perceive their innovative behavior as more beneficial in bringing performance gains. From an efficiency-oriented perspective, a favorable organization climate for innovation communicates the need for change and demonstrates the belief that innovation will make the organization more efficient and successful. These values and beliefs, ingrained in the culture of the organization, will be transmitted to and become internalized by employees through the organization's socialization processes (Chatman, 1991; Harrison & Carroll, 1991). Employees working in organizations with strong support for innovation, therefore, are more likely than those not in such organizations to share the belief that innovation is valuable and will bring performance gains.

Hypothesis 4a. Perceived organization support for innovation is positively related to expected positive performance outcomes of innovative behavior.

Hypothesis 4b. Perceived organization support for innovation is negatively related to expected image risks in innovative behavior.

Hypothesis 4c. Perceived organization support for innovation is positively related to expected image gains from innovative behavior.

Supervisor relationship quality. In addition to the organization context, an employee's relationship with his or her supervisor represents an important aspect of the immediate work environment that influences the employee's belief in the possible performance and image outcomes of his or her innovative attempts. Leader-member exchange (LMX) theory (Graen, 1976; Graen, Novak, & Sommerkamp, 1982; Graen & Uhl-Bien, 1995) suggests that subordinates who have high-quality relationships with their supervisors are given greater resources, decision latitude, and freedom in return for greater loyalty and commitment. Contemplating and experimenting with innovative ideas to improve existing products and processes often require additional time, resources, and freedom at work (Kanter, 1988). Greater resources and support from a supervisor increase the odds that innovative behavior will be successful. From an efficiency-oriented perspective, therefore, employees with high-quality relationships with their supervisors are likely to be more confident that their innovative behavior will result in performance and efficiency gains.

A high-quality relationship with a supervisor, characterized by mutual trust and respect (Graen & Uhl-Bien, 1995), also constitutes a valuable political resource that increases potential image gain and reduces potential image loss for an innovative employee. The desire and motivation of an individual influence what he or she perceives (Gilbert, 1998; Markus & Zajonc, 1985). Studies in human resource management have observed that supervisors tend to evaluate the employees they like and trust in a more positive way (Judge & Ferris, 1993; Wayne & Liden, 1995). Therefore, when a supervisor trusts and respects an employee, she or he is more likely to evaluate this employee's new ideas favorably (Zhou & Woodman, 2003) and believe these ideas are meaningful and significant, resulting in greater possibilities of image gain. Moreover, research on attribution biases suggests that when a supervisor likes or empathizes with an employee, he or she is more likely to attribute positive behavior outcomes to the employee's disposition and negative outcomes to the employee's situation (Green & Mitchell, 1979; Regan & Totten, 1975). Therefore, employees who are trusted and liked by their supervisors will feel more secure when engaging in innovative behavior and expect less image risk because their supervisors are less likely to hold them responsible for a failed innovative attempt.

Hypothesis 5a. Supervisor relationship quality is positively related to expected positive performance outcomes of innovative behavior.

Hypothesis 5b. Supervisor relationship quality is negatively related to expected image risks in innovative behavior.

Hypothesis 5c. Supervisor relationship quality is positively related to expected image gains from innovative behavior.

Innovativeness as a job requirement. An employee's official work role is another contextual factor that could affect the potential consequences of the employee's innovative behavior. Kanter (1988) suggested that the obligations of one's position can serve as an initial impetus that activates innovation. From an efficiency-oriented perspective, a job requirement for innovation explicitly specifies the relevance of innovative behavior to successful performance. Compared with others, employees who perceive innovativeness as part of their job requirements are therefore more likely to believe that generating, adopting, and implementing innovative ideas will benefit their work. At the same time, from a social-political perspective, a job requirement for innovativeness also represents external demand and expectations for innovativeness, which legitimize the job incumbent's innovative behavior. Moreover, research has suggested that an audience tends to evaluate change-initiated behaviors (e.g., issue selling, innovation) more favorably when they are conducted by people whose functional background or job position supports their behavior (Ashford et al., 1998; Daft, 1978). Therefore, when perceiving innovativeness as part of their job requirements, employees will both feel it is more appropriate to engage in innovative behavior (i.e., have less concern for image risks) and feel more confident that managers and coworkers will consider their new ideas valid and well grounded (i.e., have higher expectations for image gains).

Hypothesis 6a. Innovativeness as a job requirement is positively related to expected positive performance outcomes of innovative behavior.

Hypothesis 6b. Innovativeness as a job requirement is negatively related to expected image risks in innovative behavior.

Hypothesis 6c. Innovativeness as a job requirement is positively related to expected image gains from innovative behavior.

Reputation as innovative. In addition to an employee's organization, supervisor, and official work role, his or her informal social reputation may also

affect the image and performance outcomes expected from innovative behavior. The impression management literature suggests that the impressions people try to create are affected by how they think they are currently regarded by others (cf. Leary & Kowalski, 1990). In particular, people are inclined to present themselves in ways that are consistent with their existing social image (Schlenker, 1980) because people are considered as more socially appropriate and legitimate when their behaviors match others' categorizations and expectations (Zelditch, 2001). From a social-political perspective, therefore, when an employee regarded as innovative engages in innovative behavior, image risk is lower, because the behavior is consistent with the employee's existing social image, which serves to legitimize the behavior and reduce concerns about inappropriateness. A reputable innovative person, though, may not necessarily expect being innovative to further improve her or his image because behaviors that are consistent with one's existing image are likely to maintain the latter (Schlenker, 1980) rather than change it.

Employees who enjoy a reputation for being innovative are also more likely to internalize the value of innovation and more likely to believe that innovative behavior will benefit their work. A social reputation as innovative builds into one's self-concept. Research on the social bases of self-knowledge suggests that self-concepts are shaped by how people believe that others perceive them (Shrauger & Schoeneman, 1979). More importantly, people have a need to maintain a positive view about self because such self-esteem serves as a valuable affective resource in coping with life challenges (Steele's [1988] self-affirmation theory is relevant here). From an efficiency-oriented perspective, therefore, once an individual has a reputation for being innovative and views her- or himself as an innovative person, her/his self-esteem will reinforce the positive view of innovation, strengthening the belief that innovations will make meaningful contributions to performance and work efficiency.

Hypothesis 7a. Reputation as an innovative person is positively related to expected positive performance outcomes of innovative behavior.

Hypothesis 7b. Reputation as an innovative person is negatively related to expected image risks in innovative behavior.

Dissatisfaction with the status quo. Dissatisfaction is an important individual attitude that makes people aware of the need to change (Farr & Ford, 1990) and the value of introducing new ideas. Dissatisfaction with the status quo is defined here as an employee's

dissatisfaction with the current performance condition of his work unit or organization. Such dissatisfaction could arise for a variety of reasons, such as comparisons with competitors, environmental changes, personality traits (e.g., neuroticism), and the discovery of potential improvement opportunities. From an efficiency-oriented perspective, dissatisfaction with the status quo undermines the value of maintaining the current condition and strengthens people's beliefs that new ideas, products, or processes will bring performance gains, resulting in more innovative behaviors.

At the same time, from a social-political perspective, a less satisfactory performance condition of a work unit or organization also serves to justify innovative action, reducing image risks and increasing the chances of image gain. Change is often more legitimized when performance is below a targeted level or perceived as a failure (Lant & Mezas, 1992). Poor performance is a strong force for counteracting persistence in an established mode of operating (Tushman & Romanelli, 1985), making it easier to break down resistance and reducing potential criticisms and image risks associated with rock-the-boat innovative behaviors. Moreover, poor unit or organizational performance provides an opportunity for self-enhancement. When their work unit or organization is less effective, people are more likely to get credit for introducing new technologies and suggesting new ways to achieve objectives. Employees who demonstrate these behaviors are more likely to be considered as conscientious and competent (if not heroic), increasing the potential for image gain.

Hypothesis 8a. Dissatisfaction with the status quo is positively related to expected positive performance outcomes of innovative behavior.

Hypothesis 8b. Dissatisfaction with the status quo is negatively related to expected image risks in innovative behavior.

Hypothesis 8c. Dissatisfaction with the status quo is positively related to expected image gains from innovative behavior.

In sum, our theoretical model suggests that perceived organization support for innovation, supervisor relationship quality, innovativeness as a job requirement, reputation as innovative, and dissatisfaction with the status quo will affect individual innovative behavior indirectly by shaping expected positive performance outcomes, expected image risks, and expected image gains.

