

EMPLOYEE CREATIVITY IN TAIWAN: AN APPLICATION OF ROLE IDENTITY THEORY

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This study tests a model of creative role identity for a sample of Taiwanese employees. Results showed creative role identity was predicted by perceived coworker creativity expectations, self-views of creative behaviors, and high levels of exposure to U.S. culture. Creativity was highest when a strong creative role identity was paired with perceptions that the employing organization valued creative work. Implications for managers and future creativity research are discussed.

[A] sense of identity is the root by which all honest creative effort is fed.

J. Saunders Redding, from his address
at the First Conference of Negro Writers

The preceding passage highlights a potentially powerful antecedent of workplace creativity: self-identification as a creative person. How we see ourselves—who we think we are—has a great deal to do with how we act. Although it is known that creative individuals possess strong self-images of being creative (e.g., Barron & Harrington, 1981), the relationship between self-concept and creativity is far from clear (Dowd, 1989). To date, there have been few, if any, attempts to examine how self-identity relates to workplace creativity. The self-concept of role identity (Burke, 1991; Stryker, 1980) may hold particular relevance for understanding how an employee develops a sense of self relative to creativity, and how this identity relates to creative action (Petkus, 1996). A role identity is a self-view, or a meaning attributed to oneself in relation to a specific role (Burke & Tully, 1977), that is generated reflexively through perceived appearance to self or others, self-judgment of that appearance, and affect based on that judgment (McCall & Simmons, 1978). As a specific role becomes closely

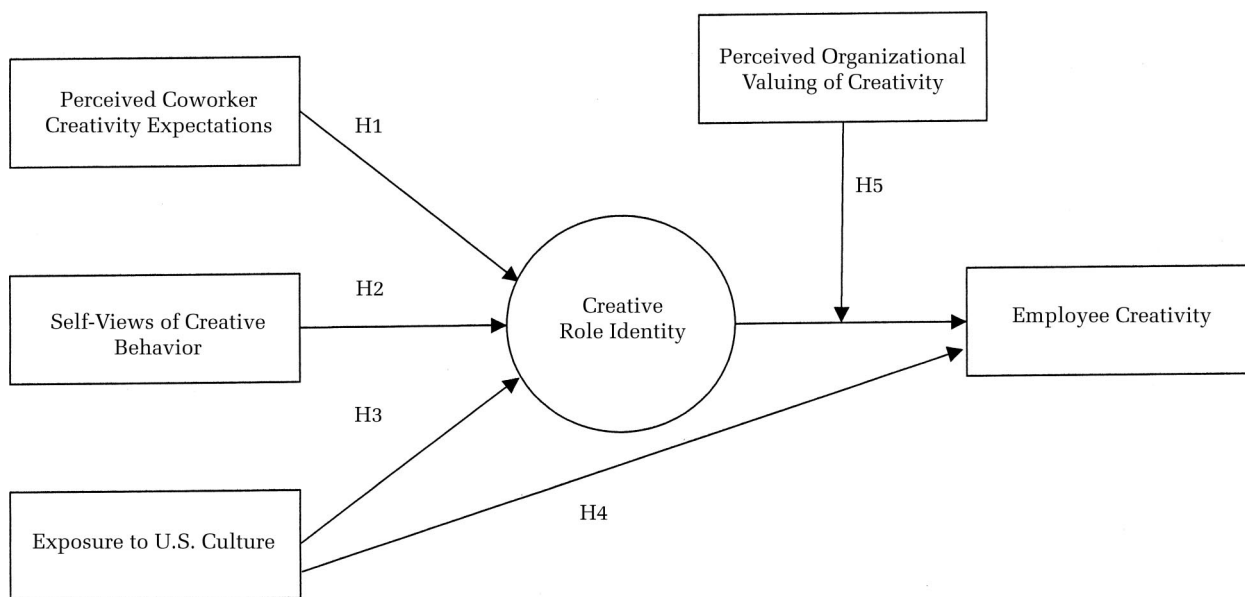
tied to an individual's sense of self or identity, the individual tends to behave in accordance with this role identity (Callero, Howard, & Piliavin, 1987) in order to gain verification of the identity (Petkus, 1996).

The overall goal of the current study was to examine identity and creative action in the workplace by integrating role identity theory (Burke, 1991; Stryker, 1980, 1987) with theory on organizational creativity (e.g., Amabile, 1988; Ford, 1996; Woodman, Sawyer, & Griffin, 1993). For our purposes, we propose a model of creative role identity that focuses on two key issues. Figure 1 presents this model. The first focal issue is the factors associated with possession of a role identity specific to creativity. The second issue is the relationship between that creative identity and employee creative performance. Our integrated model provides a basis for identifying antecedents of creative role identity and also for understanding how it plays out in an organizational context in terms of employee creativity.

This study stands to make a number of potential contributions. First, we introduce a self-concept attribute tied to an employee's sense of identity and creative action. By focusing on role identity, we address the gap in the literature concerning the relationship between self-image and creativity using a well-elaborated self-construct that has been extensively tested in various research fields (e.g., Piliavin & Callero, 1991). Second, conceptual models (e.g., Amabile, 1988) have noted the relevance of social context for employee creativity. The current study's application of role identity theory may shed light on the mechanisms by which a social

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FIGURE 1
A Theoretical Framework for Creative Role Identity



milieu creates a foundation for creativity via self-image. Third, because role identities tend to manifest themselves in concert with setting (Burke & Tully, 1977), study findings here could complement and augment existing interactionist models that pose employee creativity as a complex product of personal attributes, behavior, and situation (e.g., Amabile, 1988; Woodman et al., 1993). A fourth contribution is that, consistent with role identity theory, the study explores the “sense making” inherent in developing a creative role identity and how the interpretation of organizational action influences the enactment of this sense of identity. Although sense making is an important component of an employee’s decision to try to be creative, the topic has received relatively little research attention (Drazin, Glynn, & Kazanjian, 1999; Ford, 1996).

In their introduction to a collection of work on innovation, Drazin and Schoonhoven (1996: 1081) encouraged inquiry relevant to innovation “among organizations in emerging economies,” noting the importance of Asian settings. Studies examining employee creativity in non-U.S. work settings are rare (but see Madjar, Oldham, & Pratt, 2002). Asia has an expanding role in the global economy, and multinational companies are increasingly moving “knowledge-creating” jobs to Asian settings (Bartlett & Ghoshal, 1989). Thus, investigation of employee creativity in Taiwan is important. Since ascribed roles and corresponding actions are central aspects of the social fabric of Taiwanese culture (Liu, 1986), a role identity framework holds poten-

tial for understanding employee creative behavior in that cultural setting. Thus, our study’s final contribution is its exploration of role identity processes among Taiwanese employees operating in their native land as they relate to the creativity stage of the innovation process.

