

SELF-REGULATION OF CREATIVITY AT WORK: THE ROLE OF FEEDBACK-SEEKING BEHAVIOR IN CREATIVE PERFORMANCE

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Using 456 supervisor-employee dyads from four organizations, this study examined how employees use one proactive behavior, feedback seeking, as a strategy to enhance their creative performance. As hypothesized, employees' cognitive style and perceived organizational support for creativity affected two patterns of feedback seeking: the propensity to inquire for feedback and the propensity to monitor the environment for indirect feedback. Feedback inquiry related to supervisor ratings of employee creative performance. These results highlight the importance of employees' self-regulatory behaviors in the creative process and show that feedback seeking is not only a strategy that facilitates individual adaptation, but also a resource for achieving creative outcomes.

In the past decade, considerable research efforts have identified and described the individual and contextual factors that facilitate and hinder employees' creative performance at work (see Shalley, Zhou, and Oldham [2004] for a review). Creative performance, defined as the extent to which employees generate novel and useful ideas regarding procedures and processes at work (Oldham & Cummings, 1996; Shalley, 1991), has been examined as a function of individual differences, features of the context surrounding employees, and the interaction between the two (Shalley & Zhou, 2008; Shalley et al., 2004; Woodman, Sawyer, & Griffin, 1993).

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The majority of work on individual differences in creative performance has focused on identifying the personality characteristics and traits associated with creative outcomes. For example, research has shown that creative individuals tend to be more flexible in absorbing information, demonstrably higher in levels of intrinsic motivation for creativity, and more open to new experiences. Researchers continue to examine new individual differences (e.g., "growth needs strength" [Shalley, Gilson, & Blum, 2009] and "learning orientation" [Gong, Huang, & Farh, 2009]). This literature also suggests that managers and organizations can build work environments that support employee creativity by setting creativity work goals, making creativity a job requirement, providing developmental feedback on creative goal progress, leading in a "transformational" manner, and rewarding employees when they achieve creative outcomes (Amabile & Mueller, 2008; Gong et al., 2009; Paulus, 2008; Shalley, 2008; Shalley & Liu, 2007; Shin & Zhou, 2003; Tierney, 2008; West & Richter, 2008; Zhou, 2008).

This impressive support for the role of employee traits and managerial actions in employee creativity suggests that these research traditions should be continued and expanded. It is surprising, however,

that so little is known about the actions employees themselves may take to manage and enhance their own creative performance (Drazin, Glynn, & Kazanjian, 1999) and how these may also contribute to creative performance. Understanding how employees increase their own creative performance may be as important as understanding who they are or how their context facilitates their efforts. Although researchers have proposed that various cognitive processes occur in creativity (Amabile & Mueller, 2008; Drazin et al., 1999; Drazin, Kazanjian, & Glynn, 2008) and that employees behaviorally attempt to produce creative outcomes, empirically, little is known about the specific strategies employees use to manage their creative process and how these strategies may relate to actual creative performance (Drazin et al., 2008; Ruscio, Whitney, & Amabile, 1998).

The view that employees actively manage their creative performance is consistent with self-regulation theory's emphasis on individuals' ability to guide their own goal-directed activities and performance by setting their own standards and monitoring their progress toward these standards (Carver & Scheier, 1981; Vohs & Baumeister, 2004). Self-regulation theory has been applied to a variety of organizational phenomena, including managerial work (Ashford & Tsui, 1991; Tsui & Ashford, 1994), employee socialization (Ashford & Black, 1996), and employee performance (Porath & Bateman, 2006; VandeWalle, Brown, Cron, & Slocum, 1999). On the basis of self-regulation theory's demonstrated utility for studying organizational phenomena, we believe that it also offers a promising lens for gaining insights into employee creative performance.

One key self-regulation tactic that has been identified is *feedback-seeking behavior*: individuals' proactive search for evaluative information about their performance (Ashford & Tsui, 1991; Porath & Bateman, 2006). Feedback-seeking behavior may be central to the creative process for two reasons. First, research has shown that managers can use feedback to promote and nurture the creative performance of employees (Zhou, 2008). However, in today's dynamic world of work, where creativity and innovation have become a source of competitive advantage (Shalley et al., 2009; Zhou, 1998), organizations may not always be able to systematically predefine and prespecify the goals that employees need to achieve (Ashford, George, & Blatt, 2007). Because of the ambiguity accompanying creative work, determining the best managerial interventions for enhancing employees' creative performance has become an increasingly intricate task for managers (Shalley, 2008). For example, the nonrou-

tine character of the creative process means that managers may not provide feedback at the time a performer desires or needs it. To the extent that these factors constrain formal organizational feedback, today's organizations become increasingly dependent on employees' own self-regulation efforts to acquire feedback to maximize their creative performance.

Second, individuals' creative performance is thought to be partially the result of a social process in which others in their environment stimulate and support creativity (Perry-Smith & Shalley, 2003). As such, individuals both within and outside employees' immediate work setting are increasingly important contributors to their creative performance (Madjar, 2005; Madjar, Oldham, & Pratt, 2002). Recent research has shown that employees' interactions with those whose expertise and backgrounds differ from their own (e.g., individuals from different departments and organizations) are an important source of new ideas (Madjar, 2005; Madjar et al., 2002). Although much has been learned from this research, a limitation is that it has not specified the content of the information that is exchanged during these interactions. Research in the information seeking literature has distinguished five types of information that may be exchanged during these interactions: task information about how to perform specific job activities, role information about the expectations associated with a job, social information about how to behave, organizational information about procedures and policies, and performance information about how others are perceiving and evaluating one's performance (Morrison & Vancouver, 2000). All these types of information may be of value to employees' creative performance, and employees may seek all of them. Our focus, however, is on the importance of performance information, which is also called "feedback," in enhancing creative performance. As Zhou (2008) highlighted, feedback may be particularly conducive to creative performance, because feedback reduces some of the uncertainty associated with the changing nature of work and because it helps performers to set creative standards. Feedback may suggest new paths to consider for pushing work forward and stimulate new ideas for improving processes.

We propose that employees' active seeking of feedback is important, as the various external sources that potentially contribute to employee creative performance may not always provide their feedback spontaneously or at the right time. Indeed, more distant, external sources may not be aware of an employee's desire for advice and guidance (Higgins & Kram, 2001), or they may feel that

they have no formal authority to provide feedback and thus may consider not giving it. As such, actively seeking feedback from these sources may be the only way for performers to obtain this crucial external input to enhance their creative performance. Hence, although managers can use feedback as a tool to stimulate and foster creative performance (Zhou, 2008), the above realities suggest that feedback seeking may be a valuable resource for employees in managing their own creative performance.

Considering individuals' attempts to enhance their own creative performance through feedback seeking expands thinking about this phenomenon beyond a focus on adaptation and individual conformance to the demands of an organization (Ashford & Black, 1996; Parker & Collins, 2010) that is dominant in the literature. Research in this dominant view has shown that feedback seeking enables individuals to adapt and respond to continuously changing goals and role expectations (Morrison & Weldon, 1990; Tsui & Ashford, 1994), obtain more accurate self-views (Ashford & Tsui, 1991), improve their task performance (Chen, Lam, & Zhong, 2007), and learn the ropes of a new job (Ashford & Black, 1996; Morrison, 1993). Feedback seeking in this view is a strategy used to achieve better fit with an environment. This dominant view fits the tenets of self-regulation theory (e.g., Carver & Scheier, 1981), yet it does not entirely reflect Ashford and Cummings's (1983) original portrayal of feedback seekers or further theorizing by Tsui and Ashford (1994). Ashford and Cummings (1983) described feedback seekers as proactive and self-determined contributors who can and do set their own standards and seek feedback to achieve personal goals—not solely as individuals who await socialization by others and seek feedback to better live up to the expectations of others. Tsui and Ashford (1994) noted that feedback is simply information about “the self” and contended that this information can stimulate a variety of responses, including attempting to influence rather than conform to the views held by the feedback givers. Despite these theoretical suggestions, however, in summarizing 20 years of research on feedback seeking, Ashford, Blatt, and VandeWalle commented that “the general tone of feedback-seeking literature has been one of seeking to survive, to fit in, and to tailor oneself to the prevailing view held by others in the organization” (2003: 794).