Hypotheses 9a, 9b, and 9c. The relationship between perceived organization support for

innovation and individual innovative behavior is mediated by (a) expected positive performance outcomes, (b) expected image risks, and (c) expected image gains.

Hypotheses 10a, 10b, and 10c. The relationship between supervisor relationship quality and individual innovative behavior is mediated by (a) expected positive performance outcomes, (b) expected image risks, and (c) expected image gains.

Hypotheses 11a, 11b, and 11c. The relationship between innovativeness as a job requirement and individual innovative behavior is mediated by (a) expected positive performance outcomes, (b) expected image risks, and (c) expected image gains.

Hypotheses 12a and 12b. The relationship between reputation as innovative and individual innovative behavior is mediated by (a) expected positive performance outcomes, and (b) expected image risks.

Hypotheses 13a, 13b, and 13c. The relationship between dissatisfaction with the status quo and individual innovative behavior is mediated by (a) expected positive performance outcomes, (b) expected image risks, and (c) expected image gains.

METHODS

Sample and Procedures

We surveyed 425 full-time employees and their 96 direct supervisors from four U.S. companies in several different industries (information technology service, computer system development, furniture design/manufacturing, chemical instruments development/manufacturing). Questionnaires were administered via company mail. Completed surveys were mailed back directly to us. We received 287 employee questionnaires (measuring all variables except innovative behavior), which constituted a response rate of 68 percent. No significant difference was found between respondents and nonrespondents with regard to organization membership and job position. We received 84 questionnaires from supervisors (with their ratings on employee innovative behavior and perceptions of the quality of their relationships with subordinates), constituting a response rate of 88 percent. The overall response rate (employees and supervisors combined) was 71 percent. Matching employee and supervisor questionnaires resulted in 238 pairs. In-

complete questionnaires reduced the final usable sample to 216.

Our final sample included employees from a broad cross-section of jobs, including technicians (21%), sales and marketing personnel (20%), production foremen and quality control inspectors (13%), service representatives (7%), R&D scientists and engineers (6%), middle managers (6%), and others such as purchasing agents, human resource personnel, and shipping/stock clerks (27%). The average age range of employee respondents was 40–49 years, and 72 percent of them were men. Seventy-eight percent of the respondents had at least some college, and 38 percent had at least bachelor's degrees. Their average organization tenure was 5.55 years, and their average tenure in their current jobs was 3.25 years.

Measures

Unless otherwise indicated, all measures used a response scale in which 1 was "strongly disagree" and 5 was "strongly agree." The Appendix gives all the scale items.

Individual innovative behavior. This variable was measured by Scott and Bruce's (1994) six-item innovative behavior scale. Each participant's supervisor indicated how characteristic each behavior was of the employee being rated on a scale ranging from 1, "not at all characteristic," to 5, "very characteristic" ($\alpha = .93$).¹ Following Scott and Bruce (1994), we combined the six items to

¹ A total of 73 supervisors rated innovative behavior for 216 employees in the final sample. Fifty of the 73 supervisors provided ratings for multiple subordinates, which raised the issue of nonindependence of the supervisor ratings and among the respondents. Even if parameter estimates are accurate, Bliese and Hanges (2004) suggested that in models involving only individual-level variables this nonindependence may result in too many type II errors, and thus a loss of power. The average intraclass correlation (ICC) values in this study were .41 for individual innovative behavior, .13 for outcome expectations, and .16 for distal variables. These values suggest that nonindependence in our data would have led to an approximately 20 percent drop of power in our tests of the effects of outcome expectations on innovative behavior and a 5 percent drop in tests of the effects of distal variables on outcome expectations (Bliese & Hanges, 2004). In our results, the effects of all three outcome expectations were found to be strong and significant, even after the 20 percent drop in power. For tests of distal variable effects on outcome expectations, the 5 percent drop in power was relatively modest, and most of these effects were also found to be significant. Taken together, this analysis suggests that nonindependence did not significantly affect our results.

create an overall scale of innovative behavior. Objective measures of innovative behavior were not obtained because these indicators (e.g., number of research reports and patents) were largely unavailable for the diverse employee sample used in this study.

Outcome expectations. *Expected positive performance outcomes* ($\alpha = .77$) was measured by three items modified from House and Dessler's (1974) outcome expectancy scale. *Expected image risks* ($\alpha = .77$) was measured by three items adapted from Ashford's (1986) measure of image risk. *Expected image gains* ($\alpha = .86$) was measured by four items adapted from Ashford et al.'s (1998) measures of image outcomes associated with issue selling.

Distal antecedents. *Perceived organization support for innovation* was measured by 13 items ($\alpha = .92$) measuring support for creativity and tolerance of differences in Scott and Bruce's (1994) support for innovation scale.² We conducted a confirmatory factor analysis (CFA) using LISREL 8.72 (Jöreskog & Sörbom, 1996a) on the 13 items to compare a one-factor model in which all items loaded on a single factor (as found in Scott and Bruce [1994]) with a two-factor model in which items loaded on their corresponding support for creativity and tolerance of differences dimensions. The two-factor model fit the data significantly better than the one-factor model ($\chi^2_{diff} [1, n = 216] = 77.32, p < .001$). To equalize the measurement weighting for the two dimensions, we used the two scores for support for creativity and tolerance of differences as manifest indicators of this latent factor in the following CFA and in hypothesis testing. *Supervisor relationship quality* was measured by the seven-item LMX scale developed by Graen and colleagues (1982). Employees completed the member's version of the scale ($\alpha = .90$), and their corresponding supervisors completed the leader's version ($\alpha = .82$). The correlation between employee and supervisor reports in this study was positive and significant ($r = .42, p <$

.001), indicating the data were of good quality. Since what directly affects outcome expectations is an employee's perception of her/his relationship with supervisor, we used employee-reported LMX scores to measure this variable. *Innovativeness as a job requirement*, *reputation as innovative*, and *dissatisfaction with the status quo* were measured by items developed for this study (α 's = .85, .78, .75, respectively; please refer to the Appendix for scale items).

Control variables. We controlled for employee *intrinsic interest* in innovative activities using five items from Tierney, Farmer, and Graen (1999) rated on a scale ranging from 1, "strongly disagree," to 6, "strongly agree" ($\alpha = .85$). We measured *education level*, *hierarchical distance*, and *organization tenure* to control for the knowledge an employee can draw on to innovate (Mumford & Gustafson, 1988; Scott & Bruce, 1994) and the employee's access to organization resources for conducting innovative behavior (Aiken, Bacharach, & French, 1980; Daft, 1978; Kimberly & Evanisko, 1981). Table 1 shows the coding for education level. For hierarchical distance, each respondent reported the number of levels his/her position was below the president of his/her company, and we divided the reported number by the total number of hierarchical levels in the particular organization to create our measure. The higher the score, the lower the respondent's position in his or her organization. Job positions and organization membership were explored as controls, but they did not change the results of our hypothesis testing. Intrinsic interest had a significant effect on innovative behavior in our study, and the effects are reported below.

Confirmatory Factor Analysis

We conducted a CFA to further validate our measures. The hypothesized 13-factor measurement model (including dependent variable, independent variables, and control variables) was tested by submitting raw data to LISREL 8.72 and requesting an analysis based on the covariance matrix (Jöreskog & Sörbom, 1996a). Fit indexes indicated a good fit for the hypothesized model ($\chi^2 [785, n = 216] = 1,219.49, < .01, \chi^2/df = 1.55; RMSEA = .05, SRMR = .06, CFI = .96, NNFI = .95, IFI = .96$). All items loaded significantly on the latent constructs they were designed to measure. Factor loadings are listed in parentheses after the relevant items in the Appendix. To further validate our measures for the three outcome expectations, we compared the hypothesized measurement model with three alternative measurement models to test the following possibilities: (1) the three outcome expectations loading on one general outcome expectation factor rather than three factors, (2) expected image gains and expected image risks load-

² Scott and Bruce's (1994) 16-item measure for support for innovation, which loaded on one factor in their study, was intended to measure three dimensions: support for creativity, tolerance of differences, and perceptions of reward-innovation dependency. The 13 items measuring support for creativity and tolerance of differences were drawn from the support for creativity and tolerance of differences subscales in Siegel and Kaemmerer's (1978) original innovative climate measure. In this study, these 13 items were used to measure perceived organization support for innovation. We did not use the reward-innovation dependency items because the support for creativity and tolerance of differences items are more established measures for support for innovation and they seem to represent the construct well.

