

UNIVERSITY OF OKLAHOMA
GRADUATE COLLEGE

EFFECTIVE STRATEGIES FOR CREATIVE IDEA EVALUATION: THE CUSTOMER'S
ALWAYS RIGHT

A DISSERTATION
SUBMITTED TO THE GRADUATE FACULTY
in partial fulfillment of the requirements for the
Degree of
DOCTOR OF PHILOSOPHY

By
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Norman, Oklahoma
2020

EFFECTIVE STRATEGIES FOR CREATIVE IDEA EVALUATION: THE CUSTOMER'S
ALWAYS RIGHT

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF PSYCHOLOGY

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Abstract

Idea evaluation has been identified as a critical step in the creative problem-solving process. Yet, it is unclear how exactly individuals evaluate and compensate for weaknesses in their creative ideas. In the present study, both qualitative and quantitative methods were used to identify the compensatory strategies that undergraduate participants applied during the creative idea evaluation process. Additionally, the impact of the application of these strategies and the impact of leader feedback was examined on the production of high quality, original, and elegant solutions to a creative problem. Eleven compensatory strategies were identified and subsequently categorized as effective or ineffective based on their impact on the creative solutions developed. It was found that effective strategies were those that focused on improving product value with respect to the customer, and ineffective strategies were those that focused on profit and marketing strategy. It was also found that negative leader feedback reduced the application of ineffective compensatory strategies, and leader feedback that applied both innovative and operative standards led to the production of more original creative problem solutions. The implications of these findings for improving performance on creative tasks are discussed.

Keywords: creativity, creative problem-solving, idea evaluation, feedback, leadership, strategies

Effective strategies for creative idea evaluation:

The customer's always right

Creative problem-solving is a difficult process that is commonly fraught with error (Martin, Elliott, & Mumford, 2019). Only a few of the thousands of creative ideas generated are ever implemented, and those that are implemented often fail (Sharma, 1999). As a result, organizations engaging in creative efforts often impose strategies for compensation that are intended to improve creative ideas and the development of creative products. For example, formal procedures for managerial and peer feedback may be established as control systems to facilitate the improvement of creative ideas (Busco, Frigo, Giovannoni, & Maraghini, 2012; Ligon, Graham, Edwards, Osburn, & Hunter, 2011). Organizations, such as Google, use formal performance and incentive systems, as well as organizational cultural mantras such as “Googliness” to encourage a problem-solving mindset and a focus on improving upon creative ideas for the production of creative products (Steiber & Alänge, 2013). Substantial literature has been devoted to understanding these types of organizational strategies and their impact on creativity and innovation. However, it is less clear what strategies may be used in the creative problem-solving process to improve upon the development of creative ideas.

Creativity, the production of high quality, original, and elegant solutions (Besemer & O'Quin, 1998; Christiaans, 2002) to complex, novel, and ill-defined problems (Mumford & Gustafson, 2007), is a highly complex phenomenon that involves the execution of requisite processing activities. These creative problem-solving processes include processes such as problem definition, conceptual combination, idea generation, and idea evaluation (Mumford, Medeiros, & Partlow, 2012; Mumford, Mobley, Uhlman, Reiter-Palmon, & Doares, 1991; Isaksen & Treffinger, 2004). Historically, greater attention has been paid to processes such as

idea generation, with a common assumption that idea evaluation may not be as important or may even stifle the generation of creative ideas (Amabile, Goldfarb, & Brackfield, 1990; Cheek & Stahl, 1986; Diehl & Stroebe, 1987; Osborn, 1953; Shalley, 1995; Sosik, Kahai, & Avolio, 1998). However, in recent years, evidence has been provided to support that effective evaluation of creative ideas is critical to their success (Baer, 2003; Gibson & Mumford, 2013; Runco & Acar, 2012). Moreover, some evidence has been provided that idea evaluation may be even more important to creative problem-solving than idea generation (Basadur et al., 2000; Licuanan, Dailey, & Mumford, 2007).

In the execution of the various creative problem-solving processes, people apply knowledge (Hunter, Bedell-Avers, Ligon, Mumford, & Hunsicker, 2008; Rich & Weisberg, 2004), as well as certain strategies (Lonergan, Scott, & Mumford, 2004; Scott, Lonergan, & Mumford, 2005), that have been shown to influence the effectiveness of process execution and overall creative performance (Gibson & Mumford, 2013). For example, during the process of conceptual combination, different analogical reasoning strategies may be employed that contribute to effective execution of this process (Baughman & Mumford, 1995). It has also been proposed that during the idea evaluation process, people may employ different compensatory strategies that contribute to the production of more creative products (Lonergan, Scott, & Mumford, 2004; Mumford, Medeiros, & Partlow, 2012). Moreover, it has been suggested that people may be trained on the application of certain compensatory strategies in order to improve creative idea evaluation and the subsequent development of creative products (Mumford, Hunter, Eubanks, Bedell, & Murphy, 2007). However, these particular compensatory strategies have yet to be identified.

Identification of the compensatory strategies that people use in idea evaluation may be particularly beneficial in not only better determining how people go about evaluating creative ideas, but also how people compensate for weaknesses and improve upon creative ideas. Furthermore, the identification of these strategies may enable the examination of the effectiveness of the implementation of the various strategies, such that recommendations may be made as to which strategies should be used. As such, the purpose of the present effort is to identify these compensatory strategies and their effects on the development of creative ideas, as well as how other variables relevant to idea evaluation, such as supervisor feedback, impact this process.

Creative Idea Evaluation

Idea evaluation is the process of cognitively appraising ideas with respect to some set of standards and involves the consideration of the consequences of idea implementations (Watts et al., 2017). Multiple models of creative thinking have underscored the importance of idea evaluation (Isaksen & Treffinger, 2004), with perhaps one of the most widely accepted models of creative problem-solving placing idea evaluation as a key thinking process (Mumford et al., 1991). Mumford et al.'s (1991) model poses that eight core processes are involved in creative problem-solving: (1) problem definition, (2) information gathering, (3) concept selection, (4) conceptual combination, (5) idea generation, (6) idea evaluation, (7) implementation planning, and (8) solution monitoring. Evidence across a variety of studies has provided support for the validity of this model and the significance of the application of creative problem-solving processes, such as idea evaluation (Licuanan, Dailey, & Mumford, 2007; Lonergan, Scott, and Mumford, 2004; Marcy and Mumford, 2010; Mumford, Baughman, Supinski, & Maher, 1996; Mumford, Supinski, Threlfall, & Baughman, 1996).

Relative to the present effort, Mumford et al.'s (1991) model highlights the importance of idea evaluation to creative problem-solving. Studies following this model have provided substantial support for the importance of the evaluation of creative ideas (Greenberg, 1992; Runco & Chand, 1994; Runco & Smith, 1992; Shalley, 1995). For example, in a study examining participants' idea evaluation skill applied to creative business problems, it was found that divergent thinking was strongly positively related to idea evaluation ($r = .56$), suggesting that idea evaluation is strongly related to creative thinking (Basadur et al., 2000). More recent work on creative idea evaluation has shifted focus to examine how people go about evaluating creative ideas. Findings from these studies have illuminated a number of variables that may impact the effectiveness of idea evaluation. Specifically, a variety of studies have pointed to biases that people apply and errors that people make when they engage in idea evaluation.

For example, Blair and Mumford (2007) examined preferences in idea appraisal. In this study, people were asked to assume the role of a review panel member making decisions regarding whether proposals submitted to a nonprofit agency should receive funding. The content of the proposals was varied to reflect attributes of new ideas of concern in evaluation (e.g., risk, originality, benefits to others). It was found that people commonly made errors in their evaluations, as people tended to be positively biased toward ideas that were easy to understand, provided short-term benefits, and were consistent with extant social norms. In other words, people tended to discount original, risky, and time-consuming ideas, which are the types of ideas that are most likely to lead to creative problem solutions.

