

## Social Roles and Category Use: A Study of Creativity Assessment

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### Abstract

We show that social roles alter creativity assessments. Specifically, the two main roles in the innovation process – generator roles for producing new ideas and implementer roles for selecting ideas to pursue – invoke different lay theories about what is creative. Study 1 showed that implementers rated a low novelty version of an idea as more creative than a high novelty version, but generators did the opposite. Study 2 showed that generators rated a low usefulness idea as more creative than a high usefulness idea, but implementers did the opposite. Thus, complementary roles prompted competing perspectives. These findings underscore a new challenge for the social distribution of knowledge-intensive work.

**Keywords:** Social Roles; creativity; categories; lay theories.

### Introduction

Editor's response to Sylvia Plath: *There certainly isn't enough genuine talent for us to take notice.*

Editor's response to Rudyard Kipling: *I'm sorry Mr. Kipling, but you just don't know how to use the English language.*

Many creative ideas are rejected and not necessarily more kindly than Plath's and Kipling's were. Thus, it is not enough to produce creative ideas. For cultural and scientific advancement, others need to recognize that the ideas are creative. One longstanding view is *de gustibus non est disputandum*—assessments are idiosyncratic. In contrast, current creativity theory and research claims that assessments are guided by domain knowledge. People within a community develop lay theories surrounding the category of creativity—causal and relational knowledge about what counts as creative and what is a more and less central member of the category. With expertise in the area (Amabile, 1982; Csikszentmihalyi, 1988), or even just moderate exposure to the area (Hennessey, Amabile, & Mueller, 2010; Sawyer, 2012), individuals appear to converge with others in their assessments of creativity. However, given how complex the causal and relational

knowledge is that underpins judgments about creativity, we suggest that individuals' assessments of creativity are guided by more than just their domain knowledge. We suggest that they are also guided by their social roles.

We explore the possibility that the editors failed to recognize Plath and Kipling's creative ideas not because of lack of knowledge or idiosyncratic taste but because of their roles as editors. Specifically, we examine two key roles studied by organizational psychologists examining organizational innovation (Elsbach & Kramer, 2003; Klein & Knight, 2005; Klein & Sorra, 1996): *implementers*, such as a book editor, and *idea generators*, such as a book author. We propose that adopting an implementer role leads to a different view of what is creative than adopting a generator role. The argument we make is parallel to one made about roles and person perception: different roles can produce different expectancies (Biddle, 1986), which then lead individuals in those roles to form different assessments of the same focal person (e.g., Winkler, Mohr, & Kenny, 1998). Accordingly, it is not just that expectancies can highlight some aspects of the causal and relational structure underpinning a complex category and so alter judgments about that category, but also that those expectancies are systematically tied to particular social roles.

Social roles could shape assessments of creativity by shifting the lay or implicit theories (Paletz & Peng, 2008; Sternberg, 1985) people use to evaluate ideas for creativity. This would resolve a puzzle in the creativity literature, which provides evidence of multiple, potentially conflicting lay theories about creativity. While there is widespread agreement that creative ideas combine novelty and usefulness (George, 2007), one lay theory is that novelty is the dominant characteristic in creativity assessments (Amabile, Barsade, Mueller, & Staw, 2005), whereas another lay theory highlights that usefulness is the essential component of creativity assessments (Cooper, 2006). Which concern, novelty or usefulness, is deemed most causally central might be critical, as there is now evidence that people's assessments of novelty and usefulness are negatively related (Rietzschel, Nijstad, & Stroebe, 2009). One reason why is a lay theory that highly novel ideas are not very useful, as they are likely to fail to solve problems

on time and within budget (Elsbach et al., 2003), and to fail in the marketplace (Fleming, 2001), rendering them less creative (Mueller, Melwani, & Goncalo, 2012). Another reason why is a lay theory within scientific communities that high levels of usefulness can indicate that an idea is not very novel, as usefulness indicates taking on a smaller challenge and making a smaller change from current practice (Drazin, Glynn, & Kazanjian, 1999). We suggest that people's social roles guide which lay theories they use, and so which causal factor underlying their model of creativity is central and shaping their creativity assessments.