TABLE 1
Means, Standard Deviations, and Correlations^a

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12
1. Individual innovative behavior	3.17	0.93	(.93)											
2. Expected positive performance outcomes	3.92	0.65	.29**	(.77)										
3. Expected image risks	2.17	0.77	-.17*	-.24**	(.77)									
4. Expected image gains	3.65	0.79	.05	.45**	-.31**	(.86)								
5. Perceived organization support for innovation	3.12	0.73	.03	.18**	-.41**	.31**	(.92)							
6. Supervisor relationship quality	3.76	0.80	.22**	.27**	-.31**	.37**	.45**	(.90)						
7. Innovativeness as a job requirement	3.31	0.90	.18*	.51**	-.36**	.48**	.34**	.39**	(.85)					
8. Reputation as innovative	3.35	0.83	.32**	.47**	-.08	.30**	.08	.13	.47**	(.78)				
9. Dissatisfaction with the status quo	3.30	0.78	-.07	.00	.30**	-.07	-.41**	-.39**	-.19**	.02	(.75)			
10. Intrinsic interest	4.91	0.74	.30**	.40**	-.03	.12	-.06	.03	.31**	.42**	.15*	(.85)		
11. Education ^b	3.64	1.34	.13	-.01	.10	.06	-.11	-.04	-.01	.09	.12	.19**		
12. Hierarchical distance	1.0	0.46	-.10	.05	-.01	.05	-.08	.07	-.08	-.03	-.02	-.03	-.14*	
13. Organization tenure (in years)	5.55	5.44	.05	-.02	-.01	.07	.09	.06	.14*	.02	.04	-.12	-.11	-.16*

^a $n = 216$. Where relevant, Cronbach's coefficient alphas are given on the diagonal in parentheses.

^b Education was coded as follows: "some high school," 1; "high school diploma," 2; "some college," 3; "associate degree," 4; "bachelor's degree," 5; "master's degree," 6; Ph.D., 7.

* $p < .05$

** $p < .01$

ing on one general factor of image outcome expectation, and (3) expected image gains and expected positive performance outcomes loading on one general factor of positive outcome expectations. The results indicated that the hypothesized measurement model fit the data significantly better than did any of the alternative models ($\chi^2_{diff} [23, n = 216] = 444.07, p < .001$; $\chi^2_{diff} [12, n = 216] = 222.52, p < .001$; $\chi^2_{diff} [12, n = 216] = 229.75, p < .001$, respectively), providing support for the distinctiveness of the three outcome expectation factors.

RESULTS

Table 1 reports the means, standard deviations, and correlations for all variables. We tested the hypothesized paths in our theoretical model with structural equation modeling by submitting raw data to LISREL 8.72 and requesting an analysis based on the covariance matrix (Jöreskog & Sörbom, 1996a). Because our model contained relatively large number of variables and measurement items and because the study's major purpose was testing structural paths rather than validating the measurement model, we followed the single-indicator approach in testing the structural model (Allen, Mahto, & Otondo, 2007; Scott & Bruce, 1994; Williams & Hazer, 1986). Netemeyer, Johnston, and

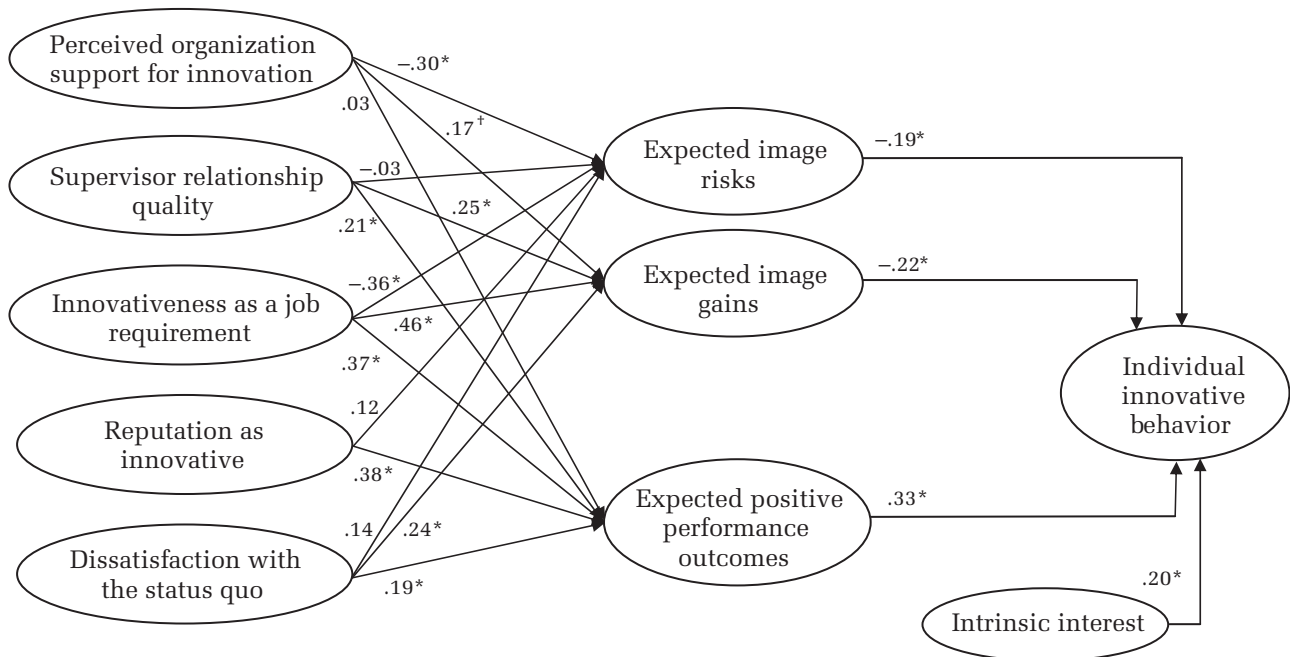
Burton (1990) demonstrated statistically that, if measurement error is incorporated into a model, this single-indicator procedure results in path estimates virtually identical to the estimates generated by using multiple indicator variables. Specifically, we used its scale mean as the single manifest indicator of each unidimensional latent variable. Because of its multidimensionality, perceived organization support for innovation was indicated by the two support for creativity and tolerance of difference scores to equalize the measurement weighting across the two dimensions. Following Kenny (1979), James, Mulaik, and Brett (1982), and Williams and Hazer (1986), to account for measurement error we set the loading from each single indicator to its latent construct as the square root of the reliability coefficient alpha for each scale multiplied by the standard deviation of the indicator, and the error variance for each indicator was set equal to one minus alpha times the variance of the indicator. As with other variables, we did not assume that education, hierarchical distance, and organization tenure were measured without error. In the past, the reliability of a single measure has been set at conservative values of either .90 (cf. Anderson & Gerbing, 1988; Sörbom & Jöreskog, 1982) or .85 (Jöreskog & Sörbom, 1996b). An analysis based on either value resulted in the same results we

obtained in this study. We report findings below based on a reliability value of .90 for these three variables. The exogenous variables in our model were allowed to covary to account for the relationships existing among distal antecedent variables.

The hypothesized model provided an adequate fit to the data ($\chi^2[32, n = 216] = 73.55, p < .01, \chi^2/df = 2.30; RMSEA = .08, SRMR = .04, CFI = .96, NFI = .93, IFI = .96$). Figure 2 presents the results. The model accounted for 25 percent of the variance in individual innovative behavior. The distal variables accounted for 55, 37, and 41 percent of the variance in expected positive performance outcomes, expected image risks, and expected image gains, respectively. Eleven of the 17 hypothesized paths were significant at the .05 level and in the predicted directions. All three outcome expectations related significantly to innovative behavior. Consistently with Hypotheses 1 and 2, expected positive performance outcomes associated positively with innovative behavior ($b = .33, p < .01$), and expected image risks related negatively to innovative behavior ($b = -.19, p < .05$). Contrary to the prediction of Hypothesis 3, expected image gains had a significant yet negative relationship with innovative behavior ($b = -.22, p < .01$). Figure 2 shows overall results for the tests of the hypothesized paths.