THEORY AND HYPOTHESES

Definitional Issues

Although it is a common notion that creativity is discouraged among the Chinese and that it is incremental by U.S. standards, Chinese societies actually strongly value creative action that is useful and practical (Gardner, 1989). As is the case in any cultural setting (Csikmentihalyi, 1999), what is considered novel in Chinese settings is in large part culturally defined and domain-defined. However, Li and Gardner offered a Chinese definition of creativity as “the solution of problems and products in a way that is initially original but is ultimately accepted in one or more cultural settings” (1993: 94) that parallels a commonly accepted Western definition of creativity as the production of novel and useful ideas for processes and products (cf. Amabile, 1988) that are accepted within relevant domains (Ford, 1996). The core concept of new and practical ideas is paramount and common to creativity as it has been defined in both East and West, and so novelty and usefulness of ideas is at the center of the definition we adopted in the current study.

Creative Role Identity and Its Antecedents

Despite research (e.g., Barron & Harrington, 1981) reporting that eminent creators hold self-images or self-concepts consistent with creative work, there has been little research targeting factors affecting potential self-concept dimensions specific to creativity (see Tierney and Farmer [2002] for an exception). According to role identity theory, the self consists largely of the various social roles in which an individual engages (Piliavin & Callero, 1991). A sense of role identity stems from two main sources: (1) feedback about the self from social relations and (2) associated self-views (Riley & Burke, 1995). The generation of self-meaning by a role identity reflects a self-regulatory interpretative process of sense making in which relevant inputs from others and oneself are reconciled in an attempt to verify, support, and validate the identity (Riley & Burke, 1995). Ultimately, a role identity reflects an internalized set of role expectations, with the importance of the identity being a function of commitment to the relevant role.

Normative expectations of important “social others” are a major source of an individual’s self-concept through reflexivity, or seeing oneself through such expectations. These perceptions reflect behavioral expectations and, more importantly, expectations about whom others expect one to be. Research has provided ample support for the effects of social expectations on role identity development (e.g., Callero et al., 1987). Creativity expectations are also a catalyst for creative performance (Ford, 1996). Although supervisors’ expectations may influence innovative behavior (cf. Scott & Bruce, 1994), coworkers are another social context factor with the potential to shape employee creativity (Woodman et al., 1993). Recent studies have shown coworkers to influence creativity through encouragement, support, open communication, and informational feedback (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Madjar et al., 2002; Zhou & George, 2001). Given that a sense of identity is often formed by face-to-face interactions within small groups (Oyserman & Packer, 1996), coworkers may also be a salient referent for creativity expectations informing an employee’s sense of creative role identity (Riley & Burke, 1995). Role identity theory suggests that employees perceiving that their coworkers expect them to be creative may be likely to define themselves as creative.

In Taiwan and other Chinese cultures, the degree of concern for the expectations of social others is quite high (Yang, 1981). Given the tendency for self-construals in Chinese cultures to be particularly sensitive to the perceived views of others

(Markus & Kitayama, 1991), we would anticipate the influence of perceived coworker expectations on creative role identity to be strong in Taiwanese culture.

Hypothesis 1. Perceived coworker creativity expectations will be positively related to the strength of creative role identity.

Identity construction is also a function of retrospective sense making (Weick, 1995) which places experienced stimuli in organizing frameworks (schemata). Self-schemata also affect the formation of a role identity (Stryker, 1987) in the sense that they reflect self-expectations or an internal identity standard. A role identity can develop over time as a result of an individual retrospectively interpreting past and continued role activity (Grube & Piliavin, 2000) and becomes internalized because the social and personal costs entailed in no longer fulfilling a specific identity-based role increase as role behaviors continue over time (Stryker, 1980). Therefore, past creative behavior, as seen reflexively by the self, should be a predictor of future creative activity as an individual strives to make his or her identity consistent with past role-related behaviors. This direct self-assessment process (Markus & Wurf, 1987) is pancultural (Markus & Kitayama, 1991), and so should be applicable to employees in Taiwan.

Hypothesis 2. Self-views of creative behavior will be positively related to strength of creative role identity.

In their cultural self-representation theory, Erez and Earley (1993) incorporated and extended role identity precepts by considering how culture influences self-concept. In keeping with a role identity formulation, they noted that as individuals are exposed to or immersed in different cultures, a self-regulatory process will ensue for the purposes of self-enhancement (maintaining positive self-affect and cognitions) and self-consistency (experiencing coherence and continuity). Such processes suggest that cultural elements may serve as identity predictors. Research also indicates that psychological changes can result from exposure to a nonnative culture (Berry, 1980), insofar as aspects of identity, custom, and behavior in the host society are integrated. It is therefore plausible that exposure to a different culture’s orientation toward creativity may influence a creative role identity. In addition, choosing to live in a second culture may indicate to individuals that they have creativity-related characteristics, such as tendencies to deviate from the status quo and to take risks. As a result, their senses of being creative people may be reinforced.

Although the previous arguments are not culture-dependent, there are particular reasons why these effects should be expected in Taiwanese settings. In contrast to Chinese educational systems that encourage mimetic and rote learning, and student conformity to established standards, those in the United States tend to promote novelty for its own sake and are characterized by more transformative educational techniques designed to stimulate personal expression (Gardner, 1989). Acculturation and an associated identity integration should be particularly great for Taiwanese "sojourners" (Dion & Dion, 1996) who live in and/or attend school in a second culture for an extended period. Therefore, it is plausible that immersion within a U.S. setting, in which the valuation of creativity is likely to be higher, may positively affect Taiwanese employees' senses of creative identity. In addition, exposure to knowledge and information from other cultures makes creativity more likely (Csikmentihalyi, 1999), and immersion in the U.S. educational system could reinforce the use of divergent problem-solving skills and experimentation that is critical to creativity, regardless of the existence of a creative role identity. Therefore, we offer the following:

Hypothesis 3. Exposure to U.S. culture will be positively related to strength of creative role identity.

Hypothesis 4. Exposure to U.S. culture will be positively related to employee creativity.