In another study on creative idea evaluation, Licuanan, Dailey, and Mumford (2007) investigated errors with regard to the evaluation of highly original ideas. In this study, undergraduate participants evaluated the originality of marketing campaigns with various levels

of originality. It was found that participants preferred ideas of low originality and discounted ideas of high originality. Moreover, it was found that people tended to discount highly original ideas because they lacked requisite knowledge structures for accurately recognizing the originality of new ideas.

In a related study on idea evaluation, Gibson and Mumford (2013) examined the value of criticism by others of creative ideas. In this study, undergraduate participants were asked to provide advertising campaigns for a new clothing line, where solutions were evaluated for quality, originality, and elegance. Before preparing their campaigns, participants were presented with a set of candidate ideas and asked to critique these ideas. It was found that those who provided a limited number of deep criticisms of candidate ideas produced the most creative problem solutions. However, effective criticism of ideas was inhibited by problem complexity, suggesting that people are more likely to make errors in idea evaluation when ideas are highly complex.

These studies all point to ways in which people may not perform optimally when evaluating creative ideas. With these study findings in mind, the question becomes: how can people more effectively evaluate creative ideas? Potential answers may be found in the literature on the skills relevant to idea evaluation. Forecasting, idea appraisal, idea revision, and compensatory skill have been identified as skills that may contribute to the effective evaluation of creative ideas (Mumford, Todd, Higgs, & Elliott, 2018; Watts et al., 2017).

Forecasting skill relates to the envisioning of potential outcomes resulting from different actions that may be taken (Byrne, Shipman, & Mumford, 2010). Studies have provided evidence supporting forecasting as a skill that may help people better evaluate the implications of ideas and formulate more viable plans for the implementation of creative ideas (Byrne, Shipman, &

Mumford, 2010; Shipman, Byrne, & Mumford, 2010). Moreover, certain forecasting strategies have been identified and examined with respect to their impact on creative performance (Osburn & Mumford, 2006; Todd, Higgs, & Mumford, 2019).

Idea appraisal and idea revision are also key skills related to idea evaluation. Idea appraisal involves identifying relevant standards by which ideas will be judged (Loneragan, Scott, & Mumford, 2004; Mumford, Loneragan, & Scott, 2002). Skill in appraisal, in particular, is informed by the accurate selection of appropriate standards, or criteria, which may be facilitated by careful consideration and understanding of project goals. In the application of forecasting and idea appraisal skills, limitations in creative ideas may be identified (Barlow, 2000). Idea revision is the skill which involves addressing those limitations (Mumford, Loneragan, & Scott, 2002). More specifically, idea limitations act as target areas for which solutions may be generated to revise and refine ideas (Watts et al., 2017). Studies by Loneragan, Scott, and Mumford (2004) and Runco and Smith (1992) have provided additional evidence supporting the importance of idea appraisal and idea revision to creative idea evaluation.

The final skill relevant to creative idea evaluation is compensatory skill, which relates to compensating for deficiencies in ideas. Compensatory skill has received less attention in the literature, with only one empirical study investigating this skill. In a study on creative idea evaluation, Loneragan, Scott, and Mumford (2004) asked 148 undergraduate participants to develop advertising campaigns for Redmond, Mumford, and Teach's (1993) 3D holographic television task. Participants were asked to assume the role of a manager evaluating ideas from teams for which they were responsible, after which participants would prepare their final campaign. Participants' final campaigns were evaluated by judges for quality, originality, and elegance. Teams' ideas, drawn from Redmond, Mumford, and Teach (1993), were either of high

quality or high originality. Participants were instructed to appraise these ideas with respect to either innovative standards or operative standards. It was found that the most creative advertising campaigns were generated by participants when highly original ideas were appraised with respect to operative standards and when high quality ideas were appraised with respect to innovative standards. These findings suggest that idea evaluation seeks not only to identify the best ideas, but also to compensate for deficiencies in ideas. Thus, it was concluded that idea evaluation is in part dependent on the skill in formulating strategies for compensating for deficiencies in ideas, compensatory skill.

Subsequent reviews of key skills for creative problem-solving and leader creative problem-solving have also indicated that compensatory skill may be particularly important. For example, Mumford et al. (2007) suggested leaders may be developed to lead creative efforts by being provided training in viable strategies for the evaluation of new ideas, including strategies relative to compensatory skill. Moreover, Mumford et al. (2018) proposed that, in addition to idea appraisal skill, idea evaluation is dependent on skill in formulating strategies for compensating for deficiencies in ideas. Therefore, there is initial support for compensatory skill as a key skill impacting the effectiveness of idea evaluation. Yet, evidence examining compensatory skill is very limited and no attempt has been made to identify the compensatory strategies through which compensatory skill has been proposed to be manifested. As such, the first goal of the present effort was to identify these strategies. Additionally, given the proposed positive impact that compensatory strategies may have on the development of creative ideas, the second goal of the present effort was to identify the effects the application of compensatory strategies have on creative problem-solving. Thus, the following questions were asked:

RQ1: What strategies do people use in idea evaluation when compensating for idea deficiencies?

RQ2: What impact does the application of compensatory strategies have on creative problem-solving?

Feedback

Relevant to the discussion of compensatory strategies and idea evaluation is feedback. Notably, organizations often have formal or semi-formal feedback procedures established that operate as control systems to facilitate the evaluation and improvement of ideas (Halloran, 2008; Keating & Oliva, 2000; Kim & Hamner, 1976). Organizations focused on creativity and innovation, in particular, may impose these feedback systems to facilitate the improvement of creative ideas (Busco, Frigo, Giovannoni, & Maraghini, 2012; Ligon, Graham, Edwards, Osburn, & Hunter, 2011). Indeed, in real-world settings, external evaluation imposed by these systems is common and may be as important on the impact of the development of ideas as internal idea evaluation (Shalley, 1995).

A common way in which external feedback is provided is via supervisor or leader feedback. Like the assumptions regarding creative idea evaluation, external evaluation via leader feedback has also been held to inhibit creative thought; however, the impact of leader evaluation on follower creativity may be effective depending on how the leader provides this feedback (Mumford, Higgs, Todd, & Martin, 2019). There are few studies investigating leader feedback on follower creativity, but the studies that have been conducted provide some support for this proposition. Andrews and Farris (1967) and Farris (1972), for example, have found that leader feedback is a strong predictor of team innovative performance. Reviews of performance management and creativity have also proposed that certain leader feedback variables may be particularly important to follower creative performance. Ligon, Graham, Edwards, Osburn, and

Hunter (2012) stated that leaders of creative efforts may be more effective at feedback giving when they are trained for practices in innovation, delivering technical and compensatory feedback, administering rewards, and devising developmental plans. Additionally, Watts et al. (2017) proposed that the content, timing, and delivery of leader feedback are key. More specifically, it was proposed that leader feedback should use a compensatory approach with respect to the standards of the creative problem, feedback should not be provided too early in the creative problem-solving process, and feedback should be attuned to social skills given the typically more sensitive personalities of creative people.

Feedback standards. Notably, the aforementioned reviews of leader feedback have stressed compensatory feedback as particularly important to leader feedback giving. The importance of compensatory feedback is underscored by Lonergan et al.'s (2004) discussion of compensatory skill, which related that feedback is likely to have its greatest impact when feedback compensates for weakness in peoples' creative ideas with respect to innovative and operative standards. Extending this point, if leaders apply the wrong standards in idea appraisal, feedback may be considered irrelevant by followers or even inhibit followers' revision of creative ideas (Watts et al., 2017). Put differently, if feedback given speaks to the wrong standards, people may be less effective in employing compensatory skill and compensatory strategies because they may not appropriately identify what factors to compensate for.