We focus on two social roles that are fundamental to the social division of labor in the innovation process, generator and implementer roles (Elsbach et al., 2003). The innovation literature notes that these roles are complementary, and their coordination is key to the process of innovation (Krishnan & Ulrich, 2001): generators create new ideas, products and processes that implementers then assess, select and pursue. For example, scientists generate articles that editors vet, entrepreneurs generate business ideas that venture capitalists fund, and researchers generate product ideas that managers implement.

The two roles generate different expectancies. Generator roles include expectations around generating new ideas and overcoming challenges to solve problems in novel ways (Drazin et al., 1999). Hence, generator roles may activate lay theories about novelty being key to creativity and about highly useful ideas being less creative due to less opportunity for overcoming novel challenges. Implementer roles include expectations around maximizing efficiency by meeting timelines as well as budgetary and resource constraints (Drazin et al., 1999). Accordingly, implementer roles may activate lay theories about creative ideas being distinguished by usefulness and about highly novel ideas being less creative due to challenges of implementation.

If these predictions hold, then it will provide support for the importance of social roles and expectancies in assessing creativity. Managers may want creativity, but as implementers, they may adopt perspectives that lead them to reject the ideas that creators find most compelling. Thus, our account provides an explanation for the phenomenon of managers saying they want creativity but nonetheless end up rejecting creative ideas, a phenomenon that is widely noted in the popular press (e.g., Bussey, 2012; Hindo, 2007) and in the innovation research literature (DeFillippi, Grabher, & Jones, 2007; Smith & Lewis, 2011; Staw, 1995). The broader theoretical implication is that two complementary roles, such as implementer and generator roles in the innovation process, may bring with them complementary knowledge, but they may also bring with them competing causal models of the same categories that may thwart their ability to coordinate, communicate, and perform together.

## Experiment 1

This study examined how individuals in generator and implementer roles assessed a high and a low novelty idea.

We expected generators to assess the high novelty idea as more creative than the low novelty idea, because of their lay theory that novelty is the distinguishing characteristic of creative ideas. The key prediction though is that we expected implementers to rate the high novelty idea as less creative than the low novelty idea, because of a lay theory that highly novel ideas are less useful and so less creative. Critically, we examine these predictions about role effects by ensuring there were no systematic differences in domain knowledge (an effect that may otherwise accompany roles) by randomly assigning people to roles (as classically done in Anderson & Pichert, 1978, among other work).

## Method

**Participants and Design** We recruited 176 people from Amazon's Mechanical Turk (62% male,  $M = 28.41$  years,  $SD = 9.43$ ). Participants averaged 8.09 ( $SD = 8.94$ ) years of work experience. Participants were randomly assigned to one of four conditions of a 2 (role: generator, implementer) X 2 (idea novelty: high, low) between-subjects design. Each cell contained more than 34 cases.

**Procedure and Materials** In Part one, participants were assigned to either a generator or an implementer role at a "large innovative product development firm" that "develops high performance outdoor gear." Generators were responsible for "generating new ideas, brainstorming technologies, and developing products and processes." Implementers were responsible for "cost savings, profitability, decreased time to market, meeting deadlines and product functionality." These descriptions were from prior research outlining generator and implementer role expectations (Drazin et al., 1999). Participants then wrote about the "important things that help you perform this role." In a pilot study ( $N = 152$ ), three coders (average coder-pair agreement was 94%) rated whether participants described resources for novelty (e.g., "good team to help bounce ideas off of," "inspiring workspace") and for usefulness (e.g., "efficient staff," "computer with accounting programs"). Implementers (96%) mentioned usefulness more than generators (36%,  $\chi^2(1) = 61.46$ ,  $p < .01$ ). Generators (80%) mentioned novelty more than implementers (13%,  $\chi^2(1) = 70.01$ ,  $p < .01$ ). Thus, this manipulation led participants to adopt the intended roles and associated concerns.

