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# Proactive Personality and Employee Creativity: The Effects of Job Creativity Requirement and Supervisor Support for Creativity

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This study examined the relationships between proactive personality and employee creativity and the moderating roles of job creativity requirement and supervisor support for creativity in activating proactive personality associated with employee creativity. To provide a rigorous test of the hypotheses, we conducted a field study from a sample of 157 employee-supervisor pairs in South Korea. The results revealed that a proactive personality was positively associated with employee creativity. In addition, job creativity requirement and supervisor support for creativity jointly influenced the relationship between proactive personality and employee creativity. Specifically, proactive employees exhibited the highest employee creativity when job creativity requirement and supervisor support for creativity were both high.

Employee creativity can help organizations gain competitive advantages for organizational innovation, survival, and long-term success (Amabile, 1997; George & Zhou, 2001; Oldham & Cummings, 1996; Runco, 2004; Scott & Bruce, 1994; Shalley, 1995; Woodman, Sawyer, & Griffin, 1993). Employee creativity refers to the creation of valuable, useful new products, services, ideas, procedures, or processes by individuals working together in a complex social system (Woodman et al., 1993). Research on creativity has concentrated on examining the antecedents of employee creativity in an organizational context. Specifically, researchers have found that employee creativity is influenced by personal characteristics such as creative personality (Oldham & Cummings, 1996; Zhou, 2003), and organizational context and job characteristics such as work environment

(Amabile, Coon, Lazenby, & Herron, 1996), job creativity requirement (Shalley, Gilson, & Blum, 2000), and leadership (Shin & Zhou, 2003).

Less research has focused on examining how proactive personality influences employee creativity. Theoretically, proactive individuals are more likely to display initiatives to change procedures in conducting jobs and organizational environment and thus tend to be creative (Seibert, Kraimer, & Crant, 2001). Despite its potential importance in creativity (e.g., Amabile et al., 1996; George & Zhou, 2001; Shalley, 1995; Woodman et al., 1993); it is interesting that only a few studies examined how proactive personality fostered employee creativity (Heinzen, 1999). One study that has investigated the linkage between proactive personality and creative behaviors is that of Seibert et al. (2001). Seibert et al. (2001) found that proactive personality was positively associated with an individual's innovation behaviors, such as developing new ideas and showing innovation in one's job.

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Although Seibert et al. (2001) established a general linkage between proactive personality and employee creativity, several important issues remain unaddressed. First, the creativity literature paid little attention to examining how situational factors influence the relationship between proactive personality and employee creativity (Zhou, 2003). According to the trait activation theory (Tett & Guterman, 2000), personal characteristics are contingent on situational cues such as job, social, and organizational characteristics for the performance of trait-related behaviors. In this study, we proposed that job creativity requirement and supervisor support for creativity interact with proactive personality to foster individual creativity for several reasons. First, previous research has shown that job creativity requirement (Gilson & Shalley, 2004; Shalley et al., 2000) and supervisor support for creativity (Amabile et al., 1996; Madjar, Oldham, & Pratt, 2002) significantly influence employee creativity. In addition, job creativity requirement and supervisor support for creativity may depend on each other in providing resources that proactive employees can utilize effectively in producing creative performance but that passive employees could not. For example, when the job creativity requirement was high but supervisor support for creativity was low, the trait-relevant situational cues cannot help proactive people to be creative because they were uncertain whether they will obtain support from their supervisors for their new ideas. On the other hand, when supervisor support for creativity was high but the job creativity requirement was low, proactive people will not actualize their traits to produce creative performance because creativity is not a single objective for them in the workplace. Thus, one goal of this article was to examine the three-way interaction effect of proactive personality, job creativity requirement, and supervisor support for creativity on employee creativity.