Perceived organization support for innovation had a significant negative effect on expected image risks and a marginally significant positive effect on expected image gains, providing strong support for Hypothesis 4b and some support for Hypothesis 4c. No support was found for Hypothesis 4a (the path from perceived support for innovation to expected positive performance outcomes). Supervisor relationship quality had significant positive effects on expected positive performance outcomes and expected image gains, but a nonsignificant effect on expected image risks. Thus, support was found for Hypotheses 5a and 5c, but not for Hypothesis 5b. Hypotheses 6a, 6b, and 6c predict positive effects of innovativeness as a job requirement on expected positive performance outcomes and expected image gains, and a negative effect on expected image risks. The results strongly supported these three hypotheses. Reputation as innovative had a significant positive effect on expected positive performance outcomes, supporting Hypothesis 7a. No support was found for Hypothesis 7b (the path from reputation to expected image risks). Dissatisfaction with status quo had significant effects on expected positive performance outcomes and expected image gains, but not on expected image risks. There-

FIGURE 2
Results for the Hypothesized Paths (Hypotheses 1–8c)^a



^a Fit: $\chi^2(32, n = 216) = 73.55, p < .01, \chi^2/df = 2.30; RMSEA = .08, SRMR = .04, CFI = .96, NFI = .93, IFI = .96$. Parameter estimates are from the completely standardized solution.

[†] $p < .10$

* $p < .05$

fore, support was found for Hypotheses 8a and 8c, but not for Hypothesis 8b.

In their review of 14 methods for testing mediation, MacKinnon, Lockwood, Hoffman, West, and Sheets (2002) suggested that the test for the joint significance of alpha and beta has the best balance of type I error and statistical power across all cases. In this approach, mediation is supported when both the antecedent-mediator path alpha and mediator-outcome path beta are jointly significant in a model in which the direct path from antecedent to outcome is also modeled. Following this approach, we reran our model with the direct paths from distal variables to innovative behavior added. The significance of all hypothesized paths remained the same. All three beta paths were significant, and nine alpha paths were significant, therefore supporting 9 of the 14 mediation hypotheses. Figure 3 depicts these results of mediation testing. Moreover, to provide a direct test of the statistical significance of the mediated or indirect effects (i.e., the significance of the alpha-beta products) we used the product of coefficients approach (MacKinnon et al., 2002) to supplement the test for the joint significance of alpha and beta. The Mac-

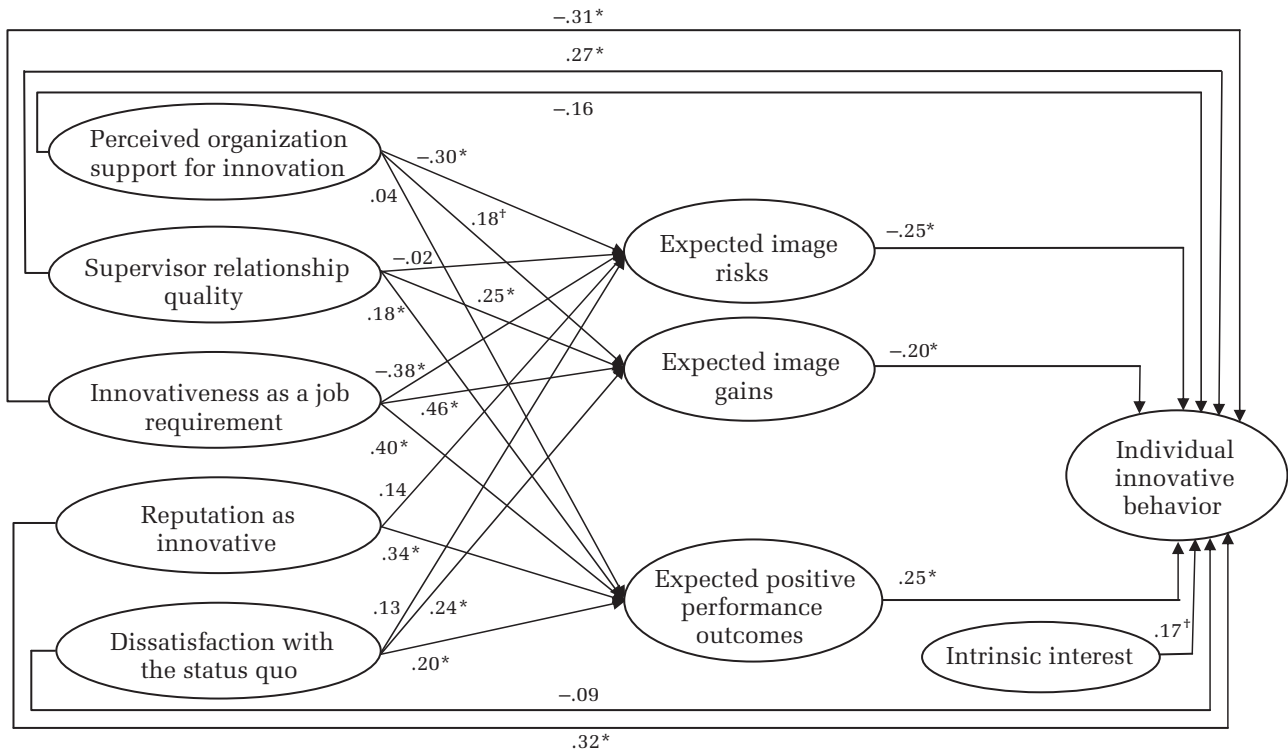
Kinnon, Lockwood, and Hoffman (1998) distribution of products ($P = z_{\alpha}z_{\beta}$) method was used, as recommended by MacKinnon and colleagues (2002). Twelve indirect effects significant at the .05 level were found. Table 2 presents the results of the product of coefficients test. Overall, 9 of the 14 hypothesized mediation relationships (Hypotheses 9b, 10a, 10c, 11a, 11b, 11c, 12a, 13a, and 13c) were consistently found to be significant by both tests (highlighted in bold in Table 2) and were interpreted as significant results in this study.

DISCUSSION

Theoretical Implications

This study is the first attempt to examine how the expected outcomes of innovative behavior affect employee innovation at work. We found that the expectations for potential performance and image consequences significantly affected employee innovativeness after we controlled for individual intrinsic interest and capabilities. In particular, we brought together two major theoretical perspectives (the effi-

FIGURE 3
Results of Mediation Testing Using the Joint Significance of α and β Test (Hypotheses 9a–13c)^a



^a Fit: $\chi^2(27, n = 216) = 56.01, p < .01, \chi^2/df = 2.07$; RMSEA = .07, SRMR = .03, CFI = .97, NFI = .95, IFI = .97. Parameter estimates are from the completely standardized solution.

[†] $p < .10$

* $p < .05$

TABLE 2
Results of the Product of Coefficients Test on Indirect Effects Mediated through Performance and Image Outcome Expectations^a

Distal Variable	Mediator	Mediated Indirect Effect ^b	<i>P</i>
Perceived organization support for innovation	Expected positive performance outcomes	.01	0.91
	Expected image risks	.08^{*c}	7.43
	Expected image gains	-.03 [*]	-3.99
Supervisor relationship quality	Expected positive performance outcomes	.05^{*c}	3.96
	Expected image risks	.00	0.44
	Expected image gains	-.05^{*c}	-5.99
Innovativeness as a job requirement	Expected positive performance outcomes	.10^{*c}	7.26
	Expected image risks	.10^{*c}	8.20
	Expected image gains	-.09^{*c}	-12.21
Reputation as innovative	Expected positive performance outcomes	.09^{*c}	6.77
	Expected image risks	-.04 [*]	-3.29
Dissatisfaction with the status quo	Expected positive performance outcomes	.05^{*c}	4.20
	Expected image risks	-.03 [*]	-3.20
	Expected image gains	-.05^{*c}	-5.38

^a The MacKinnon et al. (1998) distribution of products $P = z_{\alpha}z_{\beta}$ method was used to test the significance of mediated or indirect effects as recommended by MacKinnon and colleagues (2002); z_{α} equals the path coefficient for path α divided by its standard error; z_{β} equals the path coefficient for path β divided by its standard error. The distribution of P follows the distribution of the product of two normal random variables from Craig (1936). The critical value is 2.18 for the .05 significance level.

^b The $\alpha\beta$ product.