In Part two, participants rated an idea for a "waterproof fleece," which "uses a soft, breathable and waterproof fabric using bio-mimicry to replicate the properties of a leaf in the Amazon rain forest that repels water yet is also very soft and pliable to the touch." The high novelty idea was described as a "completely new technology not currently available in the marketplace," while the low novelty idea was described as "an existing technology currently available in the marketplace." In a pilot study ( $N = 54$ ), participants (not put in any role) rated the high or low novelty idea as: new and original (assessing novelty,  $\alpha = .86$ ), useful and valuable (assessing usefulness,  $\alpha = .73$ ), and creative and

innovative (assessing creativity,  $\alpha = .83$ ). Participants rated the low novelty idea ( $M = 4.70$ ) as less novel than the high novelty idea ( $M = 5.83$ ,  $t(53) = 3.53$ ,  $p < .01$ ), but comparably useful ( $M = 6.00$ ) to the high novelty idea ( $M = 5.89$ ,  $t(53) = -.45$ , ns). In addition, participants rated the low novelty idea ( $M = 5.22$ ) as less creative than the high novelty idea ( $M = 5.70$ ,  $t(53) = 2.68$ ,  $p < .05$ ). Thus, the level of novelty was noticeable and produced a shift in perceived creativity. Participants in the main study rated the ideas using the same creativity, usefulness and novelty scales (all alphas above .70).

## Results

A multivariate ANOVA identified interactions between role (generator or implementer) and idea type (high or low novelty) when predicting creativity ratings ( $F(1, 172) = 38.38$ ,  $p < .01$ ,  $\eta^2 = .15$ ), novelty ratings ( $F(1, 172) = 9.00$ ,  $p < .05$ ,  $\eta^2 = .03$ ) and usefulness ratings ( $F(1, 172) = 7.75$ ,  $p < .05$ ,  $\eta^2 = .05$ ). Planned comparisons revealed a crossover interaction such that generators rated the high novelty idea as significantly more creative ( $M = 6.04$ ) than implementers ( $M = 5.43$ ,  $t(86) = 3.48$ ,  $p < .01$ ,  $\eta^2 = .19$ ; Figure 1). Generators rated the low novelty idea as significantly less creative ( $M = 4.62$ ) than implementers ( $M = 5.91$ ,  $t(86) = -4.40$ ,  $p < .01$ ,  $\eta^2 = .02$ ). The critical finding was that implementers saw the low novelty idea as more creative than the high novelty idea ( $t(71) = -2.06$ ,  $p < .05$ ,  $\eta^2 = .14$ ), whereas generators saw the low novelty idea as less creative than the high novelty idea ( $t(101) = 6.08$ ,  $p < .01$ ,  $\eta^2 = .04$ ).

Regarding novelty, generators saw the low novelty idea as less novel ( $M = 4.57$ ) than implementers ( $M = 5.30$ ,  $t(86) = -2.31$ ,  $p < .05$ ,  $\eta^2 = .04$ ), but generators ( $M = 5.47$ ) and implementers ( $M = 5.29$ ) had comparable ratings of the high novelty idea ( $t(86) = .81$ ,  $p = ns$ ; see Figure 2,  $\eta^2 = .003$ ). Generators rated the high novelty idea as more novel than the low novelty idea ( $t(101) = 3.48$ ,  $p < .01$ ,  $\eta^2 = .07$ ), whereas implementers did not show a detectable difference ( $t(71) = -.06$ , ns,  $\eta^2 = .00$ ).

Regarding usefulness, implementers saw the high novelty idea as less useful ( $M = 5.36$ ) than generators ( $M = 5.79$ ,  $t(86) = 1.99$ ,  $p < .05$ ; see Figure 3,  $\eta^2 = .03$ ). Implementers also saw the low novelty idea as more useful ( $M = 5.95$ ) than generators ( $M = 5.53$ ,  $t(73) = -2.14$ ,  $p < .05$ ,  $\eta^2 = .02$ ). While generators saw no difference in the extent to which high ( $M = 5.79$ ) and low ( $M = 5.53$ ) novelty ideas were useful ( $t(101) = 1.49$ ,  $p = ns$ ,  $\eta^2 = .01$ ), implementers viewed the low novelty idea as more useful than the high novelty idea ( $t(71) = -2.41$ ,  $p < .05$ ,  $\eta^2 = .04$ ).