In jobs in which being creative is an explicit job demand, the adaptation perspective is adequate to explain feedback seeking's effects. However, feedback-seeking behavior can also enhance creative performance in jobs in which it is not an explicit

job demand. Feedback seeking increases the amount and diversity of input performers have about their work. We propose that this input can serve as an important stimulus to creative performance. Thus, this study contributes to both the creativity and feedback seeking literatures by emphasizing how feedback seeking can help individuals to attain outcomes beyond adaptation that promote creativity and innovation in organizations and by showing how individuals can enhance their creative performance through their self-regulatory efforts. Specifically, we develop and test a model, shown in Figure 1, that integrates and extends previous creativity research by simultaneously considering individual traits and context factors as antecedents of creative performance and by testing whether feedback-seeking behavior is an underlying mechanism through which these antecedents affect creative performance. Our findings add to the growing literature on individual differences and context factors as predictors of creative performance in suggesting that individuals' behaviors may have an influence as well.

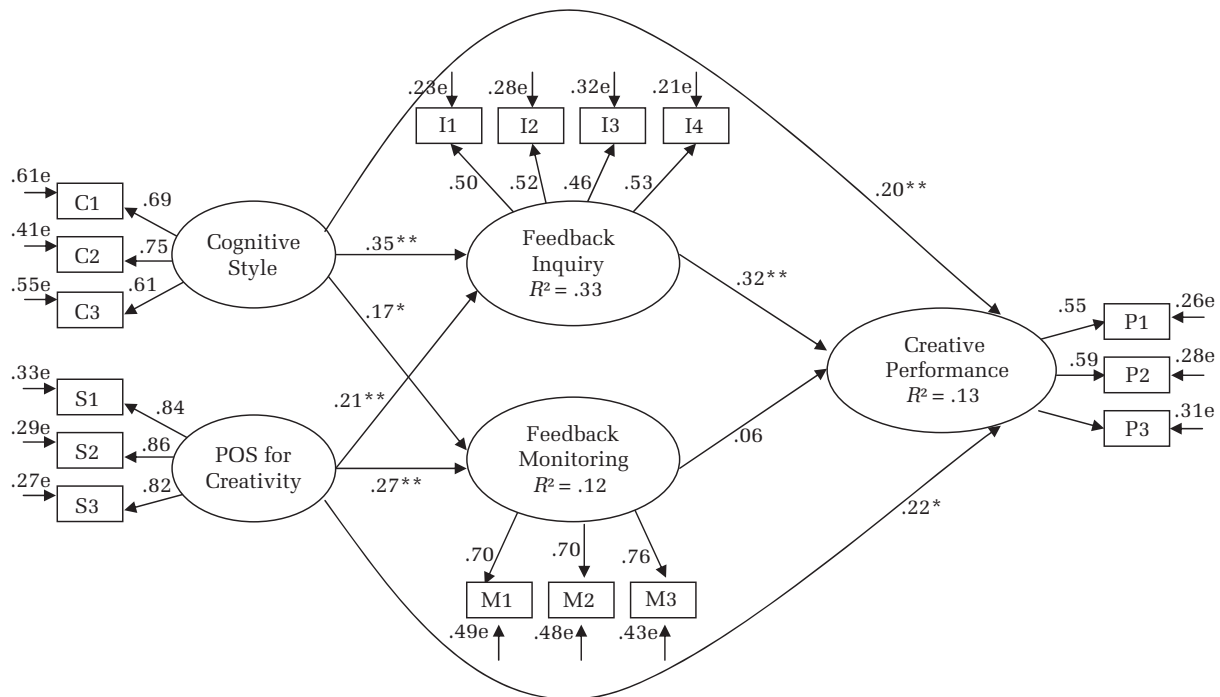
THEORY AND HYPOTHESES

Feedback-Seeking Behavior and Creative Performance

Ashford and Cummings (1983) proposed that employees can seek feedback using either the tactic of inquiry, which involves direct verbal requests for performance evaluations, or the more covert tactic of monitoring, which involves examining their environment for indirect feedback cues. With inquiry, individuals seek input into their performance by directly asking others for feedback. For example, employees may deliberately choose to ask a number of sources for feedback, because it may help them to get new and different insights into their work. With monitoring, individuals observe their own task progress and the actions of those around them to gain insights into aspects of their performance (Ashford & Cummings, 1983). Research has shown that although these feedback-seeking behaviors (particularly monitoring) may be subject to perceptual biases, individuals can increase their overall effectiveness by inquiring for direct feedback and monitoring their environment for indirect cues (Ashford & Tsui, 1991). We propose that individuals can also use these two tactics to attain creative outcomes.

This suggestion may seem counterintuitive. Feedback seeking is often portrayed as reactive and conservative, and frequent feedback seekers as reactive, other-dependent, worried about what others

FIGURE 1
Structural Model^a



^a The path coefficients represent the standardized parameter estimates for the mediated structural model that we tested in SEM. “POS” is “perceived organizational support.”

* $p < .05$

** $p < .01$

Two-tailed tests.

think, and unable to think on their own. Ashford and colleagues, however, have argued that feedback seeking is not inherently reactive or conservative. Indeed, both Grant and Ashford (2008) and Parker and Collins (2010) included feedback seeking as one of several proactive strategies. They portrayed it as a strategy people use to get ahead of demands that is available to individuals interested in taking control of their own destinies in organizations. Tsui and Ashford (1994) wrote about feedback seeking as a valuable resource when a job is ambiguous and involves multiple constituencies (e.g., managerial work). They proposed feedback seeking as a way for an individual to understand how constituents are viewing his/her performance. They theorized that people can then use that feedback information in a variety of ways; they may, for example, use it to conform to constituents’ views or to engage in persuasion to help them to change their views (e.g., Tsui, Ashford, St. Clair, & Xin, 1995). Prior empirical research has mainly focused on feedback seeking in the service of fitting in, of adapting to a setting. The question of whether feedback seeking about one’s performance can also contribute to dynamic and creative processes and performances remains open.

Seeking Frequency and Employee Creative Performance

Building on research highlighting the importance in the creative process of feedback given to a performer (Zhou, 2008), we expect that individuals’ efforts to seek feedback actively will also contribute to their creative performance. Feedback seeking is simply an agentic means for employees to get feedback (and its benefits) more often, on their own schedule, and on the basis of their needs. Though no studies have explicitly linked employees’ feedback-seeking behaviors to creative performance, the logic for such a relationship is as follows: Direct verbal feedback gives a clear picture of how others see the employees’ work and ideas, thereby facilitating subsequent adjustments and improvements to the ideas.

A habit of frequent feedback seeking, even if from (in the extreme) a single source, or target, brings a performer in contact with that target’s view on his/her work, maintains that contact as those views perhaps shift over time in response to changing conditions, and can provide differing perspectives that help the performer make new creative links that are relevant for his/her work. Essentially, we

propose that people who seek feedback on their performance more frequently hear more views that may clash with their own (or clash with each other). Deciding how to respond to those clashes stimulates creativity.

Employees do not always need to communicate with others to obtain such input, however. Indeed, research conducted from a social cognitive perspective has shown that individuals can learn to think and behave creatively by observing and monitoring creative models (Shalley & Perry-Smith, 2001; Zhou, 2003). In doing their jobs, individuals may make observations of how others proceed in their work or how others act and react toward them and their work. These observations can serve as feedback on their own work and work processes (Ashford & Cummings, 1983) and may stimulate more divergent thought as an input to creative performance. Monitoring for feedback in this manner may be an attractive strategy, as individuals can obtain feedback on their work and make adjustments without revealing their desire for the information. Thus they can obtain feedback without the “image costs” associated with directly asking for it (Larson, 1989; Northcraft & Ashford, 1990). If individuals are being creative in their work by trying out new ideas or processes, attending to these more indirect cues in the environment through monitoring may be especially attractive, as the data are often readily available in the actions and reactions of others, and performers can get the feedback they need to further refine their nascent new ideas without exposing themselves to some of the potential image costs associated with inquiring for feedback.

Thus, feedback information, whether obtained directly via inquiry or indirectly via monitoring cognitively stimulates individuals to think outside of the box, consider alternatives, and generate more ideas (Madjar, 2005). The more frequently performers seek, the more data they have upon which to base creative responses:

Hypothesis 1a. Employees' feedback-seeking behavior affects creative performance: Feedback inquiry frequency is positively related to creative performance.