Creative Role Identity and Creative Performance

Role identities motivate role performances because enactment of relevant roles fulfills a critical need for self-verification (Markus & Wurf, 1987) and allows relevant others to identify and categorize an individual (Burke, 1991). The more central an individual's role identity, the higher the probability that the individual's behavior will be consistent with that identity (Stryker, 1980). Thus, the concept of role identity has been useful in predicting a variety of behaviors (cf. Callero, 1985; Riley & Burke, 1995; Grube & Piliavin, 2000). It has also been suggested that a creative role identity may drive creative performance (Fisher, 1997; Petkus, 1996), although this idea has not been tested. In general, because role identities are validated and maintained through role-consistent behavior (McCall & Simmons, 1978), individuals with strong creative role identities should be more creative at work.

An interesting caveat of role identity theory, however, is that a role identity tends to result in role-consistent performances only when the de-

mands of a situation are consistent with the enactment of that identity (McCall & Simmons, 1978). When consistency exists, role support from the context provides self-verification and confirms the relevant identity, thereby increasing the probability of such role performances. When situation-specific demands are inconsistent with a highly salient role identity and identity-consistent actions are not valued or confirmed, the identity will be threatened, and the identity holder will experience feelings of distress (Burke, 1991). Because strongly held role identities are central to a sense of self, and an individual has a commitment to protect his or her sense of identity (Burke, 1991), in such scenarios the individual will tend to refrain from role-related action.

From a sense-making perspective, an employee's decision to engage in creative behavior is preceded by the employee's estimation of a reasonable response regarding such action from the relevant field (Drazin et al., 2000; Ford, 1996). If the employee anticipates a negative response, he or she will avoid creative behavior (Ford, 1996). Because employees with strong creative role identities tend to personalize contextual feedback regarding the value of creativity, they are highly sensitive to the perceived reception of their creativity. The perceived risk goes beyond the loss of tangible rewards; it entails a potential loss of self, or a loss of the sense of identity. If these employees perceive a context as unreceptive to creativity, they will judge that creative action could expose them to feedback suggesting that who they are is not relevant or valued. In contrast, employees with weak creative role identities have no "ego-investment" in being creative people, so they are less concerned about whether their organizations value creativity. Perceived valuing of creativity is a key component of an organizational environment that supports innovation and creativity (Amabile, 1988) and has been linked to creative performance in a number of field studies (e.g., Amabile et al., 1996). Applying this finding to our specific concerns, we would expect employees' perception that their organization values creative action to validate their creative role identities, which should boost role-consistent creative performances. In contrast, when employees with strong creative role identities find themselves operating under conditions that suggest their creative behavior is irrelevant or devalued, they will opt out of creative engagement. In this manner, perceived organizational valuing of creativity modifies the extent to which creative role identity will actually result in creative performance.

Since role identity develops, in part, through social others, maintenance of meaningful identities

should be important in almost any society. However, it may be especially critical in contexts, like Chinese societies, in which fulfilling the identity expectations of relevant others is a strong driver of behavior (Yang, 1981). These considerations suggest that Chinese employees with strong creative role identities will be particularly sensitive to situations that have the potential for either enhancing or threatening a valued identity. In fact Mandarin Chinese has a word for the prestige aspect of gaining face, *mianzi*. Those with strong creative role identities should be particularly motivated to create when creativity is valued since obtaining such *mianzi* will be identity-validating. On the other hand, the loss of *mianzi* would be acute for such a person if that individual engaged in undesired creative activity, and so that person would actively avoid such behavior.

Hypothesis 5. Perceived organizational valuing of creativity will moderate the relationship between creative role identity and creative performance in such a way that the relationship will be positive when valuing is high, and negative when valuing is low.

METHODS

Research Design

After adopting a role identity–creativity model derived from United States–based research as our foundation, we used a focus group and interviews to refine constructs and their interrelations for application to Taiwanese culture (see Berry, 1990). Taiwanese employees who were working in the United States but who had had significant work experience in Taiwan participated in these groups and interviews. Results indicated that our construct definitions for creativity, role identity, and the other study variables were culturally meaningful for these Taiwanese people and that exposure to U.S. culture might be an additional precursor of creative role identity for them. We created English survey items that could be easily translated into Mandarin Chinese and adjusted wordings to make items more concrete and less hypothetical (see Liu, 1986). The survey was then back-translated and recentered (Brislin, 1986): our English version was translated into Chinese and then retranslated into English by two independent bilingual individuals. This process was repeated until convergence among the translations was achieved. We pretested these instruments with several Taiwanese individuals, debriefing question-by-question for understanding and wording issues. After minor changes were made, the instruments were given to a sample

of 20 Taiwanese graduate students with work experience in Taiwan for additional pretesting, with minor changes ensuing.

Sample and Setting

Eleven Taiwanese organizations engaged in some aspect of creative work were initially contacted, and 8 agreed to allow the participation of specific work units in which creativity was required. The sample consisted primarily of engineers, software developers, research scientists, doctors, and pharmacists. Of the 260 surveys distributed, 166 were returned (a response rate of 64 percent). Sample demographic means were: age, 34.25 years (s.d. = 9.07); work experience, 9.64 years (s.d. = 8.43); company tenure, 6.1 years (s.d. = 7.78); and job tenure, 4.95 years (s.d. = 6.13). All employees held high-school degrees, and 91 percent reported some college education. Eighteen percent of the sample had studied or lived in the United States (\bar{x} = 3.8 years). Data for the predictor variables were collected by self-administered surveys distributed and completed on-site with a native-speaking coauthor present to answer questions and ensure response confidentiality. We gave a separate survey to supervisors (n = 31) to collect independent reports of employee creativity.

Because we collected data from eight organizations, we used Within and Between Analysis (WABA; Dansereau, Alutto, & Yammarino, 1984) to determine whether the study variables were better represented by variation between or within organizations. WABA provides two significance tests of whether a variable is best represented at a particular level: *E*-tests of practical significance and *F*-tests of statistical significance. When the results of both are significant, the induction of a particular level of measurement is strongest; when one is significant, the induction is somewhat weaker. For all the study variables, the *Es* were practically significant, and all the *Fs* except those for creative role identity and self-views of creativity were statistically significant (p < .05); however, the *E*-tests for these indicated the strongest level of practical significance. A WABA test conducted for the supervisor-rated creativity measure to assess supervisor response biases per subordinate ratings yielded a practically significant *E*, and a statistically significant *F* (p < .06). These results suggest that the study measures vary primarily at the individual level.