To further examine the relationship between roles, novelty and usefulness, and assessments of creativity, we conducted two parallel mediation analyses, one for each role, in which both novelty and usefulness were entered as possible mediators of creativity assessments (using the approach in Preacher, Rucker & Hayes, 2007). We found that for generators, there was an indirect effect of high and

low novelty ideas on creativity assessments through novelty (mean effect estimate = .57, SE = .205; 95% CI 1.025 to .225, i.e., does not include 0), but there was no indirect effect through usefulness (mean effect estimate = .05, SE = .04; 95% CI -.0061 to .166, i.e., includes 0). For implementers, we found the opposite pattern. There was evidence of an indirect effect of high and low novelty ideas on creativity assessments through usefulness (mean effect estimate = .098, SE = .064, 95% CI .0024 to .2598), but not through novelty (mean effect estimate = .0084, SE = .145; 95% CI -.287 to .289). Accordingly, generators' ratings of creativity seemed driven by novelty and implementers' ratings of creativity seemed driven by usefulness.

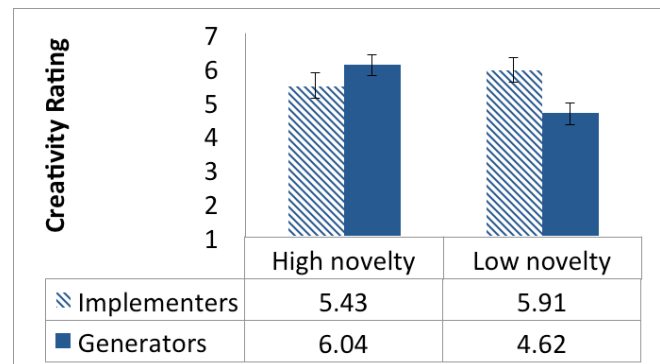


Figure 1. Means and 95% confidence intervals of creativity ratings by role (implementer, generator) and idea type (high novelty, low novelty), Experiment 1.

## Discussion

Adopting generator and implementer roles can lead people to form different assessments of creativity. Generators perceived a high novelty idea as more novel and creative but no more useful than a low novelty idea. This is consistent with the generator role evoking a lay theory that emphasizes novelty when assessing creativity. However, separating an effect of role-based expectancies from task demands driven by role instructions (we told generators to focus on novelty, and so they did) is challenging. We will present a better test of the generator role in Study 2.

The more striking pattern came from implementers, who assessed a high novelty idea as less useful and creative, but not more novel, than a low novelty idea. These data do not suffer from the same concern as the generator role data. Implementers were told to focus on usefulness, but they were not told to ignore novelty, and the ideas that they rated provided no direct information about usefulness. Thus, it is noteworthy that the implementers evaluated the high novelty idea as less useful than the low novelty idea, because it suggests that they were employing the lay theory that highly novel ideas are likely untested and risky and so lower in usefulness and lower in creativity.

## Experiment 2

Study 2 tested high and low usefulness ideas. The key prediction is that generators should assess a high usefulness idea as less novel and creative than a low usefulness idea, due to a lay theory that an idea high in usefulness indicates less novelty and so less creativity. Our account also predicts that implementers should assess the high usefulness idea as more useful and more creative than the low usefulness idea.

### Method

**Participants and Design** We recruited 161 participants from Amazon’s Mechanical Turk (64% male,  $M = 30.42$  years,  $SD = 12.17$ ). Participants had an average of 9.75 ( $SD = 10.62$ ) years of work experience. Participants were randomly assigned to one of four conditions of a 2 (role: generator, implementer) X 2 (idea usefulness: high, low) between-subjects design. Each cell contained more than 29 cases.

**Procedure and Materials** The only difference with Study 1 was the idea being rated. We used the high novelty idea from Study 1, so everyone rated an idea that was explicitly marked as being highly novel. We added that the idea was “cheap and easy to make” (in the high usefulness condition) or “costly and difficult to make” (in the low usefulness condition).