Hypothesis 1b. Employees' feedback-seeking behavior affects creative performance: Feedback monitoring frequency is positively related to creative performance.

Seeking Breadth and Creative Performance

Just as more frequent feedback seeking may enhance creative performance, seeking broadly across diverse sources may also do so. Researchers have

focused primarily on employees' feedback source preferences (e.g., Ashford & Tsui, 1991) and on the source characteristics that influence these preferences (e.g., Levy, Cober, & Miller, 2002; Vancouver & Morrison, 1995; Williams, Miller, Steelman, & Levy, 1999). For example, Ashford and Tsui (1991) found that managers tend to seek more feedback from supervisors than from peers and subordinates. Exploring the underlying rationale for these choices in the laboratory, Vancouver and Morrison (1995) found that several source characteristics, including their “reward power,” accessibility, and expertise, trigger feedback seekers' preferences. Although these results highlight that individuals discriminate among various feedback sources, the impact of an overall propensity to seek feedback broadly is unknown. It may be that some individuals discriminate among sources on the basis of their reward power, accessibility, and expertise and as a result seek narrowly—from, say, only their supervisors. Others may seek more broadly, tapping a range of feedback sources. For example, they can also directly inquire for feedback from immediate coworkers, other organizational sources (e.g., peers in other departments), and extraorganizational sources (e.g., peers in other organizations) (Ashford & Tsui, 1991; Miller & Jablin, 1991; Morrison, 1993; Vancouver & Morrison, 1995). Further, using monitoring, employees can observe not only the behaviors of their supervisors to infer a feedback message, but also the behaviors of their peers and even of peers in other areas and companies as they come into contact with them through, for example, task forces or industry events. Through direct inquiry and observing the actions and reactions of many people, broad feedback seeking via inquiry and monitoring can yield divergent inputs for a performer and stimulate the creative process.

This suggestion is consistent with theorizing in the creativity literature that diverse input and knowledge enhance creative performance (Cohen & Levinthal, 1990; Perry-Smith, 2006, 2008). For example, drawing on insights derived from the literatures on individual cognition (Ohlsson, 1992), brainstorming (Paulus, Larey, & Dzindolet, 2001) and group diversity (Milliken & Martins, 1996), Madjar (2005) theorized that employees who seek information more frequently from individuals within and outside their organizations are more creative, because of the variety of information and insights the multiple sources provide. Similarly, individuals who seek feedback about their performance broadly, whether through inquiry or monitoring, increase their exposure to potentially differing views about what they should be doing, what is going well, what's important, and so forth. This

diversity of input gives those who seek broadly a greater chance of coming up with creative responses about and inputs into their work.

Building on these suggestions and on the demonstrated impact of feedback given by others on the creative process (e.g., Zhou, 1998; and see Zhou [2008] for a recent review), we hypothesize:

Hypothesis 2a. Employees' feedback-seeking behavior affects creative performance:

Feedback inquiry breadth is positively related to creative performance.

Hypothesis 2b. Employees' feedback-seeking behavior affects creative performance:

Feedback monitoring breadth is positively related to creative performance.

Cognitive Style and Feedback-Seeking Behavior

Not all individuals are equally motivated to use feedback seeking as a strategy to enhance their creative performance. One variable that may influence this tendency is an individual's cognitive style. This variable, indexing individuals' preferred ways of gathering, structuring, and applying information (Hodgkinson & Sadler-Smith, 2003; Kirton, 1976, 1994), has been studied extensively as an antecedent of creative performance (Tierney, Farmer, & Graen, 1999; see Shalley et al. [2004] for a review).

Debate exists about the conceptualization and measurement of cognitive style (Cools & Van den Broeck, 2007; Hodgkinson & Sadler-Smith, 2003), but Kirton's (1994, 2003) framework has received the most attention in the creativity literature (Shalley et al., 2004). This framework suggests that individuals fall on a continuum anchored by two general orientations: (1) an adaptive style, characterized by a pronounced preference for accurate information, facts, figures, and conventional theories and procedures, and (2) an innovative style, characterized by a preference for more personal information and divergent thinking and problem solving. Though Kirton's (1994) theory suggests that people at both the adaptive and innovative ends of the continuum can demonstrate equal levels of creative performance (though in different ways), empirical work has shown a positive link between an innovative style and creative performance (e.g., Shalley et al., 2009; Tierney et al., 1999). For example, Tierney et al. (1999) found that several indicators of creative performance were positively associated with having a more innovative style. One limitation of prior studies, however, is that they have not examined *why* cognitive style affects creative performance. Presumably, a more

innovative cognitive style affects creative performance through its impact on employee behaviors that enable this performance (Hodgkinson & Sadler-Smith, 2003). Tierney et al. offered one suggestion in this regard, proposing that individuals with a more innovative cognitive style may be more likely to seek and integrate diverse information and that this tendency stimulates creative outcomes.

We propose that individuals' cognitive style not only affects their creative performance by increasing their tendency to seek and integrate information, but also by increasing their propensity to seek feedback. More specifically, we expect that individuals with a more innovative style are more likely to both inquire for feedback and monitor their environment for indirect feedback cues both more frequently and more broadly. By doing so, they increase and diversify their knowledge bases about their work, which allows them to act more in alignment with their cognitive orientation (i.e., to be creative).

Our proposal is supported by research showing that the cognitive style of individuals determines not only whether or not they like new information, but also the type of information they prefer (McKinnel Jacobson, 1993). Kirton (1994) stated that innovators' preference for divergent thinking makes them more interested in and attuned to information that leaves room for it. Supporting this view, research has shown that individuals with a more innovative style tend to prefer information that reflects others' opinions (preferably diverse opinions) over facts and figures (McKinnel Jacobson, 1993). Although this preference for others' opinions has surface similarities to that held by "high self-monitors" (Gangestad & Snyder, 2000; Snyder, 1974), self-monitoring is by definition about conformity, about being chameleon-like and living up to others' expectations (Snyder, 1974). It is not surprising, then, that self-monitoring research has suggested a negative relationship with creativity (de Vet & de Dreu, 2007). An innovative cognitive style, however, is somewhat different. Kirton (1994) defined an innovative cognitive style as an individual's preference for redefining posed problems and for generating ideas likely to deviate from the norm. Thus, people with such an innovative cognitive style value others' opinions over facts and figures because these opinions give them ideas or food for thought while still allowing for divergent thinking and drawing their own conclusions. Facts and figures stimulate convergent thinking (Houtz, Selby, Esquivel, Okoye, Peters, & Treffinger, 2003; Isaksen, Lauer & Wilson, 2003; Kirton, 1994), but feedback is just an opinion others hold about one's work. Individuals whose styles anchor

the more innovative end of the cognitive style continuum are comfortable in the realm of opinion; they value personal information, even though this information can be biased (Kirton, 1994). By more frequently and broadly seeking opinions, innovators increase their pools of information, but information that still allows for personal interpretation and the divergent views that fit with their style's preference for divergent thinking.

Individuals with styles on the more adaptive end of the continuum prefer convergent thinking (Gryskiewicz & Tullar, 1995; Kirton & de Ciantis, 1986). As such, they tend to be more attuned to data that provide them with unbiased information on what is right and what is wrong (Gryskiewicz & Tullar, 1995). Individuals with more of an adaptive style tend to have a preference for unbiased, impersonal, and factual information (Houtz et al., 2003). Given this preference and the tendency of individuals with more adaptive styles to be less socially engaged (Isaksen et al., 2003; Jacobson, 1993), they may prefer feedback from their task or objective monitors of performance rather than others' opinions. Such impersonal, objective feedback may not contribute to creative performance. Accordingly, we expect that the more innovative an individual's cognitive style, the more he or she will be interested in others' feedback and will try to acquire this feedback by actively monitoring the environment and directly and frequently asking a broad range of sources for feedback.

Hypothesis 3a. Employees' cognitive styles affect their general propensity to seek feedback: The more individuals exhibit an innovative cognitive style, the more frequently they inquire for feedback.

Hypothesis 3b. Employees' cognitive styles affect their general propensity to seek feedback: The more individuals exhibit an innovative cognitive style, the more frequently they monitor for feedback.

Hypothesis 3c. Employees' cognitive styles affect their general propensity to seek feedback: The more individuals exhibit an innovative cognitive style, the more broadly they inquire for feedback.

Hypothesis 3d. Employees' cognitive styles affect their general propensity to seek feedback: The more individuals exhibit an innovative cognitive style, the more broadly they monitor for feedback.