Second, little research has examined the influences of proactive personality on employee creativity outside the United States. Many multinational companies nowadays are relocating *knowledge-creating* jobs to Asian settings (Farmer, Tierney, & Kung-Mcintyre, 2003). In addition, to extend the global relevance of management theories (rather than being solely U.S.-based), thereby making these applicable in managing nationally diverse workforces more effectively (cf. Kim, Cable, & Kim, 2005; Kim & Leung, 2007), it was important to understand how a proactive personality affected employee creativity outside the United States, such as South Korean culture. For example, considerable evidence suggests that East Asian cultures are more team- rather than individual-oriented (Schwartz & Bardi, 2001; Triandis, 1995). Moreover, research has shown that in East Asian cultures such as South Korea, people place high emphasis on power distance, which

refers to the extent to which a society accepts the fact that power in institutions and organizations is distributed unequally (Hofstede, 2001; Kim, Wang, Kondo, & Kim, 2007). Accordingly, it is possible that in East Asia, the effects of individuals' proactive personality on employee creativity are overwhelmed by the impact of country culture that emphasizes collective and authority. Thus, another objective of this study was the cross-validation of the linkage between proactive personality and employee creativity, along with certain situational factors, in South Korea. In the following sections, we briefly reviewed how proactive personality affected employee creativity, then we discussed the effects of job creativity requirement and supervisor support for creativity on the linkage between proactive personality and employee creativity.

## THEORY AND HYPOTHESES

### Proactive Personality and Employee Creativity

Proactive personality was one personal characteristic that affected creativity. Proactive personality refers to individuals' disposition toward engaging in active role orientation, such as initiating change and influencing their environment (Bateman & Crant, 1993). Proactive people initiate changes, take action, and persevere until meaningful change occurs in the achievement of their goals, in contrast to passive people who just adapted to their undesirable circumstances (Crant, 2000). For example, Bateman and Crant noted that proactive people actively worked to manipulate their environment and seek out new information and practices in order to improve their performance. In a similar vein, Seibert et al. (2001) stated that proactive people attempted to promote their career prospect rather than passively reacted to the job situation as it was presented. They were also more likely to suggest new ways of doing tasks to achieve their goals and generated new ideas in order to improve performance in comparison to passive ones. In addition, proactive people are more likely to identify opportunities and act on them by exceeding normal job expectations (Seibert et al., 2001; Van Dyne & LePine, 1998). As a result, proactive individuals tended to actively engage in updating their knowledge and skills and identifying new work processes. The display of initiatives and surpassing normal job expectations, usually done by proactive people, appeared to have positive effects on creativity.

Although most of the empirical research on proactive personality has been conducted in the United States (Bateman & Crant, 1993; Seibert et al., 2001; Van Dyne & LePine, 1998), the logic behind the above argument may not be culture bound and thus should be

cross-validated across countries. For instance, Chan (2006) demonstrated in a Singaporean sample that a proactive personality was positively associated with attitudinal and behavior work outcomes, such as job satisfaction, organizational commitment, and job performance among individuals with high levels of situational judgment effectiveness. In addition, Kim, Hon, and Crant (2009) found that proactive personality was positively associated with employee creativity among Hong Kong Chinese employees. Extrapolating from this, we predicted that:

*Hypothesis 1: Proactive personality is positively associated with South Korean employees' creativity.*

### The Role of Situational Factors in Activating Proactive Personality

Under what circumstances will proactive employees be more likely creative? Based on the person-situation interactionist approach (e.g., Pervin, 1989; Schneider, 1987; Terborg, 1981), it has been said that individual and situational factors jointly influenced employee creativity. Woodman et al. (1993) theorized how personal and situational factors interacted to exert influence on creativity. Oldham and Cummings (1996) demonstrated the interaction of job complexity and creative personality as these influenced employees' creative performance. Subsequent research (Amabile et al., 1996; George & Zhou, 2001; Zhou, 2003; Zhou & George, 2001; Zhou & Oldham, 2001) has successfully established the person-situation model and provided an important empirical test of the interactive effects of personal factors and contextual factors on employee creativity.

These studies significantly contribute to increasing the understanding of how personal factors and contextual factors jointly influence creative performance in the workplace, but they paid little attention to the conditions under which creativity-relevant traits were more likely to be activated. Building on the person-situation interactionist approach (Pervin, 1989; Terborg, 1981), Tett and Guterman (2000) proposed the trait activation theory. The trait activation theory highlighted the importance of situational cues that activated personality traits in fostering trait-relevant behaviors. Organizations have a set of tasks and procedures purposefully implemented to encourage employees to engage in trait-relevant behaviors. These situational factors can either aid individuals or constrain them from performing their work (Tett & Burnett, 2003). According to the trait activation theory (Tett & Guterman, 2000), it is important for employees to consider multiple aspects of situations simultaneously in understanding their role for trait activation. Organizations often incorporated two or

more management practices (e.g., goal setting, task feedback, and compensation system) to assist employees in navigating trait-oriented behaviors. As an example, Zhou and George (2001) found that focusing on a single trait-relevant situational cue as moderator in response to personality trait expression may not be sufficient to foster individual creativity. Thus, considering two or more trait-relevant situational cues (e.g., job and social situational cues) can provide a precise understanding of the effects of these situational cues on trait activation in employee creativity.