^c Mediation effects found to be significant by both the joint significance of α and β test (see Figure 3) and the product of coefficients test.

* $p < .05$

ciency-oriented and the social-political perspectives) to examine these major outcome expectations, and the results of our study suggest that using a single perspective to understand the psychological considerations behind innovative behavior does not capture the full picture. Providing direct support for the efficiency-oriented perspective, we found that employees were more innovative when they anticipated such behavior would benefit their work. At the same time, the concern for potential image risks and unfavorable social impressions negatively affected innovativeness, suggesting a significant impact of social-political considerations on employee innovation.

Contrary to expectations, we found a significant yet negative effect of expected image gains on innovative behavior. One possible explanation is that employees who intended to use innovative behavior for the purposes of showing off or pleasing other people were indeed less innovative and were perceived and rated by their supervisors as such. This possible explanation would suggest that managers are able to see the political motive and tend to give negative evaluations to employees who manipulate "innovativeness" to pursue personal agendas. Another possibility is that expected image gains were not related to innovative behavior but served as a suppressor variable for expected positive performance gains. Our results indi-

cated that (1) expected image gains had a near-zero correlation with innovative behavior ($r = .05$, n.s.); (2) it correlated positively with expected positive performance outcomes ($r = .45$, $p < .01$); and (3) the inclusion of expected image gains enhanced the path coefficient of expected positive performance ($b = .33$) beyond its bivariate correlation with innovative behavior ($r = .29$). This result pattern is consistent with classic suppression as discussed by various scholars (e.g., Cohen & Cohen, 1983; Horst, 1941; Maassen & Bakker, 2001; Pedhazur, 1997). As a suppressor, expected image gains had no significant relationship with innovative behavior but shared some variance with expected positive performance outcomes that was irrelevant to innovative behavior. Expected image gains may share some common variance with expected positive performance outcomes because an employee is more likely to achieve image gains when his or her innovative behavior brings performance gains. "Partialing out" this image-related reason to improve performance purified and enhanced the relationship between a true efficiency-oriented consideration and innovative behavior. Under this situation, the effect of the suppressor variable (expected image gains) could become negative, even though it was not significantly related to the criterion variable (innovative behavior) (Horst, 1941; Pedhazur, 1997).

By examining performance and image outcome expectations as intermediate psychological processes, our findings also help to explain how contextual and individual difference antecedents influence individual innovation indirectly by shaping these efficiency-oriented and social-political considerations. Scott and Bruce (1994) suggested organization support for innovation affects innovative behavior by signaling potential outcomes of such behavior. Our findings support this argument. When an organization supported innovation and tolerated differences, employees felt psychologically safe and had much less concern for image risks. They might also have been more likely to perceive innovativeness as a desirable social image to achieve. Perceived organization support for innovation, however, did not affect their expectation that being innovative would benefit their work. It is possible that expectation of positive performance outcomes is a more specific judgment than a general proinnovation attitude. Whether innovative attempts will benefit a particular individual's work is also influenced by other factors, such as the specific nature of her or his job.

As we hypothesized, employees who had good relationships with their supervisors were more confident that their innovative behavior would result in performance gains. Also, high-quality relationships with their supervisors increased employees' confidence that their innovative attempts would receive favorable social evaluations and therefore enhance their images in their organization. Contrary to expectations, mutually trusting and respectful relationships with supervisors were not related to reduced concerns for image risk. One possible explanation is that image risk concerns a larger social context that includes not just an employee's supervisor but also others, such as work group members and coworkers.

Previous studies have tended to explain the effects of job characteristics on employee innovation and creativity on the basis of the different capabilities of job incumbents and the different levels of freedom available to them (e.g., Munton & West, 1995), or on the basis of these factors' implications for intrinsic work motivation (e.g., Oldham & Cummings, 1996). Findings from this study suggest that the perceived nature of an employee's job may also affect the employee's innovativeness by influencing his or her expectations for potential performance and image outcomes. Certain social stigmas are associated with different jobs. Our results suggest that employees working in positions in which innovativeness is not required (e.g., non-R&D-related jobs) may be less motivated to apply new ideas for two reasons. For one thing, they do not consider new ideas or processes as

helpful for their work. Moreover, even when there is a good idea that will benefit their work, these employees may hesitate to give it a try because other people may consider their ideas invalid and/or they simply do not want to rock the boat.

As we hypothesized, employees who enjoyed a reputation of being innovative tended to internalize the belief that innovative behaviors would benefit their work, which motivated them to innovate more. An innovative reputation, however, did not significantly reduce employees' concern about image risk. It is possible that reputation has two contradictory effects that cancelled each other out in this study. On the one hand, as hypothesized, when innovative people do innovative things, they will not surprise others. Doing so fits their social image and results in less concern about image risk. Yet at the same time, employees with an innovative reputation may also be in the risky position of being seen as troublemakers who always want to turn things around. Their innovative attempts may actually be less tolerated by coworkers than the attempts of those lacking a reputation for innovativeness and may instead be more likely to irritate others.

Employees who were less satisfied with the current performance of their department and organization had higher appreciation for the potential performance and image benefits brought by new ideas, technologies, and processes. This sense of dissatisfaction, though, did not reduce their concerns about potential image risks associated with innovative behavior. This finding was contrary to our expectation that a less effective situation could justify innovation and make innovative behaviors more legitimate. One possible explanation is that our construct of dissatisfaction with the status quo is more a subjective perception than a social consensus. Personal dissatisfaction with the status quo does not necessarily relieve the concern that other people (who might be satisfied with the current condition) will frown upon the focal person's innovative attempts.

Taken together, our findings contribute to the innovation literature in three major ways. First, our results suggest the importance of expected performance and image outcomes in explaining why employees innovate in the workplace, a critical question that has been largely ignored in the literature. In keeping with Janssen and colleagues' (2004) view of workplace innovation as a costly and risky endeavor, the significant effects of outcome expectations on innovative behavior found in this study suggest that these potential costs and benefits are important extrinsic motivational considerations that need to be assessed in addition to employees' intrinsic interest. Second, our study examined how outcome expectations serve as the psychological

mechanism to explain how and why organizational, supervisor relational, job, social, and individual factors affect individual innovation. Our results add to the innovation literature by revealing how the effects of these contextual and individual antecedents can be understood in light of their impacts on these efficiency-oriented and social-political considerations. Third, an important theoretical contribution of this research is the articulation of a view of individual innovation that does not rely on a single principle or kernel of truth as its core. This study answers calls in the literature for utilizing multiple perspectives to study innovation (Abrahamson, 1991; Wolfe, 1994). Our results suggest that both efficiency-oriented and social-political processes simultaneously influence individual innovation and that both perspectives need to be applied to understand the dynamics of workplace innovation. In particular, the findings of this study suggest the need to go beyond the dominant efficiency-oriented perspective and to assess both the technical and symbolic functions of innovative behavior.

Practical Implications

One major reason employees do not innovate is their fear of being perceived negatively by others. Findings from this study suggest organization support and job requirements as two areas to focus on to reduce the image risks associated with innovative behavior. Although the importance of building a culture supportive of innovation (e.g., by establishing special rewards for innovation and establishing forums for diverse ideas) is widely accepted, the relevance of job requirements has been less emphasized. Most previous innovation studies have focused on R&D departments, where innovative behaviors are part of employees' job descriptions. For employees whose jobs are not, by definition, technology or innovation related, their company's mission of "innovation" could appear rather remote or irrelevant, preventing them from contributing valuable ideas. It is therefore important for managers to break job position stereotypes and to demystify innovation. Communicating with those employees to let them know that they too are expected to contribute new ideas is one way. Explicitly incorporating innovativeness into their job descriptions is another possibility.

Another reason why employees do not innovate is that they don't believe doing so will benefit their work. Our results suggest four areas management can amend to establish a strong association between innovative behavior and job performance: employee-supervisor relationships, job requirements, employee social reputation, and employee dissatisfaction with the status quo. In addition to job requirements, social

context (e.g., supervisor-subordinate relationships) would seem to play an important role here. Also, it is important to provide positive social recognition for innovative employees and increase the extent of employees' self-views as innovative. Companies with histories of successful performance need to take steps to break psychological comfort with the status quo and sensitize employees to opportunities for further improvement.