Perceived Organizational Support for Creativity and Feedback Seeking

Building on theory and research suggesting the view that supportive contexts encourage both employee creative performance (see Shalley et al. [2004] for a review) and feedback-seeking behavior (Ashford et al., 2003), we expect that employees' tendency to seek feedback to enhance their creative performance will in part be determined by their perceptions of their organizational context. We focus on perceived organizational support for creativity, which refers to employees' perceptions of the extent to which their organization stimulates, respects, rewards, and recognizes creativity (Scott & Bruce, 1994; Zhou & George, 2001). Perceived organizational support for creativity is also sometimes called "climate for creativity" (Scott & Bruce, 1994). Perceived organizational support for creativity has already been identified as a direct antecedent of employee creative performance (Zhou & George, 2001). Little is known, however, about the mechanisms through which an organizational context that supports creativity impacts creative performance. Theoretically, contextual conditions are believed to influence creative performance via their effects on employees' intrinsic motivation (Shalley et al., 2004). However, empirical research on the mediating role of intrinsic motivation has yielded inconsistent results (Shalley & Perry-Smith, 2001; Shin & Zhou, 2003). In response to these inconsistent results, Shalley and colleagues (2004) suggested that contextual characteristics may not only affect creative performance via intrinsic motivation but also via a number of alternative mechanisms. As Scott and Bruce (1994) suggested, supportive contexts may also channel and direct employees' behaviors toward creative performance. We believe feedback-seeking behavior to be one such additional behavioral mechanism.

Though organizational support for creativity has not been directly related to employees' feedback-seeking behaviors, Ashford et al. (2003) alluded to the possible role of a supportive organizational context. They argued that in supportive organizational contexts, employees experience few negative consequences when they directly ask for feedback. Research showing that supportive contexts neutralize employees' image concerns about creative "voice" (Zhou & George, 2001), about raising issues in organizations (Ashford, Rothbard, Piderit, & Dutton, 1998), and about engaging in innovative behavior (Yuan & Woodman, 2010). In view of this research, we propose that when there is perceived support for creativity, employees see fewer risks in engaging in behaviors promoting their creative per-

formance, including seeking feedback about their work.

A supportive context may also stimulate employees to be more attentive to indirect feedback cues about their performance. Employees working in contexts supportive of their creativity experience their organizations as accepting their input and ideas and see management throughout those organizations as open and attuned to employees' suggestions for improvement (Zhou & George, 2001). Employees may respond to this organizational attentiveness to feedback from them by being more open to feedback themselves and by monitoring their environment for feedback to bolster their work performance. Indeed, research in related areas suggests that employees tend to reciprocate the presence of perceived organizational support by engaging in continuous learning behaviors, for instance by participating in developmental experiences that are beneficial to their organization (Wayne, Shore, & Liden, 1997), seeking organization-relevant information, learning important work skills (Rhoades & Eisenberger, 2002), and engaging in self-reflection (West & Richter, 2008).

In addition to enhancing the frequency of feedback seeking, a context that supports creativity may also stimulate employees to seek feedback from a wider variety of sources. Researchers have proposed that in organizations in which creativity is encouraged, employees are stimulated to process information from diverse sources and to build broad networks (West & Richter, 2008). Such contexts are also more likely to convey that many individuals, not only those within employees' immediate work groups (e.g., their immediate supervisors and coworkers), but also individuals in other departments and even outside the employees' own organization (Cole, Schaninger, & Harris, 2002) are available and willing to help with developmental needs. Further, in the same way that supportive contexts reduce barriers to more frequent feedback seeking, they also reduce perceived obstacles to seeking feedback broadly (for instance, by reducing perceived image costs associated with asking for feedback across departmental lines). As such, we believe that contexts that support creativity also encourage employees to acquire feedback from a broader variety of feedback sources.

All these elements suggest the possible role of a supportive climate in the feedback-seeking process. Accordingly:

Hypothesis 4a. Perceived organizational support for creativity is positively associated with employees' feedback-seeking behaviors: The more employees perceive organizational sup-

port for creativity, the more frequently they inquire for feedback.

Hypothesis 4b. Perceived organizational support for creativity is positively associated with employees' feedback-seeking behaviors: The more employees perceive organizational support for creativity, the more frequently they monitor for feedback.

Hypothesis 4c. Perceived organizational support for creativity is positively associated with employees' feedback-seeking behaviors: The more employees perceive organizational support for creativity, the more broadly they inquire for feedback.

Hypothesis 4d. Perceived organizational support for creativity is positively associated with employees' feedback-seeking behaviors: The more employees perceive organizational support for creativity, the more broadly they monitor for feedback.

The Relationship between Traits and Context and Creative Performance

We hypothesize that employees' feedback-seeking behaviors mediate the relationship between our independent variables—individuals' cognitive style and perceived organizational support for creativity—and creative performance. That is, we propose that people operating in supportive contexts and with an innovative style have higher levels of creative performance because they seek feedback more frequently and broadly. Their proactive self-regulation gives them more information and more diverse information from which to derive creative ideas. Because we assume that variables other than feedback seeking may explain the effects of these variables on creative performance (e.g., intrinsic motivation), we expect the mediation to be partial.

Hypothesis 5a. The impact of cognitive styles and perceived organizational support for creativity on creative performance is partially mediated by the frequency of employees' inquiry and monitoring feedback-seeking behaviors.

Hypothesis 5b. The impact of cognitive styles and perceived organizational support for creativity on creative performance is partially mediated by the breadth of employees' inquiry and monitoring feedback-seeking behaviors.

METHODS

Data and Sample

Data were collected as part of a larger research project on proactivity and feedback dynamics in organizations. The sample consisted of 456 supervisor-subordinate dyads from four consulting firms, each employing between 300 and 800 employees. We focused on the “knowledge workers” in these firms. Although creativity is not an explicit part of knowledge work, creating new knowledge and approaching their work creatively is thought to be important to success in such work (Davenport, 2005).

Two sets of online questionnaires were used: a survey for subordinates and a survey for their immediate supervisors. For each organization, we developed a database of knowledge workers in cooperation with the human resources department, using Davenport’s definition of knowledge work as our selection criteria: “Knowledge workers have high degrees of expertise, education, or experience, and the primary purpose of their jobs involves the creation, distribution or application of knowledge” (2005: 19). Because of the nested structure of our data (that is, subordinates are “nested within” their supervisors, and supervisors’ work groups are nested within their organizations), the database included information about employees’ work group and team supervision.

Employees and their supervisors filled out the online survey during regular working hours. To limit the burden on the supervisors, who each supervised 3 to 11 employees (the average was 4.3), we asked them to evaluate the creative performance of just 3 of their subordinates, whose names were selected at random. After 3 subordinates had been evaluated, the supervisors had the option of evaluating their other subordinates as well. Each participating supervisor evaluated on average 3.73 employees.¹ From a population of 908 employees and 162 managers, 661 employees and 122 supervisors filled out the survey (a response rate of 73 percent for both groups), and we obtained 456 usable supervisor-subordinate dyads out of 908 possible dyads (an effective response rate of 50.2 percent). On average, the employees in the sample had 2.79 years of job tenure and had worked in their organization for 3.3

years. The average dyadic relationship length was 2.63 years. Fifty-six percent of the sampled employees were female; 76 percent worked full-time; and their average age was 34 years.

Measures

Cognitive style. We used a 13-item reduced version of the Kirton Adaptation-Innovation (KAI) Inventory validated by Bagozzi and Foxall (1995)² in three different samples to measure cognitive style. Respondents were asked to indicate, on a scale ranging from 1 (“very hard”) to 5 (“very easy”), how difficult it would be for them to maintain specific types of innovative and adaptive behaviors. A sample item from the scale is “Create something new rather than improve it.” Kirton (1976) proposed a single continuum of cognitive styles anchored by “innovative style” on one end and “adaptive style” on the other. In validation research, Bagozzi and Foxall (1995) concluded that this construct was better represented by three dimensions: originality, efficiency, and rule governance. An innovative style would entail higher scores on originality and lower scores on efficiency and rule governance, and an adaptive style would correspond to lower scores on originality and higher scores on efficiency and rule governance. Bagozzi and Foxall, however, also assessed whether a higher-order factor might underlie these three dimensions and found support for that conclusion.