### Job Creativity Requirement and Employee Creativity

One of the important trait-related situational factors that may enhance the relationship between proactive personality and creativity was job creativity requirement. Job creativity requirement was an aspect of job design that encourages task complexity, autonomy, and creativity, which was specifically defined as part of the job description (Gilson & Shalley, 2004; Unsworth, 2001). When creativity was an important component of the job, employees may generally try new approaches or create novel ideas towards accomplishing their job tasks. Consistent with this, Shalley and colleagues (2000) found that the job creativity requirement was positively associated with intrinsic motivation and creative performance. However, when faced with minimal cues concerning job tasks, people may rely on their own judgment to decide on the adequacy of their work effort, making these employees unsure as to whether creativity was important or not. Thus, the job creativity requirement served to set the organizational objective by which employees judge their progress in a task.

Job creativity requirement may also affect creativity jointly with an individual's characteristics. Because creativity involved taking risks, it was not easy for individuals to satisfy a high job creativity requirement (Zhou & George, 2001). Some employees may handle risks and difficulties more effortlessly than do others. For example, proactive people who were willing to take initiatives and change organizational environment easily adapted to a high job creativity requirement and thus produce highly creative performance. On the contrary, passive individuals who hesitate to engage in risks may have a difficult time working in an environment where they were required to suggest new ideas in order to change work procedures, policies, and the like.

Although proactive people appeared to have the potential to be creative when their job required high creativity, other contextual factors came into play in expressing individual creativity. As discussed previously, organizational situations, job characteristics, and personal characteristics may jointly affect organizational

and individual outcomes. As an example, George and Zhou (2001) found that employees exhibited the highest levels of creativity when they were greatly open to work on and experience heuristic complex tasks, as well as receive positive feedback from their supervisors. Similarly, Zhou and Oldham (2001) found that an organizational development strategy combined with a creativity personality can enhance employees' creative performance. In this study, we examine how supervisory support for creativity (Zhou & George, 2001) influences the relationships among proactive personality, job creativity requirement, and employee creativity. Below, we discuss how supervisory support for creativity can promote employee creativity among employees who possess proactive personalities and who were concomitantly required to be creative.

### Supervisor Support for Creativity and Employee Creativity

Supervisor support through encouragement further enhanced the interactive effect of proactive personality and job creativity requirement on creativity. Supervisor support for creativity refers to the extent to which a supervisor provides recognition, respect, and supportive behavior to his or her subordinates regarding creativity, such as providing creativity-relevant feedback and information (Madjar et al., 2002). When supervisors provide employees with creativity-relevant feedback and information, the employees may attempt to be creative because they perceive creativity to be valued and supported by their supervisor (cf. Amabile, 1997). As a result, high supervisor support for creativity combined with job creativity requirement can increase employees' attention to creativity because, in these situations, the potential risk associated with creativity was minimized, and creative ideas were perceived to be effective. The latter pattern becomes more pronounced among proactive people because creative job requirement and supervisory support for creativity are appropriate for proactive persons. Organizations that emphasized creativity as a core value by requiring high job creativity and providing support for creativity were highly compatible with proactive persons who tended to achieve creative activities. In support of this, Erdogan and Bauer (2005) revealed that proactive people became more satisfied with their jobs and career when their proactive tendencies were congruent to their job characteristics and work environment.