Feedback valence. Another feedback variable relevant to creative idea evaluation is feedback valence. Although this variable has been commonly discussed in the general feedback literature (London & Mone, 2015), it has received less attention with regard to creative performance and leadership. Findings regarding feedback valence in the general feedback literature are mixed. Conclusions from a meta-analysis and historical review on feedback

interventions were that the magnitude and direction of the effects of feedback valence on performance were inconsistent, with this relationship often being contingent on a variety of factors (Kluger & DeNisi, 1996). A study by Zhou (1998) examining feedback valence and creative performance also found that the relationship between these two variables was dependent on other factors. More specifically, Zhou (1998) examined the interactive effects of feedback valence, feedback style, and task autonomy on creative performance. Results demonstrated that these three variables interacted to affect creative performance, such that individuals who received positive feedback (as opposed to negative feedback) delivered in an informational style (as opposed to a controlling style), and who worked in a high (as opposed to low) task autonomy work environment generated the most creative ideas to a problem-solving task. Thus, in order to understand the impact of feedback valence on creative performance, it may be important to take into account other feedback variables.

Given the potential impact that the standards spoken to in leader feedback may have on follower creative idea evaluation, it was proposed to examine the impact of feedback valence in tandem with feedback standards in order to assess the impact of these feedback variables on creative performance. Subsequently, the following questions were asked:

RQ3: How does feedback valence and the standards spoken to in leader feedback impact the compensatory strategies followers use during idea evaluation?

RQ4: How does feedback valence and the standards spoken to in leader feedback impact the production of solutions to creative problems?

Method

Sample

The sample used to examine the research questions consisted of 294 undergraduate students attending a large southwestern university. The 97 men and 197 women who agreed to participate in this study were recruited from undergraduate psychology classes providing extra-credit for participation in experimental studies. Those seeking extra-credit reviewed a brief, one paragraph description of all studies currently seeking participants. Based on this information, students selected the studies in which they wished to participate. Those who agreed to participate in the present study had an average age of 19 years. Their average grade point average was 3.5, and they had an average ACT score of 25.6. Participants also had roughly 2.5 years of work experience.

General Procedure

Participants were recruited to take part in what was purported to be a study of complex problem-solving. During the first 30 minutes of this two-and-a-half-hour study, participants were asked to complete a set of timed covariate control measures. During the next 30 minutes, participants, performance worked on the experimental task. This task was a low-fidelity creative problem-solving exercise (Motowidlo, Dunnette, & Carter, 1990), in which participants were first asked to create an initial marketing plan for an innovative clothing company looking to expand to a new market. Following the development of their initial plans, participants received feedback from their purported supervisor in a pre-generated email. Feedback received was randomly assigned. Feedback was either positive or negative in valence, and feedback received spoke to innovative, operative, or both innovative and operative standards. After receiving feedback, participants engaged in an idea evaluation exercise. In this exercise, participants were asked to review their initial plans and consider the feedback they received in order to identify

any deficiencies and/or weaknesses in their plans. Participants recorded their responses in paragraph form. Following this exercise, participants were asked to develop a final marketing plan and to write this plan as a new draft to be presented to reviewers who had not read the first draft. Finally, participants completed a battery of untimed covariate control measures.

Both the initial and final plans were appraised by trained judges for quality, originality, and elegance. Participants' responses to the idea evaluation activity were content-coded, and a qualitative analysis was conducted in order to identify the compensatory strategies participants used. Once these strategies were identified, participants' responses to the idea evaluation activity were appraised by trained judges for the extent to which each strategy was applied.

Covariate Controls

The first set of control measures employed were intended to take into account the effects of intelligence, divergent thinking, and expertise on creative problem-solving. To measure intelligence, participants were asked to complete the verbal reasoning measure in the Employee Aptitude Survey (EAS). This 30-item measure presents a set of facts bearing on a problem. People are asked to indicate whether a subsequent answer is true, false, or unknown given these facts. This measure yields retest reliabilities above .80, and evidence bearing on the validity of this measure has been provided by Grimsley, Ruch, Warren, and Ford (1985) and Ruch and Ruch (1963).

Given the nature of the creative problem-solving task, divergent thinking was measured using Merrifield, Guilford, Christensen, and Frick's (1962) Consequences measure. The Consequences measure asks people to generate ideas reflecting the outcomes of unlikely events such as "what would be the consequences if people no longer wanted or needed sleep?" People are asked to list as many consequences they can think of for 5 such events in 10 minutes. When scored for fluency, or the number of consequences generated, this measure yields internal

consistency coefficients above .70. Evidence of construct validity and predictive validity have been provided by Merrifield et al. (1962) and Vincent, Decker, and Mumford (2002).

Expertise was also assessed using Gibson and Mumford's (2013) measure of marketing expertise. This untimed measure presents background data questions (Mumford & Owens, 1987) examining engagement in advertising, or marketing, evident earlier in people's lives – for example “How often have you discussed current advertisements with your friends” or “How often have you thought about how you could make advertisements better.” These self-report items are scored on a five-point scale reflecting the frequency, or intensity, of the behavior. The resulting scale produces internal consistency coefficients of about .70. Gibson and Mumford (2013) have provided evidence bearing on the validity of this measure of marketing expertise.

Due to the nature of the creative problem-solving task, a planning task, participants were asked to complete Marta, Leritz, and Mumford (2005)'s measure of planning skills. This measure provides scales intended to measure 1) identification of key causes, 2) identification of restrictions, 3) identification of downstream consequences of actions, 4) use of opportunistic implementation strategies, and 5) environmental scanning. To measure these skills, people are presented with six scenarios drawn from the management literature. Following a scenario, people are presented with 5 or 6 questions bearing on the various planning skills. These questions are followed by a set of 8 to 12 response options that reflect more or less effective application of the planning skills under consideration. People are asked to select their two or three preferred options from the list of response options provided. The measure is scored for the number of effective options selected. This measure yields a split-half reliability in the low .80s. Evidence bearing on the construct and predictive validity of the measure has been provided by Marta, Leritz, and Mumford (2005) and Osburn and Mumford (2006).

Performance in solving creative problems also requires motivation. Accordingly, participants were asked to complete Petty, Cacioppo, and Kao's (1984) Need for Cognition scales. This 18-item self-report scales asks people to describe behavior with respect to intellectually challenging tasks on a 5-point rating scale. For example, one item people are asked to appraise states "the notion of abstract thinking is appealing to me." This scale yields internal consistency coefficients in the .80s. Construct validity evidence for this measure has been provided by Cacioppo and Petty (1982).

The final covariate control measure participants were asked to complete was an assessment of personality characteristics. Participants were asked to complete Gill and Hodgkinson's (2007) five-factor model questionnaire to provide scales measuring neuroticism, agreeableness, extraversion, conscientiousness, and openness. When completing this measure, people are presented with 100 adjectives (e.g., kind, critical, artistic) and are asked to rate how accurately these adjectives describe them on a 9-point scale. The resulting scales for measuring these five global personality characteristics all yield internal consistency coefficients in excess of .80. Evidence pointing to the validity of the measure has been provided by Gill and Hodgkinson (2007) and Mumford, Hester, Robledo, Peterson, Day, Hougen, and Barrett (2012).

Experimental Task

The experimental task asked participants to assume the role of a mid-level marketing manager working for a clothing firm, Charamousse. Participants were then asked to produce a written marketing campaign which would be presented to senior management. After reading a brief introduction, participants were presented with background material about the firm. This background material provided a history of the firm, including information relating that the firm had been founded in 1998 with the intention of providing original, unique, clothing through sustainable production practices. It was noted each shirt produced by the firm was based on a

limited run, individually numbered, so buyers had a unique product. The firm was said to have 14 stores across the Midwest typically in malls and high profile locations in metropolitan areas. All stores were in refurbished, renovated spaces, in keeping with the firm's vision.

Following this description of the firm's history, the current situation confronting the firm was described. It was noted that the firm's revenue had grown significantly in the early 2000's until 2015 due to the support of high-profile celebrities. However, since 2015, firm growth had slowed. To address this issue, the firm had decided to expand its operations to a new market in the southern United States. It was then stated that the participant's assumed position had been recently hired to help the firm formulate this southern marketing campaign.