We examined both of Bagozzi and Foxall’s (1995) conclusions in our data. In line with Baer, Oldham, and Cummings (2003), we found support for a higher-order factor solution with one second-order factor (representing cognitive style) and three first-order factors (representing the three subdimensions reported by Bagozzi and Foxall [1995]). This model demonstrated an acceptable fit and adequate measurement properties ($\alpha = .83$; $\chi^2 = 59.04$, $df = 62$, $p > .05$; NNFI = .99, CFI = .99, RMSEA = .00). Given these results, we used the three subdimensions as indicators of a latent “innovative style” variable. This latent second-order construct thus incorporates the three first-order dimensions in such a way that higher scores represent an innovative cognitive style.

Perceived organizational support for creativity. We measured perceived organizational support for creativity using three items from Zhou and

¹ We tested for significant differences between the respondents who were rated by their superior and those who were not rated with regard to all study variables. Chi-square tests (i.e., for demographic variables) and two-sample *t*-tests indicated no significant differences between the rated and the nonrated respondents.

² Scales based on the KAI Inventory (Kirton, 1976, 2003) were used with the express permission of Dr. Michael Kirton. Since we could not use the complete version, Dr. Kirton suggested that this part of our study should be considered a pilot.

George's (2001) scale, which was adapted from a scale developed by Scott and Bruce (1994; $\alpha = .85$). A sample item is "Creativity is encouraged at [company]."

Frequency of feedback inquiry. Most feedback seeking studies have assessed feedback seeking from supervisors (Chen et al., 2007; Lam, Huang, & Snape, 2007) or have not distinguished among various feedback sources. One notable exception is a scale that Callister, Kramer, and Turban (1999) adapted from Ashford's (1986) original feedback seeking scales. The scale distinguishes between supervisor feedback inquiry and coworker feedback inquiry. Because we sought to assess feedback seeking that extends beyond supervisors and immediate coworkers, we further adapted the scale to capture a broader range of others that employees may consult when seeking feedback (Miller & Jablin, 1991; Morrison, 1993): supervisors, coworkers, other organizational sources (e.g., peers in other departments), and extraorganizational sources (e.g., peers in other organizations). Using a scale ranging from 1 ("never") to 5 ("very frequently"), respondents indicated the extent to which the statements corresponded to their own behavior. Sample items include "How frequently do you directly ask your supervisor for feedback about your work?" and "How frequently do you directly ask your supervisor for an informal appraisal of your work" (each question was repeated for each of the feedback sources).

The scales measuring feedback inquiry from colleagues in other departments and from extraorganizational sources were developed for this research. We therefore first conducted an exploratory factor analysis (EFA) on all the feedback seeking items on half of the sample, using principal components analysis with a varimax rotation. Inspection of the eigenvalues and scree plots suggested that four factors were represented in the data, corresponding to the four sources of feedback seeking. In a next step, we conducted a confirmatory factor analysis (CFA) on the other half of the data and found an acceptable fit for a single second-order factor solution with the feedback sources as four distinct first-order factors ($\alpha = .84$; $\chi^2 = 47.75$, $df = 50$, $p > .05$; NNFI = .99, CFI = .99, RMSEA = .00). This single second-order factor solution supports Morrison's (1993) claim that individuals have a general tendency to seek feedback from various sources but that they also differentiate among the sources.

Frequency of feedback monitoring. Items measuring feedback monitoring were adopted from the scales developed by Ashford and colleagues (Ashford, 1986; Ashford & Tsui, 1991). Eight items asked how frequently respondents observed and monitored the behaviors of others to obtain infor-

mation about their own performance ($\alpha = .72$). Sample items include "How frequently do you pay attention to how your boss acts toward you in order to understand how he/she perceives and evaluates your work?"; "How frequently do you compare yourself with peers in your organization (i.e., persons at your level within the organization?)" and "How frequently do you compare yourself with peers in other organizations (i.e., persons at your level within other organizations?)" An EFA on half of the sample and a CFA on the other half revealed that one factor was represented in the data. Thus, respondents had an overall propensity to monitor for feedback and did not differentiate among the various feedback sources. Given this finding, we were unable to examine Hypothesis 2b, and we examined our breadth hypotheses for inquiry only.

Breadth of feedback inquiry. To capture the extent to which individuals allocated their feedback inquiry efforts among the four targets of seeking examined in this study, we turned to an index typically used in economics to calculate a firm's market share across industries (Kelly, 1981), the Herfindahl index. In economics, this statistic gives an estimate of a firm's emphasis on one industry versus its spread across several. In our case, it captures the "market share" of a person's feedback seeking that is allocated to each target of that seeking. By summing these shares, we created a measure of breadth. The calculation is:

$$\text{Herfindahl index} = \left(1 - \left[\left\{ \frac{\text{seeking from supervisor}}{\text{total seeking}} \right\}^2 + \left\{ \frac{\text{seeking from team peers}}{\text{total seeking}} \right\}^2 + \left\{ \frac{\text{seeking from peers in other departments}}{\text{total seeking}} \right\}^2 + \left\{ \frac{\text{seeking from external peers}}{\text{total seeking}} \right\}^2 \right] \right). \quad (1)$$

The result is an index that ranges from 0 to .75, with high scores representing greater breadth.

Creative performance. Following prior research, we used supervisor ratings to assess employees' creative performance (Zhou, 1998, 2003; Zhou & George, 2001). Using 13 items (Zhou, 1998), supervisors rated the creative performance of their subordinates on a scale ranging from 1 ("not at all characteristic") to 5 ("very characteristic"). A sample item taken from the scale is "Comes up with creative solutions to problems." As in previous research, these items loaded on a single factor ($\alpha = .84$).

Controls. Prior research has shown that employees' tendency to seek feedback in part depends on the length of their work experience (e.g., Ashford, 1986; Ashford & Black, 1996). In keeping with other feedback seeking studies (e.g., VandeWalle, Gansan, Challagalla, & Brown, 2002), we therefore examined the role of job tenure. Following previous creativity research (Zhou, 2003), we also examined the control variables of age and organizational position. Finally, to assess the potential effects of the organization in which an individual is employed and of the relationship between a sampled supervisor and subordinate, we examined the role of company membership and the length of the dyadic relationship between subordinate and supervisor (as reported by the subordinate).

Data Considerations and Analytical Plan

After inspecting the measurement properties of our variables, we examined several aspects of our data. First, we ensured that the assumptions of normality, homogeneity of variance, linearity, and absence of multicollinearity were met. Because the data had a nested structure, we also checked for the presence of dependence within the work groups and for supervisor effects on ratings of creative performance (Kenny, Kashy, & Cook, 2006). To assess dependence in our data, we followed the procedure recommended by Lam et al. (2007) and conducted two series of analyses. In the first series, we tested our model using multilevel modeling (HLM 6.06) to control for the effects of different supervisors. To assess the extent to which group-level effects were biasing our estimates, we analyzed ICC1, ICC2, and $r_{wg(j)}$ values, which here would respectively indicate the proportion of variance in ratings due to team membership (Bliese, 2000), the reliability of the team mean differences (Bliese, 2000), and within-group agreement for multiple item measures (James, Demaree, & Wolf, 1984). ICC values and $r_{wg(j)}$ can range between 0 and 1, with higher scores indicating that group-level effects are present. There is no generally agreed upon cutoff value for ICC1 values (Kanfer, Chen, & Pritchard, 2008), but the typical cutoff for both $r_{wg(j)}$ and ICC2 is .70 (Klein & Kozlowski, 2000). In our study, values for all three statistics were low, indicating that group-level effects were not biasing our results (perceived organizational support for creativity: ICC1 = .08, ICC2 = .25, $r_{wg(j)}$ = .17; cognitive style: ICC1 = .05, ICC2 = .16, $r_{wg(j)}$ = .15; feedback inquiry: ICC1 = .08, ICC2 = .25, $r_{wg(j)}$ = .17; feedback monitoring: ICC1 = .04, ICC2 = .13, $r_{wg(j)}$ = .20; for supervisor-rated creative performance: ICC1 = .09, ICC2 = .27, $r_{wg(j)}$ = .19).