### Results

A multivariate ANOVA identified interactions between role (generator or implementer) and idea type (high or low usefulness) when predicting creativity ratings ( $F(1, 157) = 20.06, p < .01, \eta^2 = .11$ ) and novelty ratings ( $F(1, 157) = 8.51, p < .01, \eta^2 = .05$ ), but only a marginally significant trend for usefulness ratings ( $F(1, 157) = 3.10, p = .08, \eta^2 = .01$ ). Planned comparisons revealed a crossover interaction for creativity ratings (Figure 2). Generators rated the high usefulness idea as less creative ( $M = 5.14$ ) than implementers ( $M = 6.07, t(76) = -3.95, p < .01, \eta^2 = .10$ ; see Figure 4). Generators also rated the low usefulness idea as more creative ( $M = 5.88$ ) than implementers ( $M = 5.46, t(81) = 2.19, p < .05, \eta^2 = .03$ ). Implementers saw the high usefulness idea as more creative than the low usefulness idea ( $t(88) = 3.36, p < .05, \eta^2 = .06$ ), whereas generators recognized the low usefulness idea as more creative than the high novelty idea ( $t(69) = -2.96, p < .05, \eta^2 = .06$ ).

Regarding novelty and usefulness, generators saw the high usefulness idea as less novel ( $M = 4.97$ ) than implementers ( $M = 5.81, t(76) = -3.11, p < .05, \eta^2 = .06$ ), but generators ( $M = 5.61$ ) and implementers ( $M = 5.41$ ) gave comparable novelty ratings to the low usefulness idea ( $t(81) = .83, p = ns, \eta^2 = .004$ ; see Figure 5). Generators rated the low usefulness idea as more novel than the high usefulness idea ( $t(69) = -2.33, p < .05, \eta^2 = .04$ ), whereas implementers saw no difference ( $t(88) = 1.72, ns, \eta^2 = .02$ ). Also as expected, implementers viewed the high usefulness idea ( $M = 6.04$ ) as more useful than the low usefulness idea ( $M = 5.41, t(88) = 2.63, p < .05, \eta^2 = .04$ ; see Figure 6). Generators did not rate the high ( $M = 5.52$ ) and low ( $M =$

5.51) usefulness ideas reliably differently in usefulness ( $t(69) = .01, p = ns, \eta^2 = .00$ ).

For generators, we found evidence of an indirect effect of high and low usefulness ideas on creativity assessments through novelty (mean effect estimate = .35,  $SE = .176$ ; 95% CI .06 to .76), but there was no indirect effect through usefulness (mean effect estimate = -.002,  $SE = .09$ ; 95% CI -.129 to .218). For implementers, there was evidence of an indirect effect of high and low usefulness ideas on creativity assessments through usefulness (mean effect estimate = .12,  $SE = .063$ , 95% CI .028 to .282), but not through novelty (mean effect estimate = -.193,  $SE = .111$ ; 95% CI -.423 to .009). Once again, generators’ ratings of creativity seemed linked to novelty and implementers’ ratings of creativity seemed linked to usefulness.

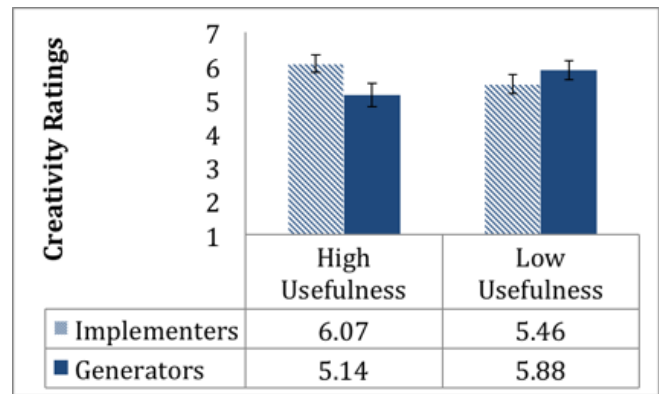


Figure 2. Means and 95% confidence intervals of creativity ratings by role (implementer, generator) and idea type (high usefulness, low usefulness), Experiment 2.