Measures

Creative role identity. We adapted Callero's (1985) role identity scale to measure the extent to

which the role of creative employee had been incorporated into self-identity. This well-validated five-item scale (Callero et al., 1987; Piliavin & Callero, 1991) uses five-point Likert scaling for responses. Guided by our exploratory research, we modified the items' wording to reflect centrality of role identity as a creative employee, and dropped two items because of translation problems and low item-total correlations ($\alpha = .80$). The Appendix presents the three creative role identity items and all subsequently described items.

Predictors of creative role identity. Perceived coworker expectations for creativity were measured by adapting six items from Callero's (1985) subjective social norm scale ($\alpha = .74$). To measure employees' views of their own creative behavior (henceforth, "self-views"), we used eight items from the sufficiency of originality subscale of the Kirton Adaption-Innovation Inventory (KAI; Kirton, 1976) that apply in Chinese work settings (see Danis & Dollinger, 1998). Research suggests that the originality subscale can serve as a partial self-report of creativity level (Goldsmith & Matherly, 1987), and previous creativity studies (e.g., Amabile, Hill, Hennessey, & Tighe, 1994) have used the KAI as such ($\alpha = .91$). Drawing on existing work (e.g., Amabile et al., 1996) and our exploratory research, we measured perceived organizational valuing of creativity with six items assessed on a six-point Likert response scale ($\alpha = .89$). Exposure to the U.S. cultural environment was assessed by the length of time lived in the United States (in years) and the number of educational degrees obtained there. After standardizing each indicator to create a common metric, we computed a composite score by taking the mean of the two items ($\alpha = .95$).

Employee creativity. As in with prior work (e.g., Oldham & Cummings, 1996; Zhou & George, 2001), employee creativity was assessed by supervisor ratings of four items, from Tierney, Farmer, and Graen (1999), on a six-point scale. This creativity scale taps actions perceived by participants in our exploratory research to reflect the Chinese view of employee creativity ($\alpha = .92$).

Control variables. We also collected data for controls likely to provide alternative explanations for creativity as suggested by previous research (e.g., Oldham & Cummings, 1996; Tierney & Farmer, 2002). Educational level was measured on a five-point scale (1 = "high school," 5 = "doctorate"). Per Oldham and Cummings (1996), we assessed psychological job complexity with ten items (two items for each of the five subscales of autonomy, task variety, task significance, feedback, and meaningfulness) from the Job Diagnostic Survey (Hackman & Oldham, 1980) to create a "motivating

potential score"; the median alpha for the five subscales was .79.

Data Analysis

To check the convergent and discriminant validity of the five self-reported scales (creative role identity, coworker expectations, self-views, perceived organizational valuing of creativity, and psychological job complexity), we conducted confirmatory factor analysis using EQS (Bentler, 1995) to compare several nested models representing plausible alternative factor scale structures. For instance, one comparison was between the hypothesized five-factor model and a four-factor model collapsing self-views and perceived coworker expectations; models and results are available from the authors. As we did with all later structural equation modeling (SEM) analyses, we created three manifest indicators for each latent factor by randomly assigning items to composites to reduce the number of parameters assessed, thus improving the ratio between sample size and estimator. Because the SEM assumption of multivariate normality was violated (normalized Mardia coefficient = 10.85, $p < .05$), we report results using statistics designed to adjust for nonnormality (Bentler, 1988): a scaled chi-square statistic for overall model fit, robust versions of the comparative fit index (CFI), the incremental fit index (IFI), and the root-mean-square error of approximation (RMSEA), and robust estimates of standard errors. The hypothesized five-factor model showed good fit in absolute terms ($\chi^2 = 102.48$, $df = 67$, $p < .003$) and exhibited better fit than all alternative models on each of the indexes noted above (CFI = .96, IFI = .96, RMSEA = .06). These results indicate that the self-report scales used did possess adequate discriminant and convergent validity.

RESULTS

Descriptive statistics and zero-order correlations are presented in Table 1. Hypothesis tests were conducted using structural equation modeling within EQS. The SEM assumption of multivariate normality was violated (normalized Mardia coefficient = 12.62, $p < .05$), and so the statistics reported below are the robust or scaled versions noted previously. Structural paths were freed for estimation according to the hypotheses (Figure 1), with the addition of paths from the control variables of education and job complexity to employee creativity. We also estimated item-factor loadings and error terms for the three composites assigned to each structural factor, and appropriate disturbance

TABLE 1
Means, Standard Deviations, and Correlations^a

Variable	Mean	s.d.	1	2	3	4	5	6	7
1. Creativity ratings by supervisor	3.50	1.20	.92						
2. Creative role identity	3.96	0.68	.29**	.80					
3. Perceived organizational valuing of creativity	4.04	0.98	.49**	.22**	.89				
4. Perceived coworker creativity expectations	3.22	0.54	.39**	.39**	.50**	.74			
5. Self-views of creative behavior	4.10	0.78	.30**	.42**	.46**	.42**	.91		
6. Exposure to U.S. culture	0.00	1.00	.47**	.31**	.38**	.39**	.27**	.95	
7. Educational level	3.18	1.17	.43**	.20*	.42**	.38**	.38**	.55**	
8. Psychological job complexity	146.46	79.50	.47**	.29**	.64**	.55**	.57**	.36**	.49**

^a $n = 151$ after “listwise” deletion. Coefficient alpha reliabilities are reported on the diagonal.

* $p < .05$

** $p < .01$

terms associated with endogenous variables. Exogenous and control variables were allowed to correlate with each other. All other paths were constrained to zero.