Limitations and Suggestions for Future Research

The contributions discussed above should be interpreted in light of this study's limitations. First, the links in our theoretical model follow the hypothesized causal order, with contextual and individual difference factors affecting outcome expectations, which lead to innovative behavior. The cross-sectional research design we used, however, limited our ability to determine causality. It is possible, for example, that the relationships between some distal variables and innovative behavior are reciprocal. For instance, reputation and dissatisfaction affect an employee's innovative behavior as theorized in our model. Yet at the same time, a person's innovativeness might also influence her or his reputation and dissatisfaction level in the future, which in turn will affect future outcome expectations and innovative behavior from this employee. We strongly recommend future studies that use longitudinal designs to explore the relationships posited in our model and these possible reciprocal relationships.

To alleviate potential common methods bias, we collected data on innovative behavior from supervisors, as an alternative to employee self-reports. Despite the appropriateness of measuring perceptual and attitudinal variables using self-reports, it is a limitation that our distal variables and outcome expectation variables were collected from the same source using the same method (although how much of a limitation is open to debate [cf. Spector, 2006]), which may have biased the relationships observed among these variables. To address this potential concern, we undertook the procedural remedies (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) of protecting respondent confidentiality and reducing item ambiguity (by piloting the survey with MBA students and discussing the questionnaire with managers before administering it to employees). Statistically, we investigated the potential impact of common method variance by controlling for an unmeasured latent method factor and allowing all self-reported items to load both on their theoretical constructs and on the method factor (Podsakoff et al., 2003). The results for all structural path parameters remained the same after our controlling for

the method factor, suggesting that common method variance did not bias our findings.

Using supervisor ratings to measure employee innovative behavior also has its limitations. First, in some situations one supervisor provided ratings for multiple subordinates, raising the issue that nonindependence may have reduced statistical power in hypothesis testing. Overall, our analysis suggested that nonindependence did not significantly affect our results. However, in further studies researchers should strive to avoid the nonindependence issue when measuring individual-level variables to avoid its potential negative impact on statistical power. Supervisor ratings can also be biased by the individual response characteristics of different supervisors (cf. Landy & Farr, 1980; Mount, Judge, Scullen, Sytsma, & Hezlett, 1998). Future studies should include attempts to collect a second measure of innovative behavior (e.g., a peer rating or objective indexes) to cross-validate supervisor ratings.

The symbolic function of innovative behavior is relatively underaddressed in the existing literature. More future research needs to be done to examine the role of image outcome expectations in the innovation process. For example, the negative relationship between expected image gains and innovative behavior found in this study is both surprising and interesting. Future research needs to examine the viability of different interpretations. Does an image-enhancing motive have a significant impact on innovative behavior, in addition to performance and image risk considerations? Are supervisors truly able to see a selfish motive behind employee innovative behaviors? Is it possible that employees can engage in artificial innovative acts to enhance image only in certain situations, such as when the results of the innovation are difficult to objectively evaluate?

Future studies are also recommended to extend our research by examining the impact of performance and image outcome expectations in different situations and contexts. For example, individual innovation can be viewed in terms of different stages, such as idea generation, promotion, and implementation (cf. Kanter, 1988); different levels, including incremental versus radical; and different types, such as technical versus administrative (Daft, 1978; Van de Ven, 1986). Specific antecedents of these subcategories of innovative behavior can be assessed. It is possible that the effects of performance and image outcome expectations might be more important for certain types, levels, or stages of innovative behavior. Also, several recent reviews have suggested the necessity of taking a cross-cultural perspective for understanding innovation and creativity (Anderson, De Dreu, & Nijstad, 2004; Shalley et al., 2004). Future studies need to

examine whether the effects of performance and image outcome expectations also vary across cultures.

This study is the first attempt to directly theorize and test major outcome expectations associated with employee innovative behavior. Drawing from both the efficiency-oriented and social-political perspectives on innovation, the model tested here provides a theoretical framework for understanding why employees engage in innovative behavior in the workplace and how different contextual and individual difference factors affect employee innovation indirectly by shaping these intermediate psychological considerations. We hope that this study will stimulate more theory building and testing to investigate the processes leading to individual innovation.

REFERENCES

- Abrahamson, E. 1991. Managerial fads and fashions: The diffusion and rejection of innovations. *Academy of Management Review*, 16: 586–612.
- Aiken, M., Bacharach, S. B., & French, J. L. 1980. Organizational structure, work process, and proposal making in administrative bureaucracies. *Academy of Management Journal*, 23: 631–652.
- Allen, D. G., Mahto, R. V., & Otondo, R. F. 2007. Web-based recruitment: Effects of information, organizational brand, and attitudes toward a web site on applicant attraction. *Journal of Applied Psychology*, 92: 1696–1708.
- Amabile, T. M. 1988. A model of creativity and innovation in organizations. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior*, vol. 10: 123–167. Greenwich, CT: JAI Press.
- Amabile, T. M. 1996. *Creativity in context: Update to "The social psychology of creativity."* Boulder, CO: Westview Press.
- Anderson, N., De Dreu, C. K. W., & Nijstad, B. A. 2004. The routinization of innovation research: A constructively critical review of the state-of-the-science. *Journal of Organizational Behavior*, 25: 147–173.
- Anderson, J. C., & Gerbing, D. W. 1988. Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103: 411–423.
- Arkin, R. M. 1981. Self-presentation styles. In J. T. Tedeschi (Ed.), *Impression management theory and social psychological research*: 311–333. New York: Academic Press.
- Arndt, M., & Bigelow, B. 2000. Presenting structural innovation in an institutional environment: Hospitals' use of impression management. *Administrative Science Quarterly*, 45: 494–522.
- Ashford, S. J. 1986. Feedback seeking in individual adaptation: A resource perspective. *Academy of Management Journal*, 29: 465–487.

- Ashford, S. J., & Northcraft, G. B. 1992. Conveying more (or less) than we realize: The role of impression-management in feedback-seeking. *Organizational Behavior and Human Decision Processes*, 53: 310–334.
- Ashford, S. J., Rothbard, N. P., Piderit, S. K., & Dutton, J. E. 1998. Out on a limb: The role of context and impression management in selling gender-equity issues. *Administrative Science Quarterly*, 43: 23–57.
- Bliese, P. D., & Hanges, P. J. 2004. Being both too liberal and too conservative: The perils of treating grouped data as though they were independent. *Organizational Research Methods*, 7: 400–417.
- Bunce, D., & West, M. A. 1995. Self perceptions and perceptions of group climate as predictors of individual innovation at work. *Applied Psychology: An International Review*, 44: 199–215.
- Chatman, J. A. 1991. Matching people and organizations: Selection and socialization in public accounting firms. *Administrative Science Quarterly*, 36: 459–484.
- Cohen, J., & Cohen, P. 1983. *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Craig, C. C. 1936. On the frequency function of xy . *Annals of Mathematical Statistics*, 7: 1–15.
- Daft, R. L. 1978. A dual-core model of organizational innovation. *Academy of Management Journal*, 21: 193–210.
- Dean, J. W., Jr. 1987. Building the future: The justification process for new technology. In J. M. Pennings & A. Buitendam (Eds.), *New technology as organizational innovation: The development and diffusion of microelectronics*: 35–58. Cambridge, MA: Ballinger.
- Dyer, W. G., & Page, R. A., Jr. 1988. The politics of innovation. *Knowledge in the Society: An International Journal of Knowledge Transfer*, 1(2): 23–41.
- Farr, J. L., & Ford, C. M. 1990. Individual innovation. In M. A. West & J. L. Farr (Eds.), *Innovation and creativity at work: Psychological and organizational strategies*: 63–80. Chichester, U.K.: Wiley.
- Gilbert, D. T. 1998. Ordinary personology. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed.) vol. 2: 89–150. Boston: McGraw-Hill.
- Graen, G. B. 1976. Role making processes within complex organizations. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology*: 1201–1245. Chicago: Rand-McNally.
- Graen, G. B., Novak, M. A., & Sommerkamp, P. 1982. The effects of leader-member exchange and job design on productivity and satisfaction: Testing a dual attachment model. *Organizational Behavior and Human Performance*, 30: 109–131.
- Graen, G. B., & Uhl-Bien, M. 1995. Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying multi-level multi-domain perspective. *Leadership Quarterly*, 6: 219–247.
- Green, S. G., & Mitchell, T. R. 1979. Attributional process of leaders in leader-member interactions. *Organizational Behavior and Human Performance*, 23: 429–458.
- Harrison, J. R., & Carroll, G. R. 1991. Keeping the faith: A model of cultural transmission in formal organizations. *Administrative Science Quarterly*, 36: 552–582.
- Horst, P. 1941. The role of prediction variables which are independent of the criterion. In P. Horst (Ed.), *The prediction of personal adjustment*. *Social Research Bulletin*, 48: 431–436.
- House, R. J., & Dessler, G. 1974. The path goal theory of leadership: Some post hoc and a priori tests. In J. Hunt & L. Larson (Eds.), *Contingency approaches to leadership*: 29–55. Carbondale: Southern Illinois University Press.
- James, L., Hartman, E., Stebbins, M., & Jones, A. 1977. An examination of the relationship between psychological climate and a VIE model for work motivation. *Personnel Psychology*, 30: 229–254.
- James, L., Mulaik, S., & Brett, J. 1982. *Causal analysis: Assumptions, models, and data*. Beverly Hills, CA: Sage.
- Janssen, O. 2000. Job demands, perceptions of effort-reward fairness and innovation work behavior. *Journal of Occupational and Organizational Psychology*, 73: 287–302.
- Janssen, O. 2003. Innovative behavior and job involvement at the price of conflict and less satisfactory relations with co-workers. *Journal of Organizational and Occupational Psychology*, 76: 347–364.
- Janssen, O., Van de Vliert, E., & West, M. 2004. The bright and dark sides of individual and group innovation: A special issue introduction. *Journal of Organizational Behavior*, 25: 129–145.
- Janssen, O., & Van Yperen, N. W. 2004. Employees' goal orientations, the quality of leader-member exchange, and the outcomes of job performance and job satisfaction. *Academy of Management Journal*, 47: 368–384.
- Jöreskog, K. G., & Sörbom, D. 1996a. LISREL 8: User's reference guide. Lincolnwood, IL: Scientific Software International.
- Jöreskog, K. G., & Sörbom, D. 1996b. LISREL 8: Structural equation modeling with the SIMPLIS command language. Lincolnwood, IL: Scientific Software International.
- Judge, T. A., & Ferris, G. R. 1993. Social context of performance evaluation decisions. *Academy of Management Journal*, 36: 80–105.
- Kanter, R. M. 1983. *The change masters*. New York: Simon & Schuster.
- Kanter, R. M. 1988. When a thousand flowers bloom: Structural, collective, and social conditions for in-