Because our frequency and breadth measures consisted of different treatments of the same data, we did not test a single model of all of our hypotheses. Rather, we tested the frequency and breadth hypotheses separately, using regression analysis to test our breadth hypotheses and structural equation modeling (SEM) to test our frequency hypotheses. As these analyses yielded results similar to those of the HLM analyses and given the low ICC and $r_{wg(j)}$ values, we followed the recommended approach of only reporting the results of the regression and path analyses (Lam et al., 2007; van der Vegt, van de Vliert, & Oosterhof, 2003).^{3, 4}

RESULTS

Table 1 presents the means, standard deviations, reliability coefficients, and correlations among the study variables.

Analyses Regarding Frequency of Seeking

The indicators and constructs were formed as follows: For constructs with a higher-order factor structure (e.g., inquiry and cognitive style), we reduced the number of parameters to be estimated following the partial aggregation method (Bagozzi & Edwards, 1998; Little, Cunningham, & Shahar, 2002). This procedure involves averaging responses on subsets of items measuring a construct. On the basis of exploratory and confirmatory factor analyses, we formed three indicators for cognitive style (representing the three subscales) and four indicators for employees' feedback-seeking inquiry (representing the four sources). Because monitoring and creative performance were unidimensional constructs, we followed the procedure recommended by

³ Controls were included in the HLM analyses. We tested the model both with and without control variables. Because the results of both analyses were the same, the control variables were not included in the SEM analysis. However, to hold control variables constant for the SEM analysis without using up degrees of freedom, we followed a procedure used by Kammeyer-Mueller and Wanberg (2003) in which control variables were partialled out of the covariance matrix prior to analysis.

⁴ In line with previous research (Tierney et al., 1999), we also tested whether employee cognitive style and perceived organizational support for creativity interacted in impacting creative performance. The regression analysis showed no impact of the interaction of cognitive style and perceived organizational support for creativity on creative performance ($\beta = -.01$, n.s.), nor did the interaction relate to the feedback-seeking behaviors ($\beta = -.05$, n.s., for inquiry; $\beta = -.02$, n.s., for monitoring).

TABLE 1
Means, Standard Deviations, Reliabilities, and Correlations^a

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Cognitive style	3.82	0.61	(.83)												
2. Perceived organizational support for creativity	3.44	0.75	.15**	(.85)											
3. Frequency of inquiry	2.71	0.62	.21**	.20**	(.84)										
4. Inquiry from supervisor	2.81	0.68	.12**	.15**	.62**	(.83)									
5. Inquiry from department peers	2.78	0.63	.09*	.12**	.68**	.26**	(.89)								
6. Inquiry from organizational peers	2.54	0.60	.15**	.09	.68**	.21**	.31**	(.81)							
7. Inquiry from peers in other organizations	2.38	0.61	.21**	.17**	.71**	.21**	.32**	.37**	(.81)						
8. Monitoring	3.50	0.64	.12**	.20**	.35**	.30**	.21**	.05	.11*	(.70)					
9. Breadth of inquiry (Herfindahl index)	0.71	0.03	.11**	.16**	.30**	.10*	.10*	.19**	.20**	.21**					
10. Creative performance	3.03	0.84	.23**	.16**	.23**	.17**	.18**	.10*	.18**	.10*	(.84)				
11. Organization tenure	3.3	4.21	.09	.08	-.05	.03	-.02	.01	.02	.04	.03				
12. Age	34	14.8	-.08	.07	-.03	.02	.04	.03	.05	.07	-.06	.10*			
13. Position	0.22	0.36	-.05	.06	-.02	.01	.04	.05	.05	.10*	-.03	.04	.10*		
14. Company	2.1	0.70	.02	.09	-.09	-.08	-.05	-.06	-.06	.03	-.03	.02	.03	.04	
15. Dyad length	2.63	4.51	.09	.08	-.05	.03	-.01	.01	.03	.06	.04	.10*	.09	.09	.02

^a Values on the diagonal in parentheses represent the coefficient alpha reliabilities.

* $p < .05$

** $p < .01$

Little et al. (2002) and created three parcels of randomly selected items to serve as indicators for these variables. Perceived organizational support for creativity was measured with only three items, so, in keeping with the total disaggregation model (Bagozzi & Edwards, 1998), we used the item scores as the indicators for these constructs.

To test our conceptual model, we followed the procedure described by Bagozzi and Bergami (2000).

Specifically, we compared a fully mediated baseline model to a number of alternatives, including the hypothesized model specifying partial mediation. The chi-square test for this baseline model was significant and thus indicated poor fit ($\chi^2 = 135.40$, $df = 96$, $p < .05$), a result frequently found with large samples. The other fit indexes, however, indicated that our model fitted our data well (NNFI = .98, CFI = .99, RMSEA = .03).

TABLE 2
Comparison of the Baseline Structural Model to Alternative Models

Model	χ^2	df	$\Delta\chi^2$	Conclusion
Baseline: Fully mediated	135.40	96		
Alternative 1: Hypothesized ^a Perceived organizational support for creativity → creative performance relaxed Cognitive style → creative performance relaxed	101.32	94	34.08**	Significantly better fit than baseline model. Both paths were significant.
Alternative 2: Alternative 1 with monitoring → creative performance fixed to 0	101.82	95	0.50	Most parsimonious model.
Alternative 3: Alternative 2 with Perceived organizational support for creativity → monitoring fixed to 0 Cognitive style → monitoring fixed to 0	141.40	97	40.08**	Significantly poorer fit than alternative model 2.

^a Figure 1 shows the hypothesized model.

** $p < .01$

In a next step, we compared this baseline model with a number of alternative models to determine whether our model was sufficiently parsimonious and comprehensive. Table 2 reports the results from these analyses. First, we compared the baseline with our hypothesized, partially mediated model, which is shown in Figure 1. Thus, we added two additional direct paths to the baseline model: one from cognitive style to creative performance and one from perceived organizational support for creativity to creative performance. This saturated model fitted our data significantly better ($\chi^2 = 101.32$, $df = 94$, $p > .05$; NNFI = .99, CFI = .99, RMSEA = .01; $\Delta\chi^2[2] = 34.08$, $p < .01$). Figure 1 reports the parameter estimates for this structural model. As the figure shows, the structural equation analysis shows that employees' feedback inquiry (but not their feedback monitoring) is significantly related to creative performance, supporting Hypothesis 1a (path coefficient = .32, $p < .05$), but not Hypothesis 1b (path coefficient = .06, n.s.). Cognitive style and perceived organizational support for creativity impact the frequency of feedback inquiry (path coefficient = .35, $p < .05$, for cognitive style; path coefficient = .21, $p < .05$, for perceived organizational support for creativity) and feedback monitoring (path coefficient = .17, $p < .05$, for cognitive style; path coefficient = .27, $p < .05$, for perceived organizational support for creativity), supporting Hypotheses 3a, 3b, 4a, and 4b. The coefficients for the paths from both cognitive style and perceived organizational support for creativity to creative performance were significant (.20, $p < .05$, and .22, $p < .05$, respectively), providing initial support for Hypotheses 5a and 5b.

To further assess whether feedback inquiry (partially) mediates the relationship between our independent variables and creative performance, we also followed the procedure recommended by James, Mulaik, and Brett (2006). We first estimated the indirect effects and then used a bootstrapping technique to construct confidence intervals (Stine, 1989). The indirect effects were both significant (.04 for the path from perceived organizational support for creativity to supervisor-rated creative performance via feedback inquiry and .08 for an innovative cognitive style to supervisor-rated creative performance via feedback inquiry), suggesting that frequent feedback inquiry serves as a partial mediator between our antecedents and supervisor-rated creative performance. Thus, the structural equation analyses show that the frequency of feedback inquiry mediates the impact of cognitive style and perceived organizational support for creativity on creative performance, but suggests partial mediation, thereby supporting Hypothesis 5a.

Given that we found a nonsignificant path from monitoring to creative performance in both the baseline and the hypothesized models, we also compared these models to one in which we fixed the path coefficient from monitoring to creative performance to zero (i.e., alternative model 2 in Table 2). This model did not significantly change our chi-square statistic, bolstering our previous finding that Hypothesis 1b was not consistent with our data ($\chi^2 = 101.82$, $df = 95$, $p > .05$; NNFI = .99, CFI = .99, RMSEA = .01; $\Delta\chi^2[1] = .50$, n.s.).