After reviewing this introductory material, participants were presented with a summary describing the firm's extant markets. This marketing research summary indicated most buyers were upwardly mobile young adults who spend a sizeable portion of their income on clothes. Most customers were college graduates earning approximately \$60,000 per year with an interest in exercise and yoga, as well as charity work. Although the firm is well known in the Midwest, it is relatively unknown in the southern United States. Similar firms included Apple and Odwalla, and competitors were other high-end design firms. Figure one presents this market research summary.

INSERT FIGURE 1 ABOUT HERE

After participants reviewed the background material, they were presented with an email from their purported supervisor requesting them to develop a clear marketing plan for how the company could successfully enter the new market.

Following the submission of participants' initial marketing plan, participants received feedback from their purported supervisor and then were asked to engage in an idea evaluation exercise. More information regarding supervisor feedback may be found in the Manipulations section below. Participants were asked to consider the feedback they received, as well as their own review of their initial plan, and identify any deficiencies and/or weaknesses in their plan. Participants' responses to this exercise served as the basis for the identification and appraisal of compensatory strategies.

After completing the idea evaluation exercise, participants were asked to develop a final marketing plan. Specifically, participants were asked to consider the idea deficiencies they identified regarding their initial plan. Then, they were to write a new marketing plan to be presented to reviewers who had not read their initial plan.

Manipulations

Feedback valence. Prior studies (e.g., Zhou, 1998) have indicated the performance on creative problem-solving tasks may be impacted by the valence of feedback received.

Accordingly, the valence of the feedback participants received from their purported supervisor was manipulated, such that participants received either positive or negative feedback. Positive feedback included statements such as "I'm quite impressed," "Your ideas are excellent and definitely on the right track," and "I'm excited to continue to review your work." Negative feedback included statements such as "I'm disappointed" and "Your ideas aren't what I hoped for them to be."

Feedback standards. Prior studies on idea evaluation (e.g., Lonergan et al., 2004) have also indicated that the standards by which ideas are appraised impacts creative idea evaluation, such that the implementation of innovative or operative standards in idea appraisal may impact how people approach creative problem-solving. As such, the standards spoken to in the feedback

received by participants' purported supervisor were manipulated. Specifically, participants received feedback that spoke to innovative standards, operative standards, or both innovative and operative standards. Feedback that spoke to innovative standards asked participants to consider the originality, adaptability, long-term viability, and benefits of the plan. Feedback that spoke to operative standards asked participants to consider the quality, persuasion difficulty, short-term gains, and potential for risk minimization of the plan. The list of these innovative and operative standards used were drawn from Lonergan et al. (2004).

In total, there were six conditions. The feedback each participant received was randomly assigned and provided in a pre-generated email following the completion of the initial marketing plan. Figure two provides an example of one condition, in which participants received positive feedback that spoke to innovative standards.

INSERT FIGURE 2 ABOUT HERE

Variables

Compensatory Strategies. To identify compensatory strategies, a qualitative analysis was conducted of participants' responses to the idea evaluation exercise based on qualitative techniques used by Kligyte et al. (2008). First, a random sample of 20 responses from each feedback valence condition was drawn. Two psychologists familiar with the literature on creative problem-solving individually reviewed these participants' responses and categorized the information presented into apparent themes. Initial themes included themes such as focusing on the customer, focusing on internal resources, and focusing on external resources. Once themes started to emerge, information became denser, which enabled the identification of more specific themes, such as customer values, customer expansion, company values, and financial

consideration. Next, the two psychologists met to compare notes and discuss findings to ensure accuracy of considered information and to reach consensus regarding identified themes. Once consensus was met, themes were reworded using active verbs (e.g., consider, apply, assess) to represent a particular strategy, such as assessment of market competition. After strategies were identified, descriptive titles and definitions were generated for each strategy. During this process, any overlap between strategies was minimized. Additionally, it was ensured that each strategy retained original linkages to statements from participant responses, and each strategy had linkages to at least twenty participant responses. Consensus was reached on each strategy title and definition. Next, the two psychologists met with a third psychologist familiar with the literature on creative problem-solving in order to review and discuss the list of strategies and definitions. After consensus was achieved, this list of strategies was retained.

Following the identification of the list of compensatory strategies, each strategy was rated for the extent of application in participants' responses to the idea evaluation exercise. Each strategy was rated by 3 trained doctoral student judges on a 5-point rating scale. Each rating scale provided a concrete operational definition of the strategy, along with an example statement illustrating how this strategy would be evident in participant responses.

Prior to making these ratings, judges were asked to complete a 5-hour training program. At the outset of this training, judges were familiarized with the general nature of creative idea evaluation. They were then presented with a description of each strategy and how each strategy might influence performance on various problem-solving tasks. Subsequently, judges were asked to apply the rating scales to evaluate the strategies evident in a set of participant responses. After judges made these ratings, they were convened as a panel and asked to discuss and resolve

observed discrepancies in their ratings. Following this instruction and practice, the average inter-judge agreement coefficients obtained for evaluations of the strategies was .88.

Creative Problem-solving. Prior studies by Besemer and O'Quin (1998) and Christaans (2002) have indicated that solutions to creative problems are characterized by three dimensions: quality, originality, and elegance. Accordingly, to assess performance on the development of both the initial and final marketing plans, a panel of 3 judges rated the quality, originality, and elegance of the written plans on a 5-point scale. These judges were all doctoral students in psychology familiar with the creativity literature. Quality was defined as a complete, coherent, potentially useful plan. Originality was defined as an unexpected and surprising plan. Elegance was defined as a plan where parts flowed well together in a clear, refined way.

Based on the findings of Redmond, Mumford, and Teach (1993), these ratings were to be made with respect to a set of benchmark rating scales. On these benchmark scales, appraisals of plan quality, originality, and elegance were to be made with respect to illustrations of these attributes as reflected in marketing plans provided by undergraduates. To develop these benchmark rating scales, a sample of 40 plans was obtained and a panel of judges rated these plans for quality, originality, and elegance on a 5-point scale. Subsequently, plans evidencing high and low levels of quality, originality, and elegance where judges evidenced good agreement and low standard deviations in their appraisals were identified. These plans were then extracted and used to provide scale anchors. An examples of the rating scales used in the present study may be found in Figure 3.

INSERT FIGURE 3 ABOUT HERE

Prior to making these ratings, judges were asked to participate in a 5-hour training program. In this training program, judges were familiarized with the marketing plan task, along with the definitions of plan quality, originality, and elegance. Judges were then presented with the behavioral rating scales for appraising quality, originality, and elegance, and they were asked to apply these rating scales in appraising a set of marketing plans. After making these ratings, judges met to discuss and resolve any discrepancies in their ratings.

Following training, the inter-judge agreement coefficients obtained for evaluations of plan quality, originality, and elegance were .85, .81, and .85, respectively. Examination of the correlations of these ratings with the covariate control measures also provided some evidence for their construct validity. Thus, divergent thinking was found to be significantly positively related to ratings of initial plan originality ($r = .17$) and initial plan quality ($r = .23$). Ratings of initial plan elegance were found to be positively related to openness ($r = .20$).

Analyses

First, the qualitative analysis was conducted in order to identify the list of compensatory strategies. Following obtaining ratings of the extent of application of each strategy and the quality, originality, and elegance of initial and final plans, these variables were correlated with each other. Three additional variables were also computed representing the change in quality, originality, and elegance from initial to final plans. These variables were computed by calculating the difference between final plan and initial plan quality, final plan and initial plan originality, and final plan and initial plan elegance. Correlations examining the compensatory strategies with the difference between final and initial plan quality, originality, and elegance were also examined. Strategies that were positively related to the difference between quality, originality, and elegance were categorized as “effective compensatory strategies” and were aggregated into one variable. Similarly, strategies that were not related or negatively related to

the difference between quality, originality, and elegance were categorized as “ineffective compensatory strategies” and were aggregated into one variable.