### Discussion

Study 2 found the complementary pattern to Study 1. Unsurprisingly, adopting the implementer role led people to rate the high usefulness idea as more useful and more creative than the low usefulness idea, although separating out role-based expectancies from task demand based on the role instructions is challenging. What is more clearly compelling though is that adopting the generator role led people to rate the high usefulness idea as less novel and less creative than the low usefulness idea. This occurred despite both ideas being described as completely new, which was the primary concern of the generator role. That high usefulness meant lower novelty for generators is consistent with our proposal that generator roles evoke a lay theory that high usefulness indicates a lesser challenge and deviation in practice and so a lower degree of creativity.

### General Discussion

The social roles used to distribute the process of innovation appear to lead to different assessments of creativity, the very issue on which people in those roles need to coordinate. The

generator role seemed to invoke lay theories that novelty is key to an idea being creative, and that highly useful ideas lack novelty. The implementer role seemed to invoke lay theories that usefulness is key to an idea being creative, and that highly novel ideas lack creativity because they are less useful.

A strength of the approach in these studies was that we ensured that there were no systematic knowledge differences by randomly assigning roles, as in practice role differences are likely confounded with knowledge differences. Knowledge differences could also, in addition to role-driven expectancies or other sets of goals, guide perceptions of novelty and usefulness, and alter creativity assessments. In additional exploratory data analyses, we also examined the possibility that work experience could have influenced responses. However, we found no signs of effects of years of work experience, nor did we find any signs of effects of whether or not participants had prior work experience in generator roles (about 30% did) or implementer roles (about 20% did). Thus, we have evidence that assigning individuals to roles led them to adopt the goals and perspective of those roles, and that individuals with and without actual work experience in the roles produced comparable assessments.

One theoretical possibility highlighted by these studies is that at least for complex categories, such as creativity, meanings may vary systematically in multiple ways. There are already good reasons to believe that category meanings are not fixed for speakers of the natural language but rather vary across cultural communities (Clark, 1996; Keller & Loewenstein, 2011). If the studies here generalize, then there may be further social fractionation in category meanings driven by roles. Of interest, just as individuals can code switch from one cultural vocabulary to another, they can also change roles. Thus, individuals' understandings and use of categories might shift systematically as they adopt different roles and identify with different communities. There are not just context effects but social context effects that draw on histories of experience and social interaction. Just because individuals generate their own understandings of categories does not imply that their understandings are constant, internally consistent, or driven by one goal or causal logic.

The effects of social roles on creativity also emphasizes the need for a more comprehensive theoretical account of social context on creativity assessments. This would go alongside work on the effects of social context on creative production (Amabile, 1983; Kim, Vincent, & Goncalo, 2012). Future work could examine whether situational factors apart from roles also guide creativity assessments. For example, situational uncertainty (Whitson & Galinsky, 2008) might activate the lay theory that highly novel ideas are not creative because they have uncertain use (cf., Mueller et al., 2012), and so guide creativity assessments.

The generator-implementer difference in creativity assessments that we found suggests a practical problem, because effective coordination hinges on mutual

understanding (Okhuysen & Bechky, 2009). If implementers and generators do not agree about which ideas are creative, this should lead to conflict, frustration and rejection. Apparently, the division of labor in the innovation process brings with it a division of cognitive labor that is not just about who knows what (Keil, Stein, Webb, Billings, & Rozenblit, 2010), but is also about perspectives and perhaps attitudes. Indeed, editors may select articles they view as "creative" but that researchers view as "same old, same old," whereas editors view that researchers often pursue "pie-in-the-sky" ideas without grounding them in existing methods. Governments may fund research projects that scientists think perpetuate existing paradigms rather than testing new ones, while grant decision-makers might view many scientists pursuing ideas with little practical value to society. Managers may view that designers generating new products focus on extremely cutting edge ideas that are too costly and expensive to produce at a profit, while the designers view that managers implement old and tired ideas to "make a buck." The result may well be a stubborn coordination challenge on the core task of generating and implementing creative ideas. Or, perhaps at different points in the innovation process, generators and implementers might consider adopting the perspective of the alternative role. Because the true paradox of this paper is that, ironically, both roles may be right.

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