Next, to assess whether an even more parsimonious model would fit our data equally well, we also dropped the paths from the independent variables to monitoring. This deletion significantly worsened the fit of alternative model 2 ($\chi^2 = 141.40$, $df = 97$, n.s.; NNFI = .98, CFI = .98, RMSEA = .03; $\Delta\chi^2[2] = 40.08$, $p < .05$), indicating that this model was not sufficiently comprehensive. In summary, the results of our structural equation analysis show that both cognitive style and perceived organizational support for creativity affect employees' creative performance and that how frequently employees inquire for feedback partially mediates these effects.

Analyses Regarding Breadth of Feedback Seeking

Results regarding the Herfindahl statistic suggest that our sample members tended to spread their feedback inquiry across targets (the mean for the entire sample was .71). A regression of supervisor-rated creative performance on the Herfindahl index for feedback inquiry showed a significant impact of the breadth of inquiry on supervisor-rated creative performance ($\beta = .22$, $p < .01$). This result supports Hypothesis 2a and suggests that individuals benefit from seeking more broadly from various sources of feedback.

To test whether breadth of seeking mediates the relationship between innovative style, perceived organizational support for creativity and supervisor ratings of creative performance, we followed procedures established by Baron and Kenny (1986). We first regressed supervisor-rated creative performance on our independent variables. We found a positive effect of perceived organizational support for creativity ($\beta = .13$, $p < .01$) and of an innovative cognitive style ($\beta = .21$, $p < .01$) on supervisor-rated creative performance. When we subsequently entered the independent variables and the Herfindahl statistic (capturing breadth) simultaneously into the regression, we found a significant impact of breadth of inquiry on supervisor-rated creative performance ($\beta = .22$, $p < .01$). However, perceived organizational support for creativity and an innovative cognitive style remained significant predic-

tors of supervisor-rated creative performance ($\beta = .09$, $p < .05$, for perceived organizational support for creativity, and $\beta = .192$, $p < .01$, for an innovative style), thereby excluding full mediation (Baron & Kenny, 1986). Given that the mediation test we performed is a conservative one for assessing mediational effects (MacKinnon, Lockwood, Hoffmann, West, & Sheets, 2002), we also tested whether the indirect paths from our independent variables (via breadth of seeking) to supervisor-rated creative performance were significant using the Preacher-Hayes (2008) bootstrapping procedure. In support of Hypothesis 5c, these tests showed that the indirect paths from perceived organizational support for creativity (via breadth) and from an innovative style (via breadth) were significant (indirect path = $.03$, $p < .05$, for perceived organizational support for creativity, and $.02$, $p < .05$, for innovative style). These analyses provide support for an indirect impact of our independent variables on supervisor-rated creative performance via the breadth of feedback seeking (Hypothesis 5b).

As stated, for monitoring, respondents did not differentiate among the various feedback sources. Given this finding, we did not test our breadth hypothesis for monitoring, thereby disconfirming Hypotheses 2b and 5d.

In sum, the results of our regressions and SEM analyses show that an innovative cognitive style and perceived organizational support for creativity enhance creative performance and that the frequency and breadth of individuals' feedback inquiry partially mediate this relationship. Monitoring for feedback was also positively associated with our independent variables but did not predict creative performance at a statistically significant level.

DISCUSSION

This study highlights a new avenue for enhancing employees' creative performance. In addition to selecting employees with sensitivity to their innovative cognitive styles (Foxall, 1990) and building contexts that support an appropriate style of creativity, managers can also work to promote individuals' independent self-regulation and self-enhancement of their own work to promote creative performance. Our results suggest that proactive self-regulatory behaviors, at least in the form of feedback seeking about job performance via inquiry, play a role in achieving creative outcomes. They partially mediate effects of cognitive style and perceived organizational support for creativity on creative performance.

Our findings extend previous research in at least three ways. First, the results of this study directly support recent arguments for greater attention to employee proactivity and self-starting behavior at work (Grant & Ashford, 2008). Traditionally, the creativity literature has focused on how managers can foster and stimulate creative performance by, for example, setting explicit goals for creativity and providing developmental feedback to employees. These suggestions implicitly portray employees as relatively reactive agents in the creative process who need to be motivated and led by others. This view fails to recognize the self-regulating potential of employees. Rather than portraying creativity as organizationally driven, the results of this study show that employees can actively stimulate their creative performance by soliciting feedback on their work and performance frequently and from a wide variety of sources. This finding supports our theoretical position that diversifying input and information about one's work produces more creative performance.

Second, our study adds to the creativity literature by testing a model that examines how dispositional, contextual, and behavioral factors simultaneously contribute to creative performance. Taking a process focus on creative performance, we found that feedback-seeking behavior is a relevant intervening variable in the relationships among employee cognitive style, perceived organizational support for creativity, and creative performance. Whereas prior work has demonstrated the direct impact of these factors on creative performance (Baer et al., 2003; Oldham & Cummings, 1996; Tierney & Farmer, 2002), our study is one of the first to identify a behavioral mechanism through which these factors impact it. It is possible that feedback seeking is one of a more general set of creativity-relevant skills and strategies that increase creative performance. This possibility suggests that in addition to selecting employees with creative personalities and building a context that supports creativity, organizations and individuals can also build self-regulation skills to enhance the creative process, and organizations can encourage employees to seek feedback on their performance more often and more broadly. In addition to feedback seeking, future research might explore strategies such as self-set goals (Lee, Locke, & Latham, 1989), mindfulness (Langer, 1989), motivation maintenance (Grant, Campbell, Chen, Cottone, Lapedis, & Lee, 2007), and self-reward and punishment (Kanfer & Karoly, 1972). This examination of individual behaviors supplements a robust literature on person and context predictors of creative performance.

Finally, our results highlight a different conceptualization of the role of feedback and feedback

seeking in producing outcomes. Feedback seeking has traditionally been depicted as a strategy that helps individuals to conform to the requirements of their environment in a process of individual adjustment (Ashford et al., 2003; Ashford & Taylor, 1990; Parker & Collins, 2010). By relating creativity-relevant individual traits and context factors to feedback-seeking behavior and by linking individuals' overall propensity to inquire for feedback from various sources to creative performance, our study results highlight that feedback seeking is an individual resource that can help individuals to achieve a variety of outcomes, including creative responses that may deviate from (rather than adapt to) their environment in positive ways. Such an extension of the scope of feedback seeking research is suggestive of potential new research emphases in the feedback seeking literature based on recent research in positive psychology. As Ashford et al. (2003) noted, this perspective motivates a shift from fitting in to excelling and achieving distinction in organizations—from adaptation to a setting to individual agency, growth, and creation within it.

Our failure to find a statistically significant relationship between feedback monitoring and creative performance was surprising. This finding may be a function of the rather general items used in the monitoring scale. Alternatively, it may reflect the more ambiguous nature of the feedback obtained via monitoring. As a feedback-seeking strategy, monitoring may yield messages that are at best subtle, fleeting, ambiguous, and open to interpretation. Thus, performers who are monitoring for feedback may miss many cues representing others' views of their performance. Failing to pick up on these cues results in the performers missing out on the divergent viewpoints that we and others (Cohen & Levinthal, 1990; Perry-Smith, 2006) propose as a valuable stimulus to creative performance. An alternative explanation that might be explored in future research is that monitoring may actually create more conformity and less creativity than inquiry. Inquiry involves an explicit, volitional act. As such, it may be undertaken more frequently by individuals who are generally proactive, goal directed, and interested in regulating their own performance (Grant & Ashford, 2008). Monitoring, on the other hand, may involve a more generalized tendency to notice others' opinions and to conform to them—a tendency about which a performer may not even be fully conscious (Ashford et al., 2003). Our pattern of findings is somewhat consistent with this possibility. The coefficient for innovative cognitive style and monitoring was .27, but that for innovative cognitive style and inquiry was much stronger (.46). It may be that inquiry gives more

explicit, but still personal, data from which a feedback seeker might work to craft a creative response. Frequent monitoring might reflect more of an unconscious tendency to play it safe and be vigilant about others' views in order to conform. This idea is speculation based on our pattern of findings. Future study is needed. Although the feedback seeking literature to date has shown little empirical evidence of differential predictors of inquiry versus monitoring (Ashford et al., 2003), it may be that these strategies have different effects, with feedback obtained by inquiry stimulating creativity and feedback obtained by monitoring not doing so.