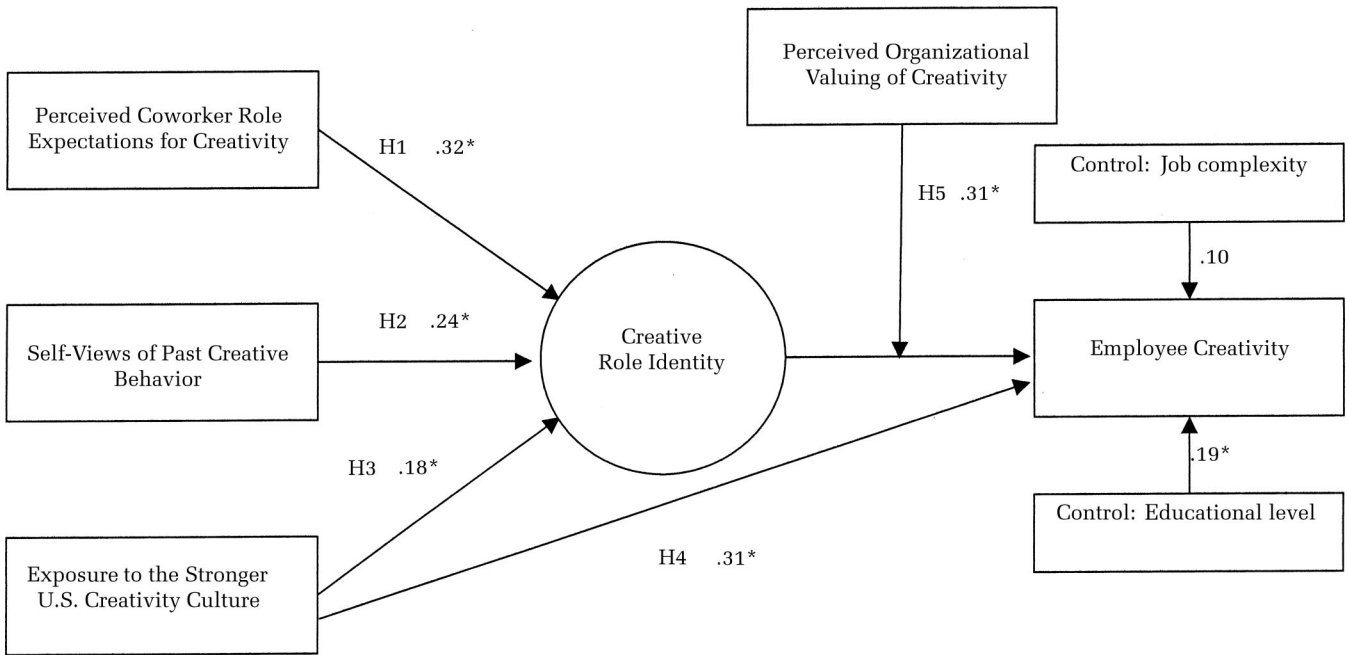
We used a two-step technique (Mathieu, Tannenbaum, & Salas, 1992) to examine the interaction between creative role identity and perceived organizational valuing of creativity (Hypothesis 5). This approach involves estimating an additive model in which the measurement and error properties of the interaction components and their product term are fixed by setting the path for each component indicator equal to the square root of its reliability and setting its error term to equal the product of its variance and one minus its reliability. A correlation between the latent variables for creative role identity and perceived organizational valuing is derived and used to estimate the reliability for the product term. This value is used to fix the measurement properties for the product term in the second model that includes the product term. The final step involves testing the model with, and without, the path from the latent product term to the creativity criterion, allowing a chi-square difference test of fit between the two models.

Results for the hypothesized model (the model with the latent product term; see Figure 2) show acceptable fit for the overall model in absolute terms ($\chi^2 = 153.93$, $df = 85$, $p < .001$; CFI = .93, IFI = .93, RMSEA = .08). Squared multiple correlations for the structural equations were also obtained (R^2 s = .45 and .36 for creative performance and creative role identity, respectively). Standardized parameter estimates for the linkages between creative role identity and perceived coworker creativity expectations (.32), self-views of creative behavior (.24), and U.S. exposure (.18) were all significant, supporting Hypotheses 1, 2, and 3. The

results indicated that perceived coworker expectations, self-views of creative behavior, and U.S. exposure had no significant indirect effects on creativity. The link between U.S. exposure and creativity was significant (.31), supporting Hypothesis 4. One control variable, educational level, did show a significant direct association with creativity (.19).

Results for the model deleting the path from the product term to the creativity criterion showed a worse fit ($\chi^2 = 158.73$, $df = 86$, $p < .001$; CFI = .92, IFI = .92, RMSEA = .09). We calculated the difference in chi-squares between the two models using the Satorra-Bentler scaled difference test, since this statistic performs well under conditions of multivariate nonnormality in small samples (Satorra & Bentler, 1999). This difference was 8.19 ($df = 1$, $p < .05$), indicating that a significant interaction was present (Cortina, Chen, & Dunlap, 2001) explaining an incremental 6 percent of variance in creativity beyond that explained by role identity, perceived organizational valuing, and the controls. The standardized parameter estimate for the interaction was significant at .31. Parameter estimates for the interaction components (not shown in Figure 2, and not interpreted since they were conditional) were: creative role identity, .12 ($p > .05$); perceived organizational valuing of creativity, .34 ($p < .05$). Following Cortina et al. (2001), we generated an interaction plot (see Figure 3) using the standardized equation with the Y-axis metric in standard deviations. Supporting Hypothesis 5, results showed that the relation of role identity to creativity is augmented when employees perceive that their organization values creativity. At very low levels of valuing creativity, creative role identity is negatively related to creativity. Valuing of

FIGURE 2
Structural Model Standardized Parameter Estimates^a



^a $n = 151$. $\chi^2 = 153.93$, $df = 85$, $p < .001$. Robust CFI = .93, robust IFI = .93, robust RMSEA = .08. Satorra-Bentler scaled difference chi-square versus direct-effects (no interaction) model, 8.19; $df = 1$, $p < .05$.
 * $p < .05$

creativity seems to make little difference for employees with weak creative role identities.

The relatively small size, multivariate nonnormality, and nonlinear interaction term of our sample may affect sample stability adversely. To check the robustness of the findings, we reassessed the hypothesized relations using models that increased the sample-size-to-estimator ratio, thus reducing the number of covariances estimated and improving sample stability. This was done first by using single indicators for latent variables, and again by removing all exogenous correlations from the model. The significance of each of the hypothesized relationships remained the same as that reported above, and the significance of fit between the direct effects and interaction models tested also showed no change.