In the next set of analyses, a set of hierarchical regressions were conducted to examine the impact of the compensatory strategies on final plan quality, originality, and elegance. Then, analysis of covariance tests examining the impact of the feedback manipulations on the compensatory strategies and the impact of the feedback manipulations of final plan quality, originality, and elegance were examined.

Results

Compensatory Strategy Identification

The qualitative analysis resulted in the identification of eleven compensatory strategies, which are as follows: (1) novelty consideration, (2) company values, (3) customer values, (4) customer expansion, (5) idea completeness, (6) financial consideration, (7) short-term vs. long-term consequences, (8) external support, (9) marketing strategy, (10) product expansion, and (11) market competition. The list of strategies and definitions of each strategy may be found in Table 1. Additionally, an example of the application of each strategy is provided. These examples are drawn from participant responses.

INSERT TABLE 1 ABOUT HERE

Effective and Ineffective Compensatory Strategies

In order to determine which compensatory strategies led to improvements in participants’ creative problem solutions, correlations were run to examine the impact of the compensatory strategies used on the change of quality, originality, and elegance from final to initial plans. Strategies that were positively related to the difference between quality, originality, and elegance

were categorized as “effective compensatory strategies” and were aggregated into one variable. In order to be categorized as an effective compensatory strategy, a strategy needed to be positively correlated with at least two of the three difference variables and have no significant negative correlation with any of the difference variables. The effective compensatory strategies included novelty consideration, company values, customer values, idea completeness, short vs. long-term consequences, and market competition. Novelty consideration was found to be positively related to the improvement of original ($r = .08$) and elegant ($r = .03$) solutions. Company values was found to be positively related to the improvement of high quality ($r = .11$), original ($r = .04$) and elegant ($r = .06$) solutions. Customer values was found to be positively related to the improvement of high quality ($r = .08$) and original ($r = .01$) solutions. Idea completeness was found to be positively related to the improvement of high quality ($r = .07$), original ($r = .14$) and elegant ($r = .09$) solutions. Short vs. long-term consequences was found to be positively related to the improvement of elegant ($r = .01$) solutions. Market competition was found to be positively related to the improvement of high quality ($r = .13$), original ($r = .03$) and elegant ($r = .05$) solutions.

Strategies that were not related or significantly negatively related to the difference between quality, originality, and elegance were categorized as “ineffective compensatory strategies” and were aggregated into one variable. The ineffective compensatory strategies included customer expansion, financial consideration, external support, marketing strategy, and product expansion. Customer expansion was found to be unrelated to improvements in quality ($r = .00$) solutions and negative related to improvements in original ($r = -.06$) and elegant ($r = -.06$) solutions. Financial consideration was found to be negatively related to improvements in quality ($r = -.09$), original ($r = -.14$) and elegant ($r = -.06$) solutions. External support was found to be

negatively related to improvements in quality ($r = -.03$), original ($r = -.04$) and elegant ($r = -.04$) solutions. Marketing strategy was found to be negatively related to improvements in original ($r = -.06$) and elegant ($r = -.05$) solutions. Product expansion was found to be unrelated to improvements in quality ($r = .00$) and negatively related to improvements in original ($r = -.03$) solutions.

After aggregating the compensatory strategies into effective and ineffective compensatory strategy variables, correlations were examined. Effective compensatory strategies were positively related to the difference between quality ($r = .12$), originality ($r = .08$), and elegance ($r = .09$) of creative problem solutions. Ineffective compensatory strategies were negatively related to the difference between quality ($r = -.03$), originality ($r = -.11$), and elegance ($r = -.06$) of creative problem solutions. These consistent findings regarding the positive relationship between effective strategies and quality, originality, and elegance, and the negative relationship between ineffective strategies and quality, originality, and elegance support the categorization of effective and ineffective strategies into their respective categories.

The correlation matrix may be found in Table 2. The list of effective and ineffective strategies may be found in Table 3.

INSERT TABLE 2 ABOUT HERE

INSERT TABLE 3 ABOUT HERE

Table 4 presents the results obtained when final plan quality, originality, and elegance ratings were regressed on the prevalence of effective and ineffective compensatory strategies, after taking into account the various covariate controls. For final plan quality, the covariate controls produced a multiple correlation of .03, which significantly increased to .10 when the effective and ineffective compensatory strategies were added. Effective compensatory strategies ($\beta = .21, p < .01$) produced a significantly larger regression weight than the ineffective compensatory strategies ($\beta = .10, p = .08$). In accounting for solution originality, the covariate controls produced a multiple correlation of .02, which increased to .03 when the effective and ineffective compensatory strategies were added. Again, the effective compensatory strategies ($\beta = .12, p \leq .05$) produced a larger regression weight than the ineffective compensatory strategies ($\beta = .02, p = .80$), although these regression weights were not significant. When elegance was regressed on the covariate controls, a multiple correlation of .03 was obtained, which significantly increased to .07 when the effective and ineffective compensatory strategies were added. The effective compensatory strategies ($\beta = .22, p < .01$) again yielded a larger regression weight than the ineffective compensatory strategies ($\beta = -.01, p = .84$). These findings support that the use of these effective compensatory strategies leads to improvements in creative problem solutions over the use of ineffective compensatory strategies.

INSERT TABLE 4 ABOUT HERE

Feedback

In order to examine the impact of the experimental manipulations on the occurrence of effective and ineffective compensatory strategies, an analysis of covariance was run. The results of this analysis may be found in Table 5. In accounting for the occurrence of effective

compensatory strategies, expertise ($F, 1, 287$), $14.20, p < .01, n^2 = .05$) proved to be positively related to the expression of effective compensatory strategies. These findings indicate that people need to have adequate knowledge and experience in order to apply effective compensatory strategies. However, feedback did not have a significant effect on effective compensatory strategies.

Turning to ineffective compensatory strategies, expertise ($F, 1, 285$), $7.20, p \leq .01, n^2 = .03$), divergent thinking ($F, 1, 285$), $4.59, p < .05, n^2 = .02$), and neuroticism ($F, 1, 285$), $3.86, p \leq .05, n^2 = .01$) proved to be significant covariates. A significant main effect ($F, 5, 285$), $3.11, p < .01, n^2 = .05$) was also obtained for the type of feedback provided. It was found that positive feedback that applied both innovative and operative standards resulted in the use of more ineffective compensatory strategies ($m = 2.07, SE = .07$), as compared to positive feedback that applied innovative standards ($m = 2.00, SE = .08$) or positive feedback that applied only operative standards ($m = 1.97, SE = .07$). Negative feedback that applied innovative standards resulted in the use of the least amount of ineffective compensatory strategies ($m = 1.71, SE = .07$), with negative feedback applying operative standards ($m = 1.88, SE = .07$) and negative feedback applying both innovative and operative standards ($m = 1.82, SE = .07$) resulting in the use of more ineffective compensatory strategies. Notably, regardless of the feedback standards applied, those receiving negative feedback applied less ineffective compensatory strategies than those receiving positive feedback. Apparently, negative feedback results in the use of less ineffective compensatory strategies.

INSERT TABLE 5 ABOUT HERE

Next, the question becomes: how does feedback impact creative problem solutions?

Table 6 presents the results obtained in the analysis of covariance intended to provide an initial answer to this question.

In order to examine the impact of feedback on the quality, originality, and elegance of final creative problem solutions, a set of analysis of covariance was run. The results of this analysis may be found in Table 6. In accounting for the production of higher quality final solutions, intelligence ($F, 1, 287$), $8.91, p < .01, n^2 = .03$) was the only significant predictor, indicating that those with higher intelligence produced higher quality creative solutions. However, feedback ($F, 1, 287$), $1.10, p = .36, n^2 = .02$) did not have a significant impact on solution quality.