- novation in organization. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior*, vol. 10: 169–211. Greenwich, CT: JAI Press.
- Kenny, D. 1979. *Correlation and causality*. New York: Wiley-Interscience.
- Kimberly, J. R. 1981. Managerial innovation. In P. C. Nystrom & W. H. Starbuck (Eds.), *Handbook of organizational design*, vol. 1: 84–104. New York: Oxford University Press.
- Kimberly, J. R., & Evanisko, M. 1981. Organizational innovation: The influence of individual, organizational, and contextual factors on hospital adoption of technological and administrative innovations. *Academy of Management Journal*, 24: 689–713.
- Landy, F. L., & Farr, J. 1980. Performance rating. *Psychological Bulletin*, 87: 72–102.
- Lant, T. K., & Mezias, S. J. 1992. An organizational learning model of convergence and reorientation. *Organization Science*, 3: 47–71.
- Leary, M. R., & Kowalski, R. M. 1990. Impression management: A literature review and two-component model. *Psychological Bulletin*, 107: 34–47.
- Maassen, G. H., & Bakker, A. B. 2001. Suppressor variables in path models: Definitions and interpretations. *Sociological Methods & Research*, 30: 241–270.
- MacKinnon, D. P., Lockwood, C., & Hoffman, J. 1998. *A new method to test for mediation*. Paper presented at the annual meeting of the Society for Prevention Research, Park City, UT.
- MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. 2002. A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, 7: 83–104.
- Markus, H., & Zajonc, R. B. 1985. The cognitive perspective in social psychology. In G. Lindzey & E. Aronson (Eds.), *The handbook of social psychology* (3rd ed.), vol. 1: 137–230. New York: Random House.
- Mount, M. K., Judge, T. A., Scullen, S. E., Sytma, M. R., & Hezlett, S. A. 1998. Trait, rater and level effects in 360-degree performance ratings. *Personnel Psychology*, 51: 557–576.
- Mumford, M., & Gustafson, S. 1988. Creativity syndrome: Integration, application, and innovation. *Psychological Bulletin*, 103: 27–43.
- Munton, A. G., & West, M. A. 1995. Innovations and personal change: Patterns of adjustment to relocation. *Journal of Organizational Behavior*, 16: 363–375.
- Netemeyer, R., Johnston, M., & Burton, S. 1990. Analysis of role conflict and role ambiguity in a structural modeling framework. *Journal of Applied Psychology*, 75: 148–157.
- Oldham, G. R., & Cummings, A. 1996. Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, 39: 607–634.
- Ostroff, C., & Schmitt, N. 1993. Configurations of organizational effectiveness and efficiency. *Academy of Management Journal*, 36: 1345–1361.
- Pedhazur, E. J. 1997. *Multiple regression in behavioral research: Explanation and prediction*. Fort Worth, TX: Harcourt.
- Pennings, P. S., & Goodman, J. M. 1977. Toward a workable framework. In P. S. Pennings & J. M. Goodman (Eds.), *New perspectives on organizational effectiveness*: 146–184. San Francisco: Jossey-Bass.
- Podsakoff, P. M., MacKenzie, S. B., & Lee, J., & Podsakoff, N. P. 2003. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88: 879–903.
- Regan, D. T., & Totten, J. 1975. Empathy and attribution: Turning observers into actors. *Journal of Personality and Social Psychology*, 32: 850–856.
- Rioux, S. M., & Penner, L. A. 2001. The causes of organizational citizenship behavior: A motivational analysis. *Journal of Applied Psychology*, 86: 1306–1314.
- Rogers, E. M. 1983. *Diffusion of innovation* (2nd ed.). New York: Free Press.
- Schlenker, B. R. 1980. *Impression management: The self-concept, social identity, and interpersonal relations*. Monterey, CA: Brooks/Cole.
- Scott, S. G., & Bruce, R. A. 1994. Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal*, 37: 580–607.
- Shalley, C. E., Zhou, J., & Oldham, G. R. 2004. The effects of personal and contextual characteristics on creativity: Where should we go from here? *Journal of Management*, 30: 933–958.
- Shrauger, J. S., & Shoeneman, T. J. 1979. Symbolic interactionist view of self-concept: Through the looking glass darkly. *Psychological Bulletin*, 86: 549–573.
- Siegel, S. M., & Kaemmerer, W. F. 1978. Measuring the perceived support for innovation in organizations. *Journal of Applied Psychology*, 63: 553–562.
- Sörbom, D., & Jöreskog, K. G. 1982. The use of structural equation models in evaluation research. In C. Fornell (Ed.), *A second generation of multivariate analysis*, vol. 2: 381–418. New York: Praeger.
- Spector, P. E. 2006. Method variance in organizational research: Truth or urban legend? *Organizational Research Methods*, 9: 221–232.
- Steele, C. M. 1988. The psychology of self-affirmation: Sustaining the integrity of self. In L. Berkowitz (Ed.), *Advances in experimental social psychology*, vol. 21: 261–302. New York: Academic Press.
- Sutton, R. I., & Hargadon, A. 1996. Brainstorming groups in context: Effectiveness in a product design firm. *Administrative Science Quarterly*, 41: 685–718.
- Tedeschi, J. T., & Riess, M. 1981. Identities, the phenomenal self, and laboratory research. In J. T. Tedeschi (Ed.),