Practical Implications

Our study echoes recent suggestions that organizations interested in enhancing employees' creative performance might profitably focus on developing work contexts that support it. As Shalley (2008) discussed, such contexts may be developed by setting creativity goals, making creativity a job requirement, providing feedback, and building reward systems that value employee creativity. Our study suggests that supportive contexts should also stimulate employees to inquire for feedback about their work more frequently. To stimulate feedback-seeking behavior and enhance employees' creative performance, organizations need to take steps to reduce or eliminate some of the documented image concerns associated with inquiring for feedback (Ashford, 1986), perhaps by developing a general "feedback climate" (Steelman, Levy, & Snell, 2004) that supports the spontaneous exchange of informal feedback throughout an organization. This suggestion is consistent with Yuan and Woodman's (2010) empirical findings in the innovation area showing that context factors that reduced image risk promoted innovation.

Our results also suggest that if creative performance is an organization's goal, there is value in stimulating employees to seek feedback beyond the traditional source, their supervisor, and to consider peers and even extraorganizational sources. Organizations may develop contexts that support creativity by encouraging their employees to broaden their developmental networks and seek feedback from multiple sources, rather than limit themselves to supervisor-delivered feedback. Stimulating employees to participate in learning communities that span organizational boundaries may particularly facilitate the exchange of valuable feedback from outside, and thus creativity (Nonaka, 1994; Raelin, 1997).

From an individual perspective, our results highlight that individuals interested in achieving creative outcomes in their work may do so by seeking

feedback more frequently and from a wide variety of feedback sources. For individuals, such seeking may have a dual benefit: it not only helps them to refine their ideas and to obtain relevant new input, but may also be a way of promoting these ideas and making them visible to others (Ashford et al., 2003; Morrison & Bies, 1991).

Limitations

These results need to be considered in light of several study limitations. First, all data were collected cross-sectionally with a survey methodology, so common method biases may have confounded our results and may limit the confidence with which we can draw conclusions about causality (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, as we collected measures of our predictor and outcome variables from different sources, the effects of consistency motifs, implicit theories, and social desirability bias are somewhat reduced (Podsakoff et al., 2003). Our methodology also leaves open the possibility that the effects found were spurious. To reduce the likelihood of this issue, we followed the advice of Rogelberg (2002) and based our model on explicit theory in the feedback seeking and creativity literatures. Second, we also incorporated a number of control variables to reduce the likelihood of spurious effects. Despite these steps, however, the possibility of spurious effects cannot be completely ruled out. Models tested over time are needed.

Second, in testing Hypotheses 1a, 1b, 2a, and 2b, which were derived from Kirton's (1994) adaption-innovation theory, we were not able to use the KAI inventory fully. Future research using the full KAI instrument is needed to confirm and extend the results found in the present study. However, scale validation work undertaken by Bagozzi and Foxall (1995) did provide evidence of the construct validity of the 15-item scale we used.

Third, reflecting our research question, our measures asked generally about feedback-seeking behaviors regarding performance using measures established in previous research. The measure for monitoring may have been too general. Although we suggested some possible theoretical explanations, the generality of these items also may account for the lack of findings tying monitoring to creative performance. Future research using a different measure might assess this possibility. Our measures did, however, make one possible confound less likely in our research. That is, because we measured feedback seeking about job performance generally, we reduced the likelihood of impression management as an alternative explanation

for our results. If individuals explicitly ask their bosses, for example, "How creative do you think I am?" they may be truly interested, or they may be attempting to influence or manage their boss' impressions of them as creative people. Our measure makes this alternative explanation for results less likely.

Finally, this study used a sample from a single industry and a single type of job, consulting, for which creative performance wasn't an explicit job demand (as it would be in a job explicitly requiring creating something new, such as a web design or a writing). This sample was the perfect one in which to test our ideas about whether seeking feedback on job performance generally prompted greater creativity. For jobs in which creative performance is an explicit job requirement, researchers could measure individuals' explicit attempts to seek feedback about their creativity. Future research might test whether our findings generalize to different types of knowledge or creative workers in different industries.

Avenues for Future Research

This research suggests several possibilities for future or empirical study. First, we introduced feedback-seeking behavior as a possible additional mechanism explaining the effects of individual differences and context factors on creative performance. Although its role as a mediator of these effects was established only for the frequency of inquiry, both feedback-seeking frequency and breadth were related to creative performance. These findings suggest that researchers should continue study of both the behaviors and attributes of employees, such as their intrinsic motivation or personality factors, as causes of their creative performance. For guidance regarding additional behaviors to examine, one might draw on work by VandeWalle and colleagues (1999), who found that goal setting, effort, and planning were important self-regulation tactics for sales performance, or on work by Porath and Bateman (2006), who identified proactive behavior, emotional control, and social competence as key self-regulatory skills for employees. The role of these behaviors in enhancing creative performance is as yet unexplored. Also, even though this study contributes to a literature that is establishing additional mediators for the effects of person and context variables on creative performance (e.g., Gong et al., 2009), this literature has not yet assessed the unique explanatory power relative to previous explanations including intrinsic motivation. Future research should examine models comparing various mediators by combining behaviors individuals undertake to enhance their creative performance with individual factors such

as intrinsic motivation and other contextual factors to assess the role of behaviors relative to traits and context variables more generally.

Second, research that broadens our examination of feedback information and feedback seeking in two ways would be valuable. First, it's important to explore how the seeking of various types of information affects the creative process. Employees seek not only information about how they are performing, but other types of information as well, such as task information about the technical aspects of their jobs, information about their roles in their organizations, social information about how to behave, and organizational information about procedures and policies (Morrison & Vancouver, 2000). Future research should explore whether and how these types of information seeking may be of value to employees' creative performance. Second, it would be valuable to theorize about and assess the mediating processes by which information and feedback seeking enhance creative performance. For example, getting more information and/or feedback may give performers ideas that they didn't have previously or more confidence about raising their ideas in the workplace and incorporating them into their performance. Given the perceptual measure of creative performance used in this and most research on creative performance, variables influencing not only people's ideas, but also their willingness to speak up about them, become important.

Third, future research should also assess how individuals' propensity to inquire for feedback broadly from different sources affects outcome variables other than creative performance. It may be that employees' general tendency to seek feedback broadly from various sources and the impact of such breadth differ depending on the outcome under investigation. For example, when employees use feedback seeking as a strategy to mold themselves to the prevailing view of what constitutes acceptable or successful behavior in their immediate work context, they may be better off limiting themselves to seeking feedback from sources who endorse prevalent standards (e.g., their supervisor). Seeking feedback from a wider variety of sources (e.g., peers in other organizations) may even have disruptive effects, because these sources might provide the seeker with ideas that are considered deviant and inappropriate in their own work context. Thus, although our results highlight that individuals may achieve higher levels of creative performance with broad seeking, its effects may take on a different pattern depending on the outcome under investigation.

Finally, if we move away from studying creative performance (a general tendency to introduce cre-

ative ideas in one's job) toward the study of jobs that are explicitly about creation, then issues of the timing of various individual actions related to creative performance become important. For example, at some stages in the creative process feedback may destroy or diminish creativity, and feedback seeking should not be undertaken. Specifically, feedback seeking may be crucial in an idea generation phase to help employees refine their ideas, but it may become detrimental in the idea promotion phase (when employees sell their ideas to internal or external sponsors). As De Stobbeleir and Declippeleer (2010) suggested, in this later stage, employees need to be persistent in sticking to their ideas to get the ideas sold. Feedback monitoring and inquiry may also play differing roles at different stages in the creative process. When an idea is still premature, employees may monitor their environment for indirect feedback cues to obtain an initial assessment of the viability of the idea. On the basis of this initial indirect feedback, they can then decide whether or not to pursue and refine the idea. When employees decide to further develop an idea, they may then decide to directly ask others for their feedback. Hence, rather than contributing directly to creative performance, monitoring may help individuals to channel their energy toward ideas that are worth pursuing. Testing this process view of the role of feedback at different stages in the creative process with longitudinal research designs and samples in which the creation of new ideas, products, and approaches is the explicit focus of jobs could help develop a more complete picture of the process.

Conclusions

Our study breaks new ground in the creativity literature by highlighting individuals' proactive role in enhancing their creative performance. The results indicate that individuals can enhance their own creative performance by actively seeking feedback on their work from various sources. Our findings highlight the importance of studying employees' self-regulatory behaviors in the creative process and support the proposition that feedback seeking is not only a strategy that facilitates individual adaptation, but also an individual resource that can help individuals to achieve creative outcomes.

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