Examining the impact of feedback on final solution originality, no covariates were found to be significant. However, a significant main effect ($F, 1, 287$), $1.56, p \leq .05, n^2 = .04$) was obtained for feedback impacting originality. In examining the cell means, it was found that negative feedback that applied both innovative and operative standards ($m = 3.16, SE = .12$) led to the production of the most original final problem solutions, as opposed to negative feedback that applied innovative standards ($m = 2.83, SE = .12$), negative feedback that applied operative standards ($m = 2.71, SE = .11$), positive feedback that applied both innovative and operative standards ($m = 2.95, SE = .12$), positive feedback that applied innovative standards ($m = 2.83, SE = .13$), and positive feedback that applied operative standards ($m = 2.67, SE = .12$). Notably, regardless of feedback valence, those receiving feedback that spoke to both innovative and operative standards produced the most original final problem solutions. These findings suggest that feedback that applies both innovative and operative standards may encourage the

development of more original creative problem solutions, with negative feedback applying those standards resulting in the most original solutions.

With respect to the elegance of the final creative problem solutions, both intelligence (F, 1, 286), 6.11, $p \leq .01$, $n^2 = .02$) and divergent thinking (F, 1, 286), 6.19, $p \leq .01$, $n^2 = .02$) produced significant effects. However, feedback (F, 1, 286), 1.54, $p = .18$, $n^2 = .03$) did not have a significant effect on final solution elegance.

INSERT TABLE 6 ABOUT HERE

Discussion

Before discussing the broader conclusions of the present effort, certain limitations should be noted. First, the present investigation was based on a classic experimental paradigm where undergraduates served as study participants. As a result, the question arises as to whether findings will generalize to other populations working in real-world settings or with substantially more experience working in the marketing domain. Thus, studies examining different samples and different domains is warranted to provide external validity evidence for the present effort's findings.

Along related lines, one point that should be noted is that the compensatory strategies identified are behavioral, rather than cognitive, strategies that may be delimited to the specific task domain. While the strategies identified may apply to other domains and contexts, because these behavioral strategies were only examined within the context of a marketing task, there may be different and additional strategies that apply in other domains. Moreover, the effects of these

strategies may differ dependent on the task domain. Therefore, future studies should investigate the compensatory strategies used in different domains and their effects.

Certain limitations should also be taken into account with regard to the feedback manipulation and its effects in the present effort. First, feedback provided to participants was randomly assigned and was not specific to participants' responses. This may serve as a limitation in that in real-world settings, feedback is more likely to contain content-specific elements, thus reducing the fidelity of the task. Additionally, literature regarding feedback and creativity has suggested that direct and specific feedback should be provided on creative tasks (Amabile, Schatzel, Moneta, & Kramer, 2004; West, 1990). However, randomly assigning feedback allows greater experimental control in order to determine the effects of each feedback condition. Moreover, providing standardized feedback enables the control of external factors that often impact the effectiveness of feedback, such as supervisor bias against the individual proposing the idea (Watts et al., 2017).

Another limitation is that feedback valence in the present effort was manipulated as either positive or negative. While this is a traditional approach to studying feedback valence (London & Mone, 2015), it is important to note that there may be varying degrees of positive and negative feedback, which may impact how the feedback is received and applied (Anseel & Lievens, 2006; Brett & Atwater, 2001; Tonidandel, Quinones, & Adams, 2002). Similarly, the feedback standards manipulated in the present effort may not represent all possible standards relevant to the appraisal of ideas. For example, different types of standards may be applied in evaluating ideas in different domains, or different standards may have a greater impact in different domains. Additionally, feedback standards were presented as a package and in a fixed order, with participants being told to consider innovative, operative, or both innovative and operative

standards. Thus, results obtained in the present effort cannot speak to varying degrees of the application of these standards or the effects of presentation order when feedback standards are provided. Therefore, future studies should investigate feedback valence and feedback standards at different levels and across different domains in order to add to our understanding of the effects that these variables may have.

Even bearing these limitations in mind, the results obtained in the present effort do have some noteworthy implications. The first key finding is that it appears that people do use certain compensatory strategies to improve upon their creative ideas. These strategies include customer-focused strategies, such as aligning the creative product more closely to customer values, as well as financially-focused strategies such as bolstering the marketing strategy and creating more products to be sold (i.e., product expansion). Moreover, a review of the list of compensatory strategies identified suggests that people tend to use strategies that are either values-people driven or production-cost driven. For example, strategies such as novelty consideration, customer values, and idea completeness relate to the development of new and useful creative products that benefit people. Conversely, strategies such as customer expansion, product expansion, and financial consideration relate to the development of products for the sake of production and profit.

The distinction of these types of strategies is supported by the findings regarding the categorization of effective vs. ineffective compensatory strategies. Specifically, effective compensatory strategies were those that are values-people driven, such as novelty consideration, customer values, and short-term vs. long-term consequences. Ineffective compensatory strategies were those that are production-cost driven, such as customer expansion, financial consideration, and external support. What these findings imply is that implementing strategies that focus on the

value added to the customer – whether that be value added by explicitly taking into greater account customer values, or by considering the short and long-term consequences of product implementation – will have a positive impact on the development of creative solutions. Strategies, however, that are focused on firm production and profitability, rather than the customer, may not have an impact on the development of creative solutions, or may even have a negative impact on the development of creative solutions.

This finding was also supported by the regression results regarding the impact of effective and ineffective strategies on final plan quality, originality, and elegance. Specifically, it was found that the implementation of values-people focused strategies (i.e., effective compensatory strategies) improved the quality and elegance of creative solutions developed, whereas the implementation of production-cost driven strategies (i.e., ineffective compensatory strategies) did not lead to improvements in the development of creative solutions. These findings provide further support that focusing on the customer and the social impact of the product relative to the customer may lead to meaningful improvements in the development of creative solutions. Focusing on firm strategy and finances, however, does not appear to have an impact on the development of creative solutions.

This finding is important because it suggests that when organizations are trying to compensate or control for potential deficiencies in creative ideas, strategies for improvement should not be focused to profit or to market share. Rather, strategies for creative idea improvement should be to the customer and the value added by the product to the customer. The implications of this point are stressed by examining the strategies used by particularly successful innovative companies. For example, Google holds its innovation-oriented culture to be the most crucial factor and most effective strategy leading to Google's innovative success (Steiber &

Alänge, 2013). Google's culture is captured in the term "Googliness," which is stressed throughout every organizational process at Google, from selection to idea generation to team management. Googliness is defined by a set of key values, which notably include "do good for society" and put "first users, then money." The application of these cultural values in tandem with Google's innovative success suggests that implementing values-people focused strategies, such as the effective compensatory strategies identified in the present effort, may result in improvements of creative ideas and products. Moreover, a research study examining sustained corporate success across 700 European countries found that "uniqueness is more important than market share," with organizations focusing on improving the uniqueness and usefulness of products and services, rather than focusing on acquiring market share and profit, to achieve greater sustained corporate success (Matzler, Bailom, Anschober, & Richardson, 2010).

It is also important to note the specific impact that the effective compensatory strategies had on the creative problem-solving dimensions. Although these strategies led to improvements in solution quality and elegance, solution originality was not impacted. This finding may be explained by the nature of the dimensions of creative problem solutions. Specifically, the quality and elegance of creative problem solutions are more externally driven, such that external factors such as being encouraged to implement behavioral strategies may more readily impact the quality and elegance of creative problem solutions. Originality, however, is more internally driven and dependent on abilities such as divergent thinking. Thus, originality may not be as strongly impacted by the implementation of effective compensatory strategies. While the originality of creative solutions may not be improved by the use of effective compensatory strategies, improvements in the quality and elegance of creative solutions should not be overlooked. A higher quality and more elegant creative solution is a solution that is more useful,

more coherent, more refined, and ultimately a more effective solution to the creative problem at hand.