- Impression management theory and social psychological research:** 3–22. New York: Academic Press.
- Tetlock, P. E., & Manstead, A. S. R. 1985. Impression management versus intrapsychic explanations in social psychology: A useful dichotomy? *Psychological Review*, 92: 59–77.
- Tierney, P., Farmer, S. M., & Graen, G. B. 1999. An examination of leadership and employee creativity: The relevance of traits and relationships. *Personnel Psychology*, 52: 591–620.
- Tolber, P. S., & Zucker, L. 1983. Institutional sources of change in the formal structure of organizations: The diffusion of civil service reform, 1880–1935. *Administrative Science Quarterly*, 28: 22–39.
- Tushman M. L., & Romanelli, E. 1985. Organizational evolution: A metamorphosis model of convergence and reorientation. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior*, vol. 7: 171–222. Greenwich, CT: JAI Press.
- Van de Ven, A. H. 1986. Central problems in the management of innovation. *Management Science*, 32: 590–607.
- Vroom, V. H. 1964. *Work and motivation*. New York: Wiley.
- Wayne, S. J., & Liden, R. C. 1995. Effects of impression management on performance ratings: A longitudinal study. *Academy of Management Journal*, 38: 232–260.
- West, M. A. 1989. Innovation amongst health care professionals. *Social Behavior*, 4: 173–184.
- West, M. A., & Farr, J. L. 1989. Innovation at work: Psychological perspectives. *Social Behavior*, 4: 15–30.
- West, M. A., & Farr, J. L. (Eds.). 1990a. *Innovation and creativity at work: Psychological and organizational strategies*. Chichester, U.K.: Wiley.
- West, M. A., & Farr, J. L. 1990b. Innovation at work. In M. A. West & J. L. Farr (Eds.), *Innovation and creativity at work: Psychological and organizational strategies*: 3–13. Chichester, U.K.: Wiley.
- West, M. A., & Wallace, M. 1991. Innovation in health care teams. *European Journal of Social Psychology*, 21: 303–315.
- Westphal, J. D., Gulati, R., & Shortell, S. M. 1997. Customization or conformity? An institutional and network perspective on the content and consequences of TQM adoption. *Administrative Science Quarterly*, 42: 366–394.
- Williams, L., & Hazer, J. 1986. Antecedents and consequences of satisfaction and commitment in turnover models: A reanalysis using latent variable structural equation methods. *Journal of Applied Psychology*, 71: 219–231.
- Wolfe, R. A. 1994. Organizational innovation: Review, critique and suggested research directions. *Journal of Management Studies*, 31: 405–431.
- Wolfe, R., Lennox, R., & Cutler, B. L. 1986. Getting along and getting ahead: Empirical support for a theory of protective and acquisitive self-presentation. *Journal of Personality and Social Psychology*, 50: 356–361.
- Woodman, R. W., Sawyer, J. E., & Griffin, R. W. 1993. Toward a theory of organizational creativity. *Academy of Management Review*, 18: 293–321.
- Zelditch, M., Jr. 2001. Theories of legitimacy. In J. T. Jost & B. Major (Eds.), *The psychology of legitimacy: Emerging perspectives on ideology, justice, and intergroup relations*: 33–53. Cambridge, U.K.: Cambridge University Press.
- Zhou, J. 2003. When the presence of creative coworkers is related to creativity: Role of supervisor close monitoring, developmental feedback, and creative personality. *Journal of Applied Psychology*, 88: 413–422.
- Zhou, J., & Woodman, R. W. 2003. Manager's recognition of employees' creative ideas: A social-cognitive model. In L. V. Shavinina (Ed.), *The international handbook on innovation*: 631–640. Oxford, U.K.: Elsevier Science.

APPENDIX

Scale Items^a

Individual Innovative Behavior (Scott & Bruce, 1994; $\alpha = .93$)

Supervisor indicated how characteristic each of the following behaviors was of a particular employee:

1. Searches out new technologies, processes, techniques, and/or product ideas. (.92)
2. Generates creative ideas. (.91)
3. Promotes and champions ideas to others. (.83)
4. Investigates and secures funds needed to implement new ideas. (.67)
5. Develops adequate plans and schedules for the implementation of new ideas. (.72)
6. Is innovative. (.88)

Expected Positive Performance Outcomes (adapted from House & Dessler, 1974; $\alpha = .77$)

1. The more innovative I am, the better my job performance. (.80)
2. Coming up with creative ideas helps me do well on my job. (.81)
3. My work unit will perform better if I often suggest new ways to achieve objectives. (.59)

Expected Image Risks (adapted from Ashford, 1986; $\alpha = .77$)

1. My co-workers will think worse of me if I often try out new approaches on my job. (.78)
2. People will think I am crazy if I come up with new ways of doing my job. (.68)
3. Other people will think worse of me if I try to change the way things operate within the organization. (.75)

Expected Image Gains (Adapted from Ashford et al., 1998; $\alpha = .86$)

1. If I were to do something innovative, my image in the organization would be enhanced. (.85)
2. Searching out new technologies or techniques for the organization will make me look good. (.80)
3. Participating in the implementation of new ideas will improve my images in the organization. (.81)
4. Suggesting new ways to achieve goals will improve my supervisor's evaluation of me. (.68)

Perceived Organization Support for Innovation (Scott & Bruce, 1994; $\alpha = .92$)

Standardized factor loadings for the two indicators of perceived organization support for innovation were support for creativity, .83; tolerance of difference, .88.

1. Creativity is encouraged here.
2. Our ability to function creatively is respected by the leadership.
3. Around here, people are allowed to try to solve the same problems in different ways.
4. The main function of members in this organization is to follow orders which come down through channels. (reverse-coded)
5. Around here, a person can get in a lot of trouble being different. (reverse-coded)
6. This organization can be described as flexible and continually adapting to change.
7. A person can't do things that are too different around here without provoking anger. (reverse-coded)
8. The best way to get along in this organization is to think the way the rest of the group does. (reverse-coded)
9. People around here are expected to deal with problems in the same way. (reverse-coded)
10. This organization is open and responsive to change.
11. The people in charge around here usually get credit for others' ideas. (reverse-coded)
12. In this organization, we tend to stick to tried and true ways. (reverse-coded)
13. This place seems to be more concerned with the status quo than with changes. (reverse-coded)

Leader-Member Exchange (Graen et al., 1982; $\alpha = .90$)

1. Do you know where you stand with your supervisor . . . do you usually know how satisfied your supervisor is with what you do? (.64)
2. How well does your supervisor understand your job problems and needs? (.77)
3. How well does your supervisor recognize your potential? (.73)
4. Regardless of how much formal authority he/she has built into his/her position, what are the chances that your supervisor would use his/her power to help you solve problems in your work? (.82)
5. Again, regardless of the amount of formal authority your supervisor has, what are the chances that he/she would "bail you out," at his/her expense? (.74)
6. I have enough confidence in my supervisor that I would defend and justify his/her decision if he/she were not present to do so. (.77)

7. How would you characterize your working relationship with your supervisor? (.78)

Innovativeness as a Job Requirement (developed for this study; $\alpha = .85$)

1. My job duties include searching for new technologies and techniques. (.67)
2. Introducing new ideas into the organization is part of my job. (.82)
3. I don't have to be innovative to fulfill my job requirements. (reverse-coded) (.66)
4. My job requires me to try out new approaches to problems. (.73)
5. Suggesting new ideas is part of my job duties. (.80)

Reputation as Innovative (developed for this study; $\alpha = .78$)

1. People come to me when they want new ideas. (.81)
2. Others in the organization often expect me to contribute innovative ideas. (.79)

Dissatisfaction with the Status Quo (developed for this study; $\alpha = .75$)

1. Many things in my department need improvement. (.65)
2. The performance of my organization needs to be improved. (.85)
3. The performance of my work unit needs to be improved. (.66)

Intrinsic Interest (Tierney et al., 1999; $\alpha = .85$)

1. I enjoy finding solutions to complex problems. (.75)
2. I enjoy coming up with new ideas for products. (.75)
3. I enjoy engaging in analytical thinking. (.76)
4. I enjoy creating new procedures for work tasks. (.64)
5. I enjoy improving existing processes or products. (.80)

^aStandardized factor loadings from the measurement model are listed in parentheses after the relevant item. All factor loadings were significant at .05.



Feirong Yuan (fyuan@ku.edu) is an assistant professor of management at the School of Business, The University of Kansas. She received her Ph.D. in management from Texas A&M University. Her research interests include employee creativity and innovation, organizational change, and cross-cultural studies.

Richard W. Woodman (rwoodman@mays.tamu.edu) is the Fouraker Professor of Business and Professor of Management at Texas A&M University. He received his Ph.D. from Purdue University. Dr. Woodman is currently the editor of the *Journal of Applied Behavioral Science*. His research and writing focuses on organizational change and organizational creativity.



Copyright of Academy of Management Journal is the property of Academy of Management and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.