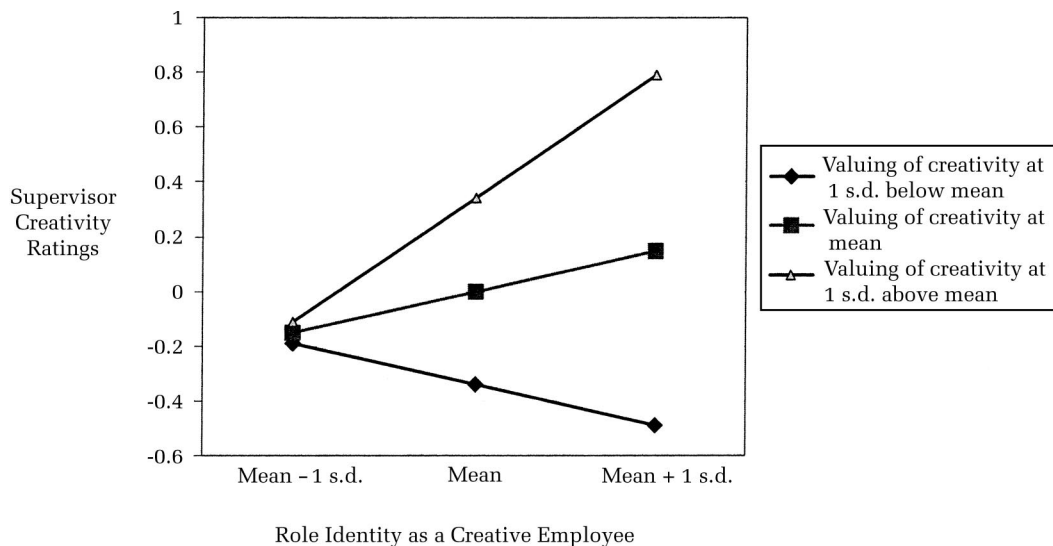
DISCUSSION

Consistent with role identity theory, the results of this study show that when employees perceived that coworkers expected them to be creative, their role identities as creative employees were stronger. The finding supports the notion that work group cohorts may play an important role for innovation and warrant further research consideration in this

capacity (Woodman et al., 1993). It also suggests that practicing managers should be sensitive to the impact work peers may have on employees formulating a sense of identity and that the communication of positive peer creativity expectations should be the norm. Interestingly, perceived coworker expectations was the strongest study predictor of creative role identity. This finding runs counter to McCall and Simmons's (1978) assertion that individuals usually attach less importance to others' expectations than to their own self-views concerning identity-relevant input. One possible explanation for this pattern is this study's context. In order to protect the "social self," Chinese people tend to act in strong accordance with social others' expectations (Yang, 1981). Although self-views and others' views should both be important in almost any cultural context, the relative strength of their effects on creative role identity may depend on whether self-construals are independent, as in individualist cultures, or interdependent, as in more collectivist cultures (Markus & Kitayama, 1991). In general, these results suggest that greater attention be given to the influence of social forces on creative role identity, especially those involving workplace and cultural norms and expectations.

Supporting another central tenet of role identity

FIGURE 3
Interaction of Creative Role Identity and Organizational Valuing of Creativity for Creativity Ratings



theory was our finding that employees who reported being creative in the past also had stronger senses of creative role identity. This finding underscores the necessity of managers providing employees with ample opportunities for creative endeavors if they are to develop firm identities as creative employees. Since such self-views may be schematic, they may reflect culturally based implicit theories concerning what constitutes a creative employee. Given this possibility, future research is needed to determine the degree of past creativity necessary to inform a positive creative role identity and if this degree is culturally defined.

More extensive contact with U.S. culture was also positively related to creative role identity. This result suggests that multinational managers should anticipate that employee exposure to a second culture with a defined creativity orientation may be a catalyst for employees' development of a stronger creativity self-concept. U.S. culture places fewer limits on creative expression than do Chinese societies (Gardner, 1989), and during their stay in the United States, these Taiwanese sojourners probably had numerous opportunities to try out creative role practices (McCall & Simmons, 1978) in settings in which such performance received significant role validation (Petkus, 1996). The presence of such support would tend to reinforce and strengthen creative role identity. These findings are consistent with a growing body of research suggesting that culture experienced psychologically has a direct effect on self-construals (e.g., Erez & Earley, 1993).

Greater U.S. exposure was also directly related to creativity. Taiwanese sojourners acculturated in the U.S. environment may tend to develop skills

and to have experiences conducive to enhanced creative performance. It is important to note that we measured employee immersion into a country having a stronger focus on creativity than did their homeland. Future research needs to delineate whether enhanced creativity results from exposure to a more creative culture, or if it is simply a result of interacting and residing in a culture different from one's own (Csikszentmihalyi, 1999). Of course, an alternative explanation for this finding would be that those individuals most inclined to seek residence in another, distinct, culture may have a propensity for risk taking and creative expression to begin with.

Because it allows for role performance aligned with a meaningful identity, an organization that values creativity should provide an atmosphere in which demonstrations of creativity affirm the self. In fact, employees in the current study with strong creative role identities had higher levels of creative output when they perceived that their organization valued creative work. Although work context and other factors also determine creativity, an employee's initial decision to pursue creative action is a necessary step for creative performance (Ford, 1996). Our finding illustrates one way in which employees' sense making regarding their work context may influence this decision. Our findings are also consistent with role identity theory's position that when the acting out of strong role identities is met with negative reactions, individuals will be motivated to avoid role-consistent performance in the same setting as a means of protecting, or hiding, a core part of themselves. Our results support the possibility of a paradox: in their diligence to hide their

creative sides from feedback that would devalue an important aspect of self, employees with strong creative role identities will be less creative than those who give little thought to being creative but may still be minimally creative owing to other factors.

The results further suggest that, although practicing managers may identify employees with strong creative role identities and place them in positions in which they can be creative, the potential of their creative self-images will not be evidenced unless the managers demonstrate that the organization values creativity at all levels. In order for such value to be apparent to employees, organizations must diligently implement human resource practices, work structures, and organizational policies that support creative action. Failure to provide a context that appreciates creative-identity-specific behaviors may ultimately lead creative employees to seek psychological balance by withdrawing, or by leaving an organization entirely (Burke, 1991).

Because our study was cross-sectional, the possibility of reverse causality exists insofar as creative performances may shape self-views and others' expectations, enhancing creative role identity. Future research should incorporate longitudinal designs to account for reciprocal causality in the role identity relations presented in this study. It is also possible that variance resulting from organizational source or within-supervisor dependence influenced the results; however, the WABA results indicated that variance in the study variables was primarily at the individual level, and theory supports this as well. Despite the additional analyses we conducted to assess robustness of the findings, we cannot completely discount problems with sample stability, given the sample size and the lack of multivariate normality in our sample. Tests of the generality of these relations in other settings should be a direction for future research. Finally, researchers conducting future studies should attempt to incorporate multiple indexes of creative performance. Such action is particularly important as researchers begin to examine creativity from a more transnational perspective and need to collect measures appropriate to a given domain. Because the link between identity-based self-views and behaviors is basic to role identity theory, we feel this theory offers a useful general frame for examining self-identity in relation to creative behavior across cultures. However, we limited the testing of our prescriptions to the Taiwanese setting, and some caution is warranted in extending these results to other cultures. Future work is needed to explore the cross-cultural applicability of creative role identity and the particular relationships we detected.