On the contrary, if supervisors failed to provide support for creativity, this may signal that the potential risk associated with creative performance was not important and that the effectiveness of new ideas was perceived to be low. With these conflicting emphases between high job requirement and low supervisory

practices, employees will desist taking risks in challenging current management practices due to the subsequent risk associated with creativity. Proactive people may be apprehensive that their proactive roles towards improvements on the job will not be valued (e.g., the changes they initiate may not be acceptable or their efforts were less likely to be appreciated by their supervisors), which may even be a deterrent to their career advancement (Seibert et al., 2001). Hence, the role of proactive personality on creativity was minimized. On the other hand, when the job required low creativity, regardless of the levels of supervisory support for creativity, proactive (as opposed to passive) employees will be highly creative because they tended to exceed normal job expectations in order to achieve their goals. Taken together, we hypothesized the following:

*Hypothesis 2:* Proactive personality, the job creativity requirement, and supervisor support for creativity interactively affect creativity. Specifically, proactive employees exhibit greater creativity when the job creativity requirements and supervisor support for creativity are concomitantly high compared to when the job creativity requirements and supervisor support for creativity are concurrently low, or when the job creativity requirement is low and supervisor support for creativity is high. However, when the job requires high creativity and supervisor support for creativity low, the relationship between proactive personality and creativity is low.

## METHOD

### Sample and Procedure

Data were collected from the employees of research and development (R&D) teams in various organizations in South Korea. The organizations included six manufacturing companies, three software developing companies, three pharmaceutical companies, and two construction companies. We obtained the participation of the organizations based on a list of companies in cooperation with one of our coauthor's university. The third author contacted the top management of each of the organizations, and they subsequently agreed to participate in the study under the condition of obtaining copies of the results. The R&D manager of each company compiled lists of the employees and their immediate supervisors. According to the final list of dyads, there were a total of 238 employee-supervisor pairs in the target organizations, all of whom were invited to participate in the study. The participating employees and their supervisors completed a questionnaire at the workplace during company time. The subordinates reported their proactive personality, while the supervisors reported their subordinates' individual creativity as well as assessed the extent to



which the jobs require creativity and the extent to which they provide support for creativity. The surveys were translated according to Brislin's (1986) back-translation procedure.

A total of 157 completed employee-supervisor pair questionnaires were returned (66% response rate, ranging from 65% to 92% by organization). Thirty-one percent of the employees were female. The employees' average age was 34.4 years ( $SD = 6.4$ ), the average job tenure was 7.6 years ( $SD = 6.1$ ), and the average number of employees per organization was 3618.9 persons ( $SD = 846.2$ ). For the supervisors, 11% were female, the average age was 44.7 years ( $SD = 4.8$ ), and the average working experience was 20.1 years ( $SD = 5.9$ ).

## Measures

All the variables in this study were assessed on a seven-point Likert scale (1 = *strongly disagree* and 7 = *strongly agree*).

**Proactive personality.** We applied Seibert, Crant, and Kraimer's (1999) 10-item scale of proactive personality to measure proactive personality at time 1. Sample items included "I am constantly on the lookout for new ways to improve my life," "I can spot a good opportunity long before others can," and "If I see something I don't like, I fix it."

**Job creativity requirement.** The job creativity requirement was measured using Gilson and Shalley's (2004) four items. The supervisors were asked to assess the team's job creativity requirement based on the following items: "My team is required to be creative," "The nature of the projects that my teams works on requires us to be creative," "My team is required to come up with novel ways of doing things," and "In order for my team to perform successfully, we have to think of original or different ways of doing things."

**Supervisor support for creativity.** We adopted Madjar et al.'s (2002) 4-item scale to measure this factor at time 2. Sample items included "My supervisor gives me useful feedback about my ideas concerning the workplace," and "My supervisor is always ready to support me if I introduce an unpopular idea or solution at work."

**Employee creativity.** We measured creativity using Zhou and George's (2001) 13-item scale at time 2. Sample items included "Suggests new ways to achieve goals or objectives" and "Comes up with new and practical ideas to improve performance."

**Control variables.** We controlled for age and gender consistent with previous research (e.g., George & Zhou, 2007; Madjar et al., 2002). Age was measured by number of years.

## RESULTS

Descriptive statistics, reliability estimates, and the correlations for all measures were reported in Table 1. Consistent with Study 1, proactive personality, job creativity requirement, and supervisor support for creativity were significantly correlated with employee creativity ( $r = .20, p < .05$ ;  $r = .27, p < .01$ ;  $r = .17, p < .05$ , respectively).