After determining the impact that compensatory strategies had on the development of creative solutions, the next question became: how do other forms of evaluation, such as leader feedback, impact the use of compensatory strategies? This question is important because leaders may facilitate followers' application of effective compensatory strategies by providing appropriate feedback. In the present effort, it was found that feedback valence and standards spoken to in leader feedback impacted the application of ineffective compensatory strategies. More specifically, positive feedback that applied both innovative and operative standards led to the application of more ineffective compensatory strategies. Negative feedback that applied only innovative standards led to the application of less ineffective compensatory strategies. Notably, positive feedback, regardless of the standards applied, always led to the application of more ineffective compensatory strategies than negative feedback. This may be the case because those who receive positive feedback, regardless of the content of that feedback, may be less likely to identify weaknesses in their creative ideas, and therefore less likely to apply effective compensatory strategies to improve upon their creative ideas. This finding suggests that, in supervising follower creative idea evaluation, leaders should consider avoiding overly positive feedback in order to reduce followers' use of potentially ineffective compensatory strategies. Negative feedback may be more beneficial in helping followers identify and improve upon weaknesses in their ideas.

Turning to the impact of feedback on the development of creative ideas, the type of feedback provided led to the development of more original creative problem solutions. More specifically, feedback that applied both innovative and operative standards, regardless of whether

feedback was positive or negative, led to more original creative problem solutions, as compared to feedback applying only innovative or only operative standards. It should be noted, though, that negative feedback, in comparison to positive feedback, that applied both innovative and operative standards led to the most original creative problem solutions. The finding that negative feedback that applied both innovative and operative standards led to the most original creative problem solutions suggests that receiving feedback regarding operative standards is still beneficial, but feedback should also encourage the exploration of innovative standards.

The finding that feedback applying both innovative and operative standards, regardless of feedback valence, improves creative solution originality also has noteworthy implications when considered within the broader context of the literature on feedback valence. The literature regarding feedback valence is mixed (Kluger & DeNisi, 1996), with evidence supporting both negative and positive feedback as drivers of performance (London & Mone, 2015). The investigation of feedback with respect to valence and standards spoken to helps disentangle these mixed findings. Specifically, the findings from the present effort suggest that both positive and negative feedback may be beneficial to creative solution originality; however, the standards applied in feedback in conjunction with feedback valence show that negative feedback has the most positive impact on creative solution originality when it is used in tandem with the application of both innovative and operative standards. Thus, it is not only the valence of feedback that matters, but also the standards being applied in conjunction with the valence of feedback that matters. Although this finding may not be surprising given the general literature on feedback and performance appraisal, which relates that multiple variables may interact to impact the effectiveness of feedback (Kluger & DeNisi, 1996), this finding points to the need for much more research on the various feedback attributes and their impact on creative performance.

Creative problem-solving is a difficult process that often ends in failure. Effective evaluation of creative ideas may help reduce the potential for error and lead to the development of more successful creative solutions. The present effort's findings suggest that the evaluation, and subsequent development, of creative ideas may be improved by applying strategies that compensate for weaknesses in ideas. In particular, the application of compensatory strategies that stress the development of products that align with customer values and benefit people may lead to significant improvements in creative solutions, whereas the application of compensatory strategies that emphasize profit apparently do not lead to improvements in creative solutions. Leaders may facilitate this process by providing negative feedback that reduces the application of ineffective strategies. Moreover, leaders may help followers improve the originality of their creative ideas by providing feedback that encourages evaluation with respect to innovative and operative standards. We hope the present effort serves as an impetus for future work examining strategies that may be used to improve the evaluation and development of creative ideas.

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Tables

Table 1

List of compensatory strategies with definitions and examples

Compensatory Strategy	Definition	Example
Novelty consideration	The extent to which the participant emphasizes remediating weaknesses in idea novelty, originality, and uniqueness	My plan does not bring anything new and does not create an original ad idea.
Company values	The extent to which the participant emphasizes company values, including the company's mission and cultural values, in order to improve their idea	The plan does not address the company's history and its values, which make Charamousse unique.
Customer values	The extent to which the participant emphasizes customer values, including relevant cultural values and societal norms, in order to improve their idea	I did not touch on the volunteering aspect of our customer base and should have considered it more.
Customer expansion	The extent to which the participant emphasizes expanding the product customer base in order to improve their idea	My plan makes the brand seem like it is only for the upper class. It does not make them seem inclusive but rather harsh and secluded.
Idea completeness	The extent to which the participant emphasizes the elaboration of ideas, including idea completeness and specificity, in order to improve their idea	My ideas were in a random order and were not specific. My ideas were lacking how the company would achieve these goals, and did not specify which goals would be achieved. I need to be more specific and elaborate in my next plan.
Financial consideration	The extent to which the participant emphasizes financial concerns, including financial benefits and profits, in order to improve their idea	I had no real financial analysis of implementing this marketing plan. My plan might not immediately yield profit.
Short-term vs. long-term consequences	The extent to which the participant emphasizes remediating weaknesses in long-term and/or short-term consequences	My plan was directed at short-term growth and not long-term growth.
External support	The extent to which the participant emphasizes remediating weaknesses in external support, including support from other companies and public figures	Another deficiency could be in asking influencers and popular people to endorse your product, you could lose money by paying that person and not getting the sales you hoped for, or the person could endorse it well and people could just not like that person and choose not to buy for that reason.

Table 1 (continued)

List of compensatory strategies and definitions

Compensatory Strategy	Definition	Example
Marketing strategy	The extent to which the participant emphasizes remediating weaknesses in the marketing strategy for the idea, including consideration of how and where the product will be sold	The plan does a poor job of making the commercial entertaining. I also could have placed more emphasis on what social media platform we would use to target college students.
Product expansion	The extent to which the participant emphasizes remediating weaknesses in product expansion, including consideration of adding, removing, and diversifying products	My plan also failed to explain the diversity of applications that our products can serve. Rather than emphasizing just the athletic side of our products, we should emphasize every side and show how versatile our products are.
Market competition	The extent to which the participant emphasizes remediating weaknesses by considering competitors and the impact of competition on product success	The similar companies may have monopoly on the market and as such infiltrating their products will not help.

Table 2

Correlations of compensatory strategies with the change in creative solution quality, originality, and elegance

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Quality Dif.																
2. Originality Dif.	.49**															
3. Elegance Dif.	.60**	.58**														
4. Novelty Cons.	-.07	.08	.03													
5. Company Val.	.11	.04	.06	.18**												
6. Customer Val.	.08	.01	.00	-.06	.32**											
7. Customer Exp.	.00	-.06	-.06	-.03	.19**	.68**										
8. Idea Comp.	.07	.14*	.09	.05	-.01	-.28**	-.23**									
9. Finance Cons.	-.09	-.14*	-.06	-.13*	-.08	-.06	.12*	-.12*								
10. S. vs L. Cons	.00	-.07	.00	.07	.03	-.13*	.05	.00	.58**							
11. External Sup.	-.03	-.04	-.04	-.03	.02	.16**	.23**	-.07	.29**	.12*						
12. Market Strat.	.04	-.06	-.05	-.01	.29**	.53**	.55**	-.10	.13*	.05	.32**					
13. Product Exp.	.00	-.03	.02	-.01	.07	.24**	.33**	-.06	.16**	.11	.18**	.12*				
14. Market Comp.	.13*	.03	.05	.09	.03	.05	.15*	.04	.03	.03	.08	.22**	.09			
15. Effective CS	.12*	.08	.09	.51**	.64**	.41**	.34**	.28**	.06	.35**	.12	.40**	.18**	.40**		
16. Ineffective CS	-.03	-.11	-.06	-.07	.14*	.46**	.68**	-.18**	.59**	.32**	.67**	.67**	.52**	.18**	.34**	

Note. Quality Dif. = change in quality from final to initial plans; Originality Dif. = change in originality from final to initial plans; Elegance Dif. = change in elegance from final to initial plans; Novelty Cons. = novelty consideration; Company Val. = company values; Customer Val. = customer values; Customer Exp. = customer expansion; Idea Comp. = idea completeness; Finance Cons. = financial consideration; S. vs L. Cons. = short-term vs long-term consequences; External Sup. = external support; Market Strat. = marketing strategy; Product Exp. = product expansion; Market Comp. = market competition; Effective CS = effective compensatory strategies; Ineffective CS = ineffective compensatory strategies

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 3

Categorization of compensatory strategies

Effective compensatory strategies	Ineffective compensatory strategies
Novelty consideration	Customer expansion
Company values	Financial consideration
Customer values	External support
Idea completeness	Marketing strategy
Short-term vs long-term consequences	Product expansion
Market competition	

Table 4

Regression results of compensatory strategies predicting quality, originality, and elegance

	Quality				Originality				Elegance			
	β	<i>SE</i>	R^2	ΔR^2	β	<i>SE</i>	R^2	ΔR^2	β	<i>SE</i>	R^2	ΔR^2
Step 1			.03	.03			.02	.02			.03	.03
Intelligence	.16**	.01			.11	.01			.15*	.01		
Divergent Thinking	-	-			-	-			.14*	.01		
Step 2			.10	.07**			.03	.01			.10	.07**
Effective CS	.21**	.12			.12	.15			.22**	.11		
Ineffective CS	.10	.08			.015	.10			-.01	.07		

Note. * $p < .05$ ** $p < .01$.

Table 5

Effects of feedback on compensatory strategies

	Effective CS				Ineffective CS			
	<i>F</i>	<i>df</i>	<i>p</i>	η^2	<i>F</i>	<i>df</i>	<i>p</i>	η^2
Significant Covariates								
Expertise	14.20	1	.00	.05	7.20	1	.01	.03
Divergent Thinking	-	-	-	-	4.59	1	.03	.02
Neuroticism	-	-	-	-	3.86	1	.05	.01
Effects								
Feedback	1.85	5	.10	.03	3.11	5	.01	.05

Note. *F* indicates F-ratio, *df* indicates degrees of freedom, *p* indicates significance level, η^2 indicates squared effect size estimate.

Table 6
Effects of feedback on quality, originality, and elegance

	Quality				Originality				Elegance			
	<i>F</i>	<i>df</i>	<i>p</i>	η^2	<i>F</i>	<i>df</i>	<i>p</i>	η^2	<i>F</i>	<i>df</i>	<i>p</i>	η^2
Significant Covariates												
Intelligence	8.91	1	.003	.03	-	-	-	-	6.11	1	.01	.02
Divergent Thinking	-	-	-	-	-	-	-	-	6.19	1	.01	.02
Effects												
Feedback	1.10	5	.36	.02	1.56	5	.05	.04	1.54	5	.18	.03

Note. *F* indicates F-ratio, *df* indicates degrees of freedom, *p* indicates significance level, η^2 indicates squared effect size estimate.

Figures

Marketing Research

Customer Profile: Our average customer at Charamousse Clothing is an upwardly mobile extrovert with a passion for environmentalism. Our average customer spends a larger percentage of their budget on clothing than the average American consumer.

Age: The primary purchasers are between the ages of 25-39.

Brand Recognition/Power: we tend to be well known in the Midwest but in the South our name is relatively unknown.

Competitors: Our primary competitors tend to be designer clothing.

Education: Students have historically shown a strong interest in our products but our primary purchasers are typically college graduates. This finding could be due to the high price of our merchandise.

Gender: Charamousse clothing tends to be popular with both male and females, though historically 63% of our customers that ultimately purchase an article of clothing are female.

Income: The average income of the Charamousse customer hovers in the mid 60,000s. This income is notably higher than the national mean and shows that we tend to cater to more affluent clientele.

Interests and Activities: Our customers are much more likely than the general population to exercise regularly, typically through yoga or some other scheduled class rather than weight training or sports. They generally appreciate nature but spend little time outside. Lastly, the average customer tends to volunteer more than most Americans.

Location: To date we have been centered around Chicago so we cannot speak very much to a geographic location but we can say that our products tend to be in more metropolitan areas.

Similar Companies: Customers who buy Charamousse Clothing tend to also purchase products computers made by Apple, hybrid cars of any brand, and drinks made by Odwalla.

Figure 1. Charamousse market research summary

From: Colleen.Anderson@Charamousse.com
To: advertising@Charamousse.com
Subject: Ad Campaign
CC: M.Foster@Charamousse.com

Hello,

I've just had a chance to read over your draft of your plan for our marketing ad campaign, and I can say that I'm quite impressed. Your ideas are excellent and definitely on the right track, and I'm excited to continue to review your work. I would like you to submit to me a revised draft that more readily keeps Charamousse's innovative standards in mind. More specifically, we want our marketing ad campaign to be original and new, as well as adaptable in the sense that it may be adjusted to and used in different situations.

Additionally, the plan should consider long-term viability, or new potential applications of the idea in the future, as well as benefits from the implementation of the ad campaign.

I think what would be most helpful for you is to use a strategy we often use at the company for revising work. This strategy is to write a list of deficiencies in your ideas prior to revising your work. This tends to be a good approach for helping people in revising their work. I would like you to try this strategy and then send me your revised plan.

Colleen Anderson
Senior Vice President
Charamousse Clothing Company
104 E Roosevelt Road
Wheaton, IL 60187
Telephone: 630.248.0589

Figure 2. Example feedback

Elegance

Definition: The degree to which the participant's marketing campaign is articulately arranged in a succinct way.

Things to look for:

- **Flow:** Do all of the parts of their plan fit together smoothly? Does it fit together seamlessly? Do they connect the ideas rather than just list them? Do they carry the reader throughout the campaign?
- **Refinement:** Is the campaign easy to follow and not overwhelmed with irrelevant details? Is the plan focused well so that it uses the minimal number of elements to operate?
- **Clever:** Was the plan well-designed and assembled in a clever manner?

Scale and Benchmarks

1) Poor rating: The elements of the marketing strategy do not fit well together. There is little or no focus to the strategy. The solution is basically a list of concepts that are not linked in any way.

Example: "To successfully campaign, probably advertise in a newspaper. Find a way to advertise or get the word out about the store to businesses who hire young adults out of college. Focus on getting a group to start buying the clothing then they will have friends and family and co-workers who see the clothing and want to buy it. After they do that, business grows more and more. If a billboard space would be cheap, buy a billboard on a road that most young adults take to get to work and/or take their kids to school."

3) Average rating: The marketing strategy has some elements that fit well together. The strategy is somewhat focused. The solution needs to have at least some explanation of the why concepts are related to each other. The solution must also flow, but will be choppy or skip from one category of concepts to another.

Example: "These clothes are one of a kind, appealing to the unique individual and also conserving the environment. They even have discounts for members to join. New to the south but definitely not new to the fashion world starting a trend in the south, everyone should check it out. Information is on facebook, twitter, radio and tv."

5) Excellent rating: The elements of the marketing strategy fit exceptionally well together. The strategy is focused and uses only the minimum number of elements to be effective. The solution should explain the relationship between concepts and have a very clear flow without any disruptions throughout the entire solution.

Example: "To create a final ad campaign first we need to endorse a celebrity like Jennifer Aniston. She is classy and sophisticated, well known, cares about environment, and attractive. Then put her commercials on billboards, top television show commercials, on facebook, and in magazines like People and US Weekly. Also create a contest for who designs the best outfit, gets to have Jennifer wear it on the red carpet. Also have Jennifer host a fashion show and invite all A-list celebrities to attend and tons of paparazzi. The southerners love keeping up to date with hot, trendy fashion and with the correct advertising, we can succeed in creating a a-list line for people to purchase which will take the company out of its slump and produce mass revenue."

Figure 3. Example benchmark rating scale