Some sense of identity permeates everyone's daily life. We found two aspects of our study results to be most interesting in relation to this idea. The first was that some individuals may have identities specific to creativity; they see being creative as a central part of who they are. The second aspect was a preliminary insight as to what occurs when individuals operate in a context they see as encouraging, or discouraging, their senses of who they are. We feel these results have theoretical implications for both organizational creativity and role identity.

First, they suggest a unique, creativity-specific self-image attribute relevant to creative action. Also, approaching creativity from a role-identity perspective provides a useful lens for examining factors that associate with an employee's sense of creative identity and for understanding how sense-making processes and contextual factors may shape manifestations of such an identity. Second, the results provide compelling support for the interactionist view of creativity (e.g., Amabile, 1988) in that the potential for creativity among our sample's members did lie at the intersection of the self and the setting. In our study, we found a group of employees, inherently predisposed toward creative work through their identities, who appeared to diligently avoid creative role behavior if they perceived it was not valued by their organization.

Although we focused on a single role identity, individuals have multiple, coexisting identities (Burke & Tully, 1977). One possible next step in this line of inquiry would be to expand consideration to include other employee identity constructs and examine how they influence behaviors either consistent, or inconsistent, with creative engagement. Role identities are also associated with varying affect (McCall & Simmons, 1978). As such, the concept of identity may have relevance for recent research integrating affect and creative performance (e.g., Madjar et al., 2002). The current study also expands the application of role identity theory, going beyond previous studies that have investigated identity relative to nonwork behavior (such as blood donation) to investigate how identity applies in situ for creative role behavior in the workplace. Finally, our results also suggest how role identity constructs apply in a culture distinct from U.S. culture. The extensive exploratory research and pretesting we conducted to ensure the cultural validity of constructs and measurement enabled us to explain a high level of creativity variance in Taiwanese work settings, and these settings are growing in prominence on the stage of global innovation.

REFERENCES

- Amabile, T. M. 1988. A model of creativity and innovation in organizations. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior*, vol. 10: 123–167. Greenwich, CT: JAI Press.
- Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. 1996. Assessing the work environment for creativity. *Academy of Management Journal*, 39: 1154–1184.
- Amabile, T. M., Hill, K. G., Hennessey, B. A., & Tighe, E. M. 1994. The Work Preference Inventory: Assessing intrinsic and extrinsic motivational orientations. *Journal of Personality and Social Psychology*, 66: 950–967.
- Barron, F. M., & Harrington, D. M. 1981. Creativity, intelligence and personality. In M. R. Rosenweig & L. W. Porter (Eds.), *Annual review of psychology*, vol. 32: 439–476. Palo Alto, CA: Annual Reviews.
- Bartlett, C. A. & Ghoshal, S. 1989. *Managing across borders: A transnational solution*. Boston: Harvard Business School.
- Bentler, P. M. 1988. Comparative fit indexes in structural models. *Psychological Bulletin*, 107: 238–246.
- Berry, J. W. 1980. Acculturation as varieties of adaptation. In A. Padilla (Ed.), *Acculturation: Theories, models, and some new findings*: 9–25. Boulder, CO: Westview.
- Berry, J. W. 1990. Imposed etics, emics, derived etics: Their conceptual and operational status in cross-cultural psychology. In T. N. Headland, K. L. Pike, & M. Harris (Eds.), *Emics and etics: The insider/outsider debate*: 28–47. Newbury Park, CA: Sage.
- Brislin, R. W. 1986. The wording and translation of research instruments. In W. J. Lonner & J. W. Berry (Eds.), *Field methods in cross-cultural research*: 137–164. Beverly Hills, CA: Sage.
- Burke, P. J. 1991. Identity processes and social stress. *American Sociological Review*, 56: 836–849.
- Burke, P. J., & Tully, J. C. 1977. The measurement of role identity. *Social Forces*, 55: 881–897.
- Callero, P. L. 1985. Role-identity salience. *Social Psychology Quarterly*, 48: 201–215.
- Callero, P. L., Howard, J. A., & Piliavin, J. A. 1987. Helping behavior as role behavior: Disclosing social structure and history in the analysis of prosocial action. *Social Psychology Quarterly*, 50: 247–256.
- Cortina, J. M., Chen, G., & Dunlap, W. P. 2001. Testing interaction effects in LISREL: Examination and illustration of available procedures. *Organizational Research Methods*, 4: 324–360.
- Csikszentmihalyi, M. 1999. Implications of a systems perspective for the study of creativity. In R. J. Sternberg (Ed.), *Handbook of creativity*: 313–338. New York: Cambridge University Press.
- Danis, W., & Dollinger, M. J. 1998. A provisional comparison of factor structures using English, Japanese, and Chinese versions of the Kirton Adaption-Innovation Inventory. *Psychological Reports*, 83: 1095–1103.
- Dansereau, F., Alutto, J. A., & Yammarino, F. J. 1984. *Theory testing in organizational behavior: The variant approach*. Englewood Cliffs, NJ: Prentice-Hall.
- Dion, K. L., & Dion, K. K. 1986. Chinese adaptation to foreign cultures. In M. H. Bond (Ed.), *The handbook of Chinese psychology*: 457–478. Hong Kong: Oxford University Press.
- Dowd, E. T. 1989. The self and creativity: Several constructs in search of a theory. In J. A. Glover, R. R. Ronning, & C. R. Reynolds (Eds.), *Handbook on creativity*: 233–242. New York: Plenum.
- Drazin, R., Glynn, M. A., & Kazanjian, R. K. 1999. Multilevel theorizing about creativity in organizations: A sensemaking perspective. *Academy of Management Review*, 24: 286–307.
- Drazin, R., & Schoonhoven, C. B. 1996. Community, population, and organization effects on innovation: A multilevel perspective. *Academy of Management Journal*, 39: 1065–1083.
- Erez, M., & Earley, P. C. 1993. *Culture, self-identity, and work*. New York: Oxford University Press.
- Fisher, T. 1997. The designer's self-identity: Myths of creativity and the management of teams. *Creativity and Innovation Management*, 6(1): 10–18.
- Ford, C. 1996. A theory of individual creative action in multiple social domains. *Academy of Management Review*, 21: 1112–1142.
- Gardner, H. 1989. *To open minds*. New York: Basic Books.
- Goldsmith, R. E., & Matherly, T. A. 1987. Adaptation, innovation and creativity: A replication and extension. *British Journal of Social Psychology*, 26: 79–82.
- Grube, J., & Piliavin, J. 2000. Role identity, organizational experiences, and volunteer performance. *Personality and Social Psychology Bulletin*, 26: 1108–1119.
- Hackman, J. R., & Oldham, G. R. 1980. *Work redesign*. Reading, MA: Addison-Wesley.
- Kirton, M. J. 1976. Adaptors and innovators: A description and measure. *Journal of Applied Psychology*, 61: 622–629.
- Li, J., & Gardner, H. 1993. How domains constrain creativity: The case of traditional Chinese and Western painting. *American Behavioral Scientist*, 37: 94–102.
- Liu, I. M. 1986. Chinese cognition. In M. H. Bond (Ed.), *The psychology of the Chinese people*: 73–102. Hong Kong: Oxford University Press.
- Madjar, N., Oldham, G. R., & Pratt, M. G. 2002. There's no