We used hierarchical multiple regression analyses to test our hypotheses. First, to test the direct relationship between proactive personality and creativity (Hypothesis 1), we entered proactive personality in Step 2 after taking the control variables into account, as shown in Table 2. Table 2 shows that Hypothesis 1 was supported in that proactive personality was positively and significantly related to South Korean employees' creativity ( $\beta = .19, p < .05, d = .38$ ).

To test the three-way interaction effects of job creativity requirement and supervisor support for creativity,

TABLE 1  
Means, Standard Deviations, and Correlations Among Study Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Proactive personality	4.55	.67	(.88)						
2. Job creativity requirement	5.32	1.02	.16*	(.86)					
3. Supervisor support for creativity	5.57	.56	-.03	.18*	(.72)				
4. Employee creativity	4.82	.97	.20	.27**	.17*	(.97)			
<i>Control variables</i>									
5. Age	34.59	6.42	.08	.04	.00	.13	—		
6. Gender <sup>a</sup>	.31	.47	-.30**	-.18**	.25	-.10	-.15	—	
7. Education	2.97	.77	.14	.03	.04	-.04	-.12		—

Note. ( $N = 157$ ). Reliabilities are in parentheses. \* $p < .05$ . \*\* $p < .01$ .

<sup>a</sup>Males were coded as 0 and females were coded as 1.

TABLE 2

Results of Hierarchical Regression Analysis for the Three-Way Interaction Effects on Employee Creativity in South Korean Sample

	$\beta$	Total $R^2$	$\Delta R^2$
Step 1. Control variables			
Age	.11		
Gender	-.09		
Education levels	-.03	.02	.02
Step 2			
Proactive personality (Personality)	.19*	.06	>.03*
Step 3			
Job creativity requirement (Job)	.21*		
Supervisor support for creativity (Supervisor)	.15		
Personality $\times$ Job	.08		
Personality $\times$ Supervisor	.03		
Job $\times$ Supervisor	-.02	.14**	.08*
Step 4			
Personality $\times$ Job $\times$ Supervisor	.23**	.18**	.04**

Note. ( $N = 157$ ). \* $p < .05$ . \*\* $p < .01$ .

the proactive personality, job creativity requirement, and supervisor support for creativity scales were centered at their respective means before computing for the interactions or conducting analyses (Aiken & West, 1991). To examine any significant interaction effects more closely, we plotted the simple slopes of proactive personality-creativity regression at one standard deviation below the mean and one standard deviation above the mean of the job creativity requirement and supervisor support for creativity, and then tested whether each slope was significant (Aiken & West, 1991).

Table 2 exhibits the three-way interaction term among job creativity requirement, supervisor support for creativity, and proactive personality as significant ( $\beta = .23$ ,  $p < .01$ ,  $d = .44$ ). Tests of simple slopes indicated that the positive relationship between proactive personality and creativity was significant when the job

creativity requirement and supervisor support for creativity were both high (simple slope = .66,  $p < .01$ ), and it was even stronger than when both were low (simple slopes = .46,  $p < .01$ ). However, when the job creativity requirement was high and supervisor support for creativity was low and when the job creativity requirement was low and supervisor support for creativity was high, the relationship between proactive personality and creativity was negative and statistically significant (simple slopes =  $-.45$ ,  $p < .01$ ;  $-.16$ , *ns*, respectively). These slopes are displayed in Figure 1. The results suggest that proactive employees exhibit the greatest creativity when the job creativity requirement and supervisor support are both high. Thus, Hypothesis 2 was supported.

## DISCUSSION

Prior studies (e.g., Crant, 1996; Seibert et al., 2001) have emphasized the important role of proactive personality in employee creativity. In addition, according to the interactionist perspective and trait activation theory (Schneider, 1987; Tett & Guterman, 2000), it was important to examine the role of situational factors in facilitating the activation of individual trait in order to foster employee creativity. However, to date, relatively few studies have examined these relationships.

Given the scarcity of research on proactive personality and creativity, one important result from this investigation was a pronouncement of the positive linkage between proactive personality and creativity by means of using a sample from Asian context. The results revealed that proactive personality was an important personal disposition that was expressed to enhance creativity at work as a response to trait-related cues. This was in line with previous studies indicating that people

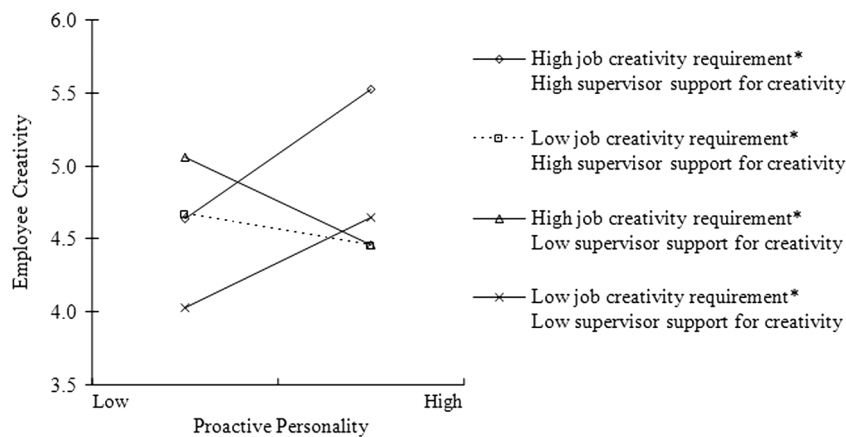


FIGURE 1 Job creativity requirement and supervisor support for creativity on employee creativity at different levels of proactive personality in South Korean sample.

with a highly proactive personality were relatively unconstrained by situational forces and effected environmental changes by scanning for opportunities, showing initiative, and taking action to bring about changes (Bateman & Crant, 1993; Crant, 1996). In general, employees who were assumed to be differentially predisposed to behave proactively towards their situations produced higher creativity, compared to other employees who were not proactive. These results supported Bateman and Crant's (1993) argument that proactive persons were pathfinders who change their organizations' mission and scan for opportunities, exhibit initiative, and involve themselves in solving problems. The validity of this finding was even stronger since the positive relationship was reported using different sources for proactive personality and employee creativity (i.e., subordinate-assessed proactive personality and supervisor-assessed employee creativity). Moreover, our findings suggest that Seibert et al.'s (2001) results generalized to cultures outside of the United States. Specifically, our replication occurred in an international context where the country's prevailing social norms and expectations for proactivity were quite different from Seibert et al.'s (2001) investigation of U.S. organizations.

In addition to the positive linkage between proactive personality and creativity, the most important implication of our findings was that personality did not entirely determine individual creativity, but trait-relevant situational factors also play an important role in accordance with the trait activation theory (Tett & Guterman, 2000). The results of this study suggested that several situational cues such as job creativity requirement and supervisor support for creativity interactively facilitate proactive people to initiate creative activities. In realizing that work context did not implement a single management practice, this study proposed that situational factors in terms of job creativity requirement and supervisor support for creativity should be considered concurrently. The findings of this study reconciled the three-way hypothesis on the basis of multiple aspects of the situational cues model that have been evident. Specifically, we found that proactive persons exhibited maximum creativity when the job requires high creativity and when the supervisor provided helpful and supportive behavior. In general, these findings contributed to a developing research literature that presents the important interactive role between individuals and situational factors in producing creativity (George & Zhou, 2001; Madjar et al., 2002; Oldham & Cummings, 1996). These results were also important in developing and refining a trait activation process concerning the expression of creativity by proactive persons in their jobs. Future research may also benefit from examining whether other situational factors, such

as organizational structures, coworker behaviors, and empowerment climate, can activate a proactive personality to influence employee creativity.

Although results were generally consistent with expectation, some findings regarding the three-way interaction pattern needed discussion. For example, the relationship between proactive personality and employee creativity was negative when the job creativity requirement was high and supervisor support for creativity was low or when the job creativity requirement was low and supervisor support for creativity was high. These results suggested that proactive (rather than passive) individuals produced low employee creativity when the job creativity requirement and supervisors supported for creativity did not match. In South Korea, subordinates and supervisors expect reciprocal caring and expressions of loyalty and support (Kim & Leung, 2007; Scarborough, 1998). As a result, when there is low support for creativity from their supervisors, South Koreans may be discouraged to activate their proactive personality to produce creative outcomes. In addition, South Koreans have a faith in the fundamental connectedness of human beings to each other and recognize that one's thoughts, feelings, and behaviors are contingent on what others think and feel, and how they behave (Markus & Kitayama, 1991). As a result, when supervisors and team members sent the opposite signals for creativity, employees who proactively behave may be seen as trouble makers who caused conflict or stress with their supervisors or team members and, as a result may not be seen as being creative employees (cf. Janssen, 2003).

These interactive findings also have some practical implications for organizations. For example, organizations that aspired to foster a creative and innovative organizational culture may become more successful if they employed individuals who possess a highly proactive personality and if they constructed job descriptions that required high creativity. However, if a supervisor did not provide support for creativity, a high job creativity requirement may be detrimental to people with a highly proactive personality because it may constrain their motivation to be proactive. Thus, to build supervisory and organizational practices and to create a climate that supports creativity may be particularly important in this case. Furthermore, organizations should empower proactive people to maximize their proactive tendency in order to further increase their creativity.

This study has some limitations that must be taken into account. For example, data in this study were collected at a single point in time, raising questions about the direction of causality. Predictions were based on the logic that proactive personality and organizational situations influenced employee creativity, but we cannot rule out the possibility that employees who procedured



high creative outcomes can be more proactive in their behaviors. Longitudinal data collection or experimental design was necessary for a rigorous test of causal directionality.

Second, the effect size for the three-way interaction effect was relatively small (i.e.,  $\Delta R^2 = .04$ ,  $d = .44$ ). Although it was not much smaller than prior studies for a three-way interaction effect in creativity research whose effect size ( $\Delta R^2$ ) were generally below .04 (e.g., George & Zhou, 2001; Shalley, 1991; Zhou & George, 2001), future research needs to replicate our findings in different settings. Related to this, one may question whether our theory and findings can be generalized to other cultural settings or other contexts. Although our findings were based on South Korean sample, we have no strong reason to expect different results if the research had been conducted in the West for the significant main and three-way interaction. Research has shown remarkably that proactive personality and creativity theory were applicable across cultures, including Hong Kong, Singapore, and South Korea (cf. Chan, 2006; Kim et al., 2009; Shin & Zhou, 2003). However, as discussed above, the specific patterns of the three-way interaction may be culture bound. Thus, future research needs to replicate our theory and findings using samples from other national cultures.

A third potential problem is that respondents may have differed significantly from nonrespondents, and the anonymous nature of our surveys made it impossible to conduct a response–nonresponse analysis. However, given that our response rate was reasonably high (i.e., 66% is consistent with or higher than other studies of creativity), the data should not have a particularly serious problem in this regard.

Finally, we focused on only job creativity requirement and supervisor support for creativity as contextual variables that can activate proactive personality associated with employee creativity, but other situational variables also need to be examined. For example, organizational reward for creativity that can increase creativity (Eisenberger & Rhoades, 2001) may influence activating proactive personality associated with employee creativity. Proactive employees may be more encouraged to engage in creative behaviors when organizations provided rewards for creativity. Other contextual variables or situational cues such as organizational culture (Koberg & Chusmir, 1987) and leadership styles (Mumford & Licuanan, 2004) would provide insightful findings in future direction.

The limitations of this study were countered by several important strengths. First, this study contributes to creativity literature by examining situational cues that can activate proactive personality associated with employee creativity based on the trait activation theory (Tett & Guterman, 2000). Moreover, it was beneficial to

replicate the effects of proactive personality on employee creativity outside the United States (i.e., South Korea).

Second, we reduced the possibility of common method bias by collecting data from two sources: employees and their immediate supervisors. Supervisors reported team's creativity requirement on work and employees' creative behaviors; employees reported their proactive personality and supervisor support for creativity. Although the results from these data were probably conservative because supervisors could not observe all of employees' creative behaviors, the results were considerably more convincing than if all data came from employees themselves. Accordingly, concerns of response biases and self-generated validity were mitigated in this study.

In addition, the results from this study were based on the data from 14 different firms across four industries. This sample diversity increases our confidence that the results were not simply based on the idiosyncratic characteristics from a single firm or on the specific expectations of entry into a particular industry (Kim et al., 2005). Thus, the characteristics of our sample increased the confidence of the results, and these results can be generalized in Asian context.

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