- place like home?: The contributions of work and nonwork creativity support to employees' creative performance. *Academy of Management Journal*, 45: 757–767.
- Markus, H. R., & Kitayama, S. 1991. Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98: 224–253.
- Markus, H., & Wurf, E. 1987. The dynamic self-concept: A social psychological perspective. In M. R. Rosenzweig & L. W. Porter (Eds.), *Annual review of psychology*, vol. 38: 299–337. Palo Alto, CA: Annual Reviews.
- Mathieu, J. E. Tannenbaum, S. I. & Salas, E. 1992. Influences of individual and situational characteristics on measures of training effectiveness. *Academy of Management Journal*, 35: 828–847.
- McCall, G., & Simmons, J. L. 1978. *Identities and interaction*. New York: Free Press.
- Oldham, G. R., & Cummings, A. 1996. Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, 39: 607–634.
- Oyserman, D., & Packer, M. J. 1996. Social cognition and self-concept: A socially contextualized model of identity. In J. L. Nye & A. Brower (Eds.), *What's social about social cognition? Research on socially shared cognition in small groups*: 175–201. Thousand Oaks, CA: Sage.
- Petkus, E. 1996. The creative identity: Creative behavior from the symbolic interactionist perspective. *Journal of Creative Behavior*, 30: 188–196.
- Piliavin, J. A., & Callero, P. L. 1991. *Giving blood: The development of an altruistic identity*. Baltimore: Johns Hopkins.
- Redding, G., & Wong, G. Y. Y. 1986. The psychology of Chinese organizational behaviour. In M. H. Bond (Ed.), *The psychology of the Chinese people*: 267–295. Hong Kong: Oxford University.
- Riley, A., & Burke, P. J. 1995. Identities and self-verification in the small group. *Social Psychology Quarterly*, 58: 61–73.
- Satorra, A., & Bentler, P. M. 1999. A scaled difference chi-square test statistic for moment structure analysis. <http://preprints.stat.ucla.edu/260/260.pdf>.
- Scott, S. G., & Bruce, R. A. 1994. Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal*, 37: 580–607.
- Stryker, S. 1980. *Symbolic interactionism: A social structural version*. Menlo Park, CA: Benjamin/Cummings.
- Stryker, S. 1987. Identity theory: Developments and extensions. In K. Yardley & T. Honess (Eds.), *Self and identity: Psychosocial perspectives*: 89–103. Chichester, England: Wiley.
- Tierney, P., & Farmer, S. M. 2002. Creative self-efficacy: Potential antecedents and relationship to creative performance. *Academy of Management Journal*, 45: 1137–1148.
- Tierney, P., Farmer, S. M., & Graen, G. B. 1999. An examination of leadership and employee creativity: The relevance of traits and relationships. *Personnel Psychology*, 52: 591–620.
- Weick, K. E. 1995. *Sensemaking in organizations*. Thousand Oaks, CA: Sage.
- Woodman, R. W., Sawyer, J. E., & Griffin, R. W. 1993. Toward a theory of organizational creativity. *Academy of Management Journal*, 18: 293–321.
- Yang, K. S. 1981. The formation and change of Chinese personality: A cultural-ecological perspective. *Acta Psychologica Taiwanica*, 23(1): 39–56.
- Zhou, J., & George, J. M. 2001. When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Academy of Management Journal*, 44: 682–696.

APPENDIX

English Translations of Scale Items

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- Role Identity as a Creative Employee
 I often think about being creative.
 I do not have any clear concept of myself as a creative employee. (reverse-coded)
 To be a creative employee is an important part of my identity.
- Perceived Coworker Expectations for Creativity
 My coworkers in the unit think of me as a creative employee.
 My coworkers in the unit think that creativity is important to me.
 It really wouldn't matter to my coworkers if I was not creative. (reverse-coded)
 Many other unit employees expect me to be creative.
 No one in the unit would be surprised if I was not creative. (reverse-coded)
 Many unit employees would probably be disappointed in me if I was not creative.
- Self-Views for Past Creative Behavior^a
 Please indicate how often you could be described as a person who:
 Always thinks of other ways to solve problems when he or she runs into obstacles.
 Would sooner create something than improve it.
 Has fresh perspectives on old problems.
 Prefers changes to occur gradually. (reverse-coded)
 Copes with several new ideas and problems at the same time.
 Helps other people develop new ideas.
 Has lots of new ideas.
 Needs the stimulation of frequent change.
- Perceived Organizational Valuing of Creativity
 Top management is very supportive of creative work.
 I feel creativity is supported and encouraged
 New ideas or concepts are fostered.
 Top management values creative work.
-

I can do creative or innovative work without feeling threatened by others.
New ideas are encouraged.

Employee Creativity

This employee:
Tries new ideas or methods first.
Seeks new ideas and ways to solve problems.
Generates ground-breaking ideas related to the field.
Is a good role model for creativity.

^a These items are adapted from the Kirton Adaption-Innovation Inventory (KAI; Kirton, 